

## II

(Non-legislative acts)

## REGULATIONS

## COMMISSION DELEGATED REGULATION (EU) 2021/2139

of 4 June 2021

**supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives**

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 <sup>(1)</sup>, and in particular Articles 10(3) and 11(3) thereof,

Whereas:

- (1) Regulation (EU) 2020/852 establishes the general framework for determining whether an economic activity qualifies as environmentally sustainable for the purposes of establishing the degree to which an investment is environmentally sustainable. That Regulation applies to measures adopted by the Union or by Member States that set out requirements for financial market participants or issuers in respect of financial products or corporate bonds that are made available as environmentally sustainable, to financial market participants that make available financial products, and to undertakings that are subject to the obligation to publish a non-financial statement pursuant to Article 19a of Directive 2013/34/EU of the European Parliament and of the Council <sup>(2)</sup> or a consolidated non-financial statement pursuant to Article 29a of that Directive. Economic operators or public authorities that are not covered by Regulation (EU) 2020/852 may also apply that Regulation on a voluntary basis.
- (2) Articles 10(3) and 11(3) of Regulation (EU) 2020/852 require the Commission to adopt delegated acts establishing the technical screening criteria for determining the conditions under which a specific economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation, respectively, and to establish, for each relevant environmental objective laid down in Article 9 of that Regulation, technical screening criteria for determining whether that economic activity causes no significant harm to one or more of those environmental objectives.
- (3) Pursuant to Article 19(1), point (h), of Regulation (EU) 2020/852, the technical screening criteria are to take into account the nature and the scale of the economic activity and sector that they refer to, and whether the economic activity is a transitional economic activity as referred to in Article 10(2) of Regulation (EU) 2020/852, or an enabling activity as referred to in Article 16 of that Regulation. For the technical screening criteria to meet the requirements of Article 19 of Regulation (EU) 2020/852 in an effective and balanced way they should be set as a quantitative threshold or minimum requirement, as a relative improvement, as a set of qualitative performance requirements, as process or practice-based requirements, or as a precise description of the nature of the economic activity itself where that activity by its nature can contribute substantially to climate change mitigation.

<sup>(1)</sup> OJ L 198, 22.6.2020, p. 13.

<sup>(2)</sup> Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC (OJ L 182, 29.6.2013, p. 19).

- (4) The technical screening criteria for determining whether an economic activity contributes substantially to climate change mitigation or climate change adaptation should ensure that the economic activity makes a positive impact on the climate objective or reduces negative impact on the climate objective. Those technical screening criteria should therefore refer to thresholds or performance levels that the economic activity should achieve in order to qualify as contributing substantially to one of those climate objectives. The technical screening criteria for 'do no significant harm' should ensure that the economic activity has no significant negative environmental impact. Consequently, those technical screening criteria should specify the minimum requirements that the economic activity should meet in order to qualify as environmentally sustainable.
- (5) The technical screening criteria for determining whether an economic activity contributes substantially to climate change mitigation or climate change adaptation and does no significant harm to any of the environmental objectives should build, where relevant, on existing Union law, best practices, standards and methodologies, as well as on well-established standards, practices and methodologies developed by internationally reputed public entities. Where objectively there are no viable alternatives for a specific policy area, the technical screening criteria could also build on well-established standards developed by internationally reputed private bodies.
- (6) In order to ensure a level playing field, the same categories of economic activities should be subject to the same technical screening criteria for each climate objective. It is therefore necessary that the technical screening criteria, where possible, follow the classification of economic activities laid down in the NACE Revision 2 classification system of economic activities established by Regulation (EC) No 1893/2006 of the European Parliament and of the Council <sup>(3)</sup>. To facilitate the identification by undertakings and financial market participants of the relevant economic activities for which technical screening criteria should be established, the specific description of an economic activity should also include the references to NACE codes that can be associated with that activity. Those references should be understood as indicative and should not prevail over the specific definition of the activity provided in its description.
- (7) The technical screening criteria for determining under which conditions an economic activity qualifies as contributing substantially to climate change mitigation should reflect the need to avoid producing greenhouse gas emissions, to reduce such emissions or to increase greenhouse gas removals and long-term carbon storage. It is therefore appropriate to focus first on those economic activities and sectors that have the greatest potential to achieve those aims. The choice of those economic activities and sectors should be based on their share of overall greenhouse gas emissions, and on evidence regarding their potential to contribute to avoid producing greenhouse gas emissions, to reduce such emissions or to contribute to greenhouse gas removal, or to enable such avoidance, reduction, removal or long-term storage for other activities.
- (8) The methodology to calculate life-cycle greenhouse gas emissions should be robust and widely applicable and thereby promote the comparability of greenhouse gas emissions calculations within and across sectors. It is therefore appropriate to demand the same calculation methodology across activities, where such calculation is required, while providing sufficient flexibility for entities applying Regulation (EU) 2020/852. Accordingly, the Commission Recommendation 2013/179/EU is useful for the calculation of life-cycle greenhouse gas emissions, with, as an alternative, the possibility to use ISO 14067 or ISO 14064-1 standards. Where alternative well-established tools or standards are particularly suitable to provide exact and comparable information on the calculation of life-cycle greenhouse gas emission for a specific sector, such as the G-res tool for the hydropower sector and the ETSI standard ES 203 199 for the information and communication sector, it is appropriate to include such tool or standards as additional alternatives for that sector.
- (9) The methodology to calculate life-cycle greenhouse gas emissions for activities in the hydropower sector should reflect the specificities of that sector, including new modelling methodologies, scientific knowledge and empirical measurements from reservoirs worldwide. To allow accurate reporting on the net impact on greenhouse gas emissions for the hydropower sector, it is therefore appropriate to allow for the use of the G-res tool that is publicly available free of charge and has been developed by the International Hydropower Association in collaboration with the UNESCO Chair for Global Environmental Change.

<sup>(3)</sup> Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains (OJ L 393, 30.12.2006, p. 1).

- (10) The methodology to calculate life-cycle greenhouse gas emissions for activities in the information and communication sector should reflect the specificities of that sector, in particular the specialised work and guidance that has been provided by European Telecommunications Standards Institute (ETSI) for the operation of life-cycle assessments in the information and communication sector. It is therefore appropriate to allow for the use of the ETSI standard ES 203 199 as a methodology to accurately calculate greenhouse gas emissions for that sector.
- (11) The technical screening criteria for certain activities rely on elements of considerable technical complexity and the assessment whether those criteria have been complied with may require expert knowledge and may not be feasible for investors. To facilitate that assessment, the compliance with such technical screening criteria for such activities should be verified by an independent third party.
- (12) Enabling economic activities as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 do not substantially contribute to climate change mitigation through their own performance. Such activities play a crucial role in the decarbonisation of the economy by directly enabling other activities to be carried out at a low carbon level of environmental performance. Technical screening criteria should therefore be established for those economic activities which play an essential role in enabling the target activities to become low-carbon or to lead to greenhouse gas reductions. Those technical screening criteria should ensure that an activity complying with them respects the safeguards of Article 16 of Regulation (EU) 2020/852, in particular that the activity does not lead to a lock-in of assets and has a substantial positive environmental impact.
- (13) Transitional economic activities as referred to in Article 10(2) of Regulation (EU) 2020/852 cannot yet be replaced by technologically and economically feasible low-carbon alternatives but support the transition to a climate-neutral economy. Those activities can play a crucial role in mitigating climate change by substantially reducing their currently high carbon footprint, including by helping to phase out reliance on fossil fuels. Technical screening criteria should therefore be established for those economic activities, where near-zero carbon solutions are not yet viable or where near-zero carbon activities exist, but are not yet practicable at scale, that have the highest potential for significant greenhouse gas reductions. Those technical screening criteria should ensure that an activity complying with them respects the safeguards of Article 10(2) of Regulation (EU) 2020/852, in particular that the activity has the greenhouse gas emissions corresponding to the best performance in the sector or industry, does not hamper the development and deployment of low-carbon alternatives and does not lead to a lock-in of carbon-intensive assets.
- (14) In view of the ongoing negotiations underway on the Common Agricultural Policy (CAP), and in order to achieve greater coherence across the different instruments to achieve the environmental and climate ambitions of the Green Deal, the establishment of the technical screening criteria for agriculture should be delayed.
- (15) Forests are under increasing pressure as a result of climate change, which aggravates other key drivers of pressures such as pests, diseases, extreme weather events and forest fires. Other pressures come from rural abandonment, lack of management and fragmentation due to land use changes, increasing management intensity due to rising demand for wood, forest products and energy, infrastructure development, urbanisation and land take. At the same time, forests play a crucial role for reaching the Union's objectives of reversing biodiversity loss and enhancing ambition on climate change mitigation and adaptation, reducing and controlling disaster risk due in particular to floods, droughts or wildfires and promoting a circular bioeconomy. To reach climate neutrality and a healthy environment, it is necessary to improve both the quality and the quantity of forest areas that are the largest carbon sink in the land use, land use change and forestry (LULUCF) sector. Forest-related activities can contribute to climate change mitigation by increasing net removals of carbon dioxide, by preserving carbon stocks, and by providing materials and renewable energy, generating co-benefits for climate change adaptation, biodiversity, circular economy, sustainable use and protection of water and marine resources, and pollution prevention and control. Technical screening criteria should therefore be laid down for afforestation, forest restoration, forest management and forest conservation activities. Those technical screening criteria should be fully in line with Union's climate change adaptation, biodiversity and circular economy objectives.

- (16) To measure the evolution of greenhouse gas emission savings and carbon stock in forest ecosystems, it is appropriate that forest owners should perform a climate benefit analysis. In order to reflect proportionality and minimise administrative burden for small-scale forest owners in particular, forest holdings below 13 hectares should not be required to perform a climate benefit analysis. In order to reduce administrative costs further, smaller forest owners should be allowed to perform a group assessment with other holdings to certify their calculations, performed every 10 years. Adequate free-of charge tools, such as tools provided by the Food and Agriculture Organisation of the United Nations (FAO), based on data of the Intergovernmental Panel on Climate Change (IPCC) <sup>(4)</sup>, are available to estimate the magnitude of costs and minimise costs and burdens for small-scale foresters. The tool can notably be adapted to different levels of analysis, such as specific values and detailed calculation for big holdings, default values and simplified calculation for smaller owners.
- (17) In the follow-up to communications from the Commission of 11 December 2019 ‘The European Green Deal’ <sup>(5)</sup>, of 20 May 2020 on ‘EU Biodiversity Strategy for 2030’ <sup>(6)</sup> and of 17 September 2020 ‘Stepping up Europe’s 2030 climate ambition – Investing in a climate-neutral future for the benefit of our people’ <sup>(7)</sup>, in line with Union wider biodiversity and climate neutrality ambitions, with the communication from the Commission of 24 February 2021 ‘Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change’ <sup>(8)</sup>, and with the new Forests Strategy planned in 2021, technical screening criteria for forest activities should be complemented, reviewed and where necessary revised at the time of adoption of the delegated act referred to in Article 15(2) of Regulation (EU) 2020/852. Those technical screening criteria should be reviewed to take better into account biodiversity friendly practices that are under development such as close to nature forestry.
- (18) Given its importance for reducing greenhouse gas emissions and for strengthening land carbon sinks, wetland restoration has a potential to contribute substantially to climate change mitigation. Wetlands restoration can also deliver benefits for climate change adaptation, including through buffering climate change impacts, and help to reverse the loss of biodiversity and to preserve water quantity and quality. To ensure coherence with the ‘The European Green Deal’, with the communication ‘Stepping up Europe’s 2030 climate ambition’ and with the EU Biodiversity Strategy for 2030, technical screening criteria should also cover the restoration of wetlands.
- (19) The manufacturing sector emits approximately 21 % of direct greenhouse gas emissions in the Union <sup>(9)</sup>. It is the third largest source of those emissions in the Union and thus can play a pivotal role in climate change mitigation. At the same time, manufacturing can be a key sector in enabling greenhouse gas emission avoidance and reductions in other sectors of the economy by manufacturing the products and technologies that those other sectors need in order to become or remain low-carbon. The technical screening criteria for the manufacturing sector should therefore be specified both for manufacturing activities associated with the highest levels of greenhouse gas emissions and for manufacturing of low-carbon products and technologies.
- (20) Manufacturing activities for which there are no technologically and economically feasible low-carbon alternatives but that support the transition to a climate-neutral economy should be considered transitional economic activities, as referred to in Article 10(2) of Regulation (EU) 2020/852. To encourage the reduction of greenhouse gas emissions, the thresholds of the technical screening criteria for those activities should be set at a level that will only be achievable by the best performers of each sector, in most cases based on greenhouse gas emissions per unit of output produced.

<sup>(4)</sup> The EX-Ante Carbon-balance Tool (EX-ACT) (version of 4.6.2021: <http://www.fao.org/in-action/epic/ex-act-tool/suite-of-tools/ex-act/en/>).

<sup>(5)</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: The European Green Deal (COM(2019) 640 final).

<sup>(6)</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: EU Biodiversity Strategy for 2030 Bringing nature back into our lives (COM(2020) 380 final).

<sup>(7)</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Stepping up Europe’s 2030 climate ambition Investing in a climate-neutral future for the benefit of our people (COM(2020) 562 final).

<sup>(8)</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change (COM(2021) 82 final).

<sup>(9)</sup> Shares of emissions per sector representing direct emissions and based on Eurostat data from 2018 and 2019 (NACE level 2), except for the construction sector that has no associated NACE code and therefore its emissions are considered across various sectors (version of 4.6.2021: [https://ec.europa.eu/info/news/new-rules-greener-and-smarter-buildings-will-increase-quality-life-all-europeans-2019-apr-15\\_en](https://ec.europa.eu/info/news/new-rules-greener-and-smarter-buildings-will-increase-quality-life-all-europeans-2019-apr-15_en)).

- (21) In order to ensure that transitional manufacturing activities as referred to in Article 10(2) of Regulation (EU) 2020/852 remain on a credible pathway to decarbonisation and in accordance with Article 19(5) of that Regulation, the technical screening criteria for those economic activities should be reviewed at a minimum, every three years. That review should include an analysis of whether the technical screening criteria are underpinned by the most relevant standards and whether life-cycle emissions from those activities are sufficiently taken into account. That review should also assess the potential use of captured carbon, in the light of technology development. For manufacturing of iron and steel, new data and evidences from low-carbon steel pilot production processes using hydrogen should be further considered and the use of EU emissions trading scheme and of other possible benchmarks in the technical screening criteria should be further assessed.
- (22) For manufacturing activities that are to be considered to be the enabling activities referred to in Article 10(1), point (i), of Regulation (EU) 2020/852, the technical screening criteria should be based predominantly on the nature of the manufactured products, combined, where appropriate, with additional quantitative thresholds to ensure that those products can make a substantial contribution to avoidance or reduction of greenhouse gas emissions in other sectors. In order to reflect the fact that priority is given to activities that have the greatest potential to avoid producing greenhouse gas emissions, to reduce such emissions or to increase greenhouse gas removals and long-term carbon storage, the enabling manufacturing activities should focus on the manufacturing of products that are necessary for those economic activities to be carried out.
- (23) The manufacturing of electrical equipment for electricity plays an important role for the upgrade, uptake and compensation of fluctuations of the electricity provided by the renewable sources of energy in the Union electric grids, the recharging of the zero emissions vehicles and deployment of smart, green house applications. At the same time, manufacturing of electrical equipment for electricity might enable the development of the smart housing concept with the objective of further promoting the use of renewable sources of energy and the good management of home equipment. It might therefore be necessary to complement the technical screening criteria in the manufacturing sector and to assess the potential of the manufacture of electrical equipment to make a substantial contribution to the climate change mitigation and climate change adaptation.
- (24) Energy efficiency measures and other climate change mitigation measures, such as deployment of on-site renewable energy technologies, and existing state-of-the-art technologies can lead to significant greenhouse gas emission reductions in the manufacturing sector. Therefore, those measures can play an important role to help economic activities in the manufacturing sector for which technical screening criteria should be established, to reach their respective performance standards and thresholds for substantial contribution to climate change mitigation.
- (25) The energy sector accounts for approximately 22 % of direct greenhouse gas emissions in the Union and for approximately 75 % of those emissions when taking into account the use of energy in other sectors. It thus plays a key role in climate change mitigation. The energy sector has significant potential to reduce greenhouse gas emissions, and several activities in that sector act as enabling activities that facilitate the transition of the energy sector towards renewable or low-carbon electricity or heat. It is therefore appropriate to establish technical screening criteria for a wide range of activities related to the energy supply chain, ranging from electricity or heat generation from different sources, through transmission and distribution networks to storage, as well as heat pumps and the manufacture of biogas and biofuels.
- (26) The technical screening criteria for determining whether electricity or heat generation activities, including cogeneration activities, contribute substantially to climate change mitigation should ensure that greenhouse gas emissions are reduced or avoided. Technical screening criteria based on greenhouse gas emissions should signal the decarbonisation pathway for those activities. The technical screening criteria for enabling activities that facilitate the long-term decarbonisation should predominantly be based on the nature of the activity or on the best available technologies.
- (27) Regulation (EU) 2020/852 recognises the importance of 'climate-neutral energy' and requires the Commission to assess the potential contribution and feasibility of all relevant existing technologies. For nuclear energy, that assessment is still ongoing and, as soon as the dedicated process is complete, the Commission will follow up based on its results in the context of this Regulation.



- (28) The legal boundaries for transitional activities set out in Article 10(2) of Regulation (EU) 2020/852 provide constraints in respect to greenhouse gas intensive activities with large potential for emission reduction. Such transitional activities should make a substantial contribution to climate change mitigation where no technologically and economically feasible low carbon alternative exists, provided they are compatible with a pathway to limit the temperature increase to 1,5 °C above pre-industrial levels, reflect best-in-class performance, do not hamper the development and deployment of low-carbon alternatives and do not lead to lock-in of carbon-intensive assets. In addition, Article 19 of the same Regulation requires, in particular, that the technical screening criteria should be based on conclusive scientific evidence. Where natural gas activities fulfil those requirements, they will be included in a future delegated act. For these activities, the technical screening criteria for assessing substantial contribution to climate change mitigation and 'do no significant harm' to other environmental objectives will be specified in that future delegated act. Activities that do not meet these requirements cannot be recognised under the Regulation (EU) 2020/852. In order to acknowledge the role of natural gas as an important technology in reducing greenhouse gas emissions, the Commission will consider a specific legislation to ensure that activities contributing to emissions reductions would not be deprived of appropriate financing.
- (29) The technical screening criteria for electricity or heat generation activities as well as for transmission and distribution networks should ensure coherence with the Communication from the Commission of 14 October 2020 on an EU strategy to reduce methane emissions<sup>(10)</sup>. It may therefore be necessary to review, complement, and, where necessary, revise those technical screening criteria to reflect any future metrics and requirements established as follow-up to that strategy.
- (30) The technical screening criteria for the production of heating, cooling and power from bioenergy and the production of biofuels and biogas for transport should be consistent with the comprehensive sustainability framework for those sectors laid down under Directive (EU) 2018/2001 of the European Parliament and of the Council<sup>(11)</sup>, setting requirements for sustainable harvesting, carbon accounting and greenhouse gas emission savings.
- (31) In the follow-up of to the European Green Deal, the European Climate Law<sup>(12)</sup> proposal, the EU Biodiversity Strategy for 2030, and in accordance with the biodiversity and climate neutrality ambitions of the Union, technical screening criteria for bioenergy activities should be complemented, reviewed and where necessary revised to take into account the latest evidence base and policy developments at the time of adoption of the delegated act referred to in Article 15(2) of Regulation (EU) 2020/852 and taking into account relevant Union law, including Directive (EU) 2018/2001 and its future revisions.
- (32) Greenhouse gas emissions in the Union stemming from the water, sewerage, waste and remediation sector are relatively small. That sector nevertheless has a great potential to contribute to reduce greenhouse gas emissions in other sectors, particularly through the provision of secondary raw materials to replace virgin raw materials, through replacing fossil-based products, fertiliser and energy, and through the transport and permanent storage of captured carbon dioxide. Furthermore, activities involving anaerobic digestion as well as composting of separately collected bio-waste, which avoid landfilling of bio-waste are particularly important for reducing methane emissions. The technical screening criteria for waste activities should therefore recognise those activities as substantially contributing to climate change mitigation, provided that those activities apply certain best practices for that sector. Those technical screening criteria should also ensure that waste treatment options are in line with higher levels of the waste hierarchy. The technical screening criteria should recognise as substantially contributing to climate change mitigation those activities that process a uniformly set minimum share of sorted separately collected non-hazardous waste into secondary raw materials. However, it is not possible at this stage for technical screening criteria based on a uniformly set target for reprocessing waste to address fully the climate mitigation potential of individual material streams. It may therefore be necessary to further assess and review those technical screening criteria. The uniformly set target should be without prejudice to waste management targets addressed to Member States in Union legislation on waste. For activities related to water collection, treatment and supply as well

<sup>(10)</sup> Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions: EU strategy to reduce methane emissions (COM(2020) 663 final).

<sup>(11)</sup> Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, p. 82).

<sup>(12)</sup> Amended proposal for a Regulation of the European Parliament and of the Council on establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law) (COM(2020) 563 final).

as centralised waste water treatment systems, those technical screening criteria should take into account absolute performance and relative performance improvement targets in relation to energy consumption and alternative metrics, where relevant, such as leakage levels in water supply systems.

- (33) Transport operations consume one third of all energy in the Union and account for approximately 23 % of total direct greenhouse gas emissions in the Union. Decarbonising the transport fleet and infrastructure can therefore play a central role in climate change mitigation. Technical screening criteria for the transport sector should focus on reducing the main emission sources from that sector, while also considering the need to shift the transport of people and goods to lower emission modes and for the creation of an infrastructure that enables clean mobility. Technical screening criteria for the transport sector should therefore focus on the performance within one transport mode, while also taking into account the performance of that transport mode in comparison with other transport modes.
- (34) Given their potential to reduce their greenhouse gas emissions and thus contribute to greening the transport sector, maritime shipping and aviation constitute important transport modes for the transition to a low-carbon economy. According to the communication from the Commission of 9 December 2020 'Sustainable and Smart Mobility Strategy— putting European transport on track for the future' <sup>(13)</sup>, zero emission vessels are expected to become ready for market by 2030. According to that strategy, large zero-emission aircrafts are expected to become ready for market by 2035 for short distance, while for longer distance decarbonisation is expected to rely on renewable and low-carbon fuels. Separate studies have also been conducted on sustainable financing criteria for those sectors. Therefore, maritime shipping should be considered as a transitional economic activity as referred to in Article 10(2) of Regulation (EU) 2020/852. Shipping is one of the least carbon intensive ways to transport goods. To ensure equal treatment of shipping in comparison with other modes of transport, technical screening criteria for maritime transport should be established and should be applicable until the end of 2025. It will however be necessary to further assess maritime shipping and, where appropriate, to establish technical screening criteria for maritime shipping applicable as of 2026. It will also be necessary to further assess aviation and, where appropriate, to establish relevant technical screening criteria. Furthermore, the technical screening criteria should be established for low carbon transport infrastructure for certain modes of transport. However, in light of the potential of transport infrastructure to contribute to modal shift, it will be necessary to assess and where appropriate establish relevant technical screening criteria for overall infrastructure that is essential for low carbon transport modes, notably inland waterways. Depending on the outcome of the technical assessment, relevant technical screening criteria should also be established for the economic activities referred to in this recital at the time of adoption of the delegated act referred to in Articles 12(2), 13(2), 14(2) and 15(2) of Regulation (EU) 2020/852.
- (35) To ensure that the transport activities considered as sustainable do not facilitate the use of fossil fuels, the technical screening criteria for the relevant activities should exclude assets, operations and infrastructure dedicated to transport of fossil fuels. While applying this criterion, it is necessary to recognise the multiple uses, different ownership, user arrangements and fuels blending rates, in line with the relevant existing market practices. The Platform on Sustainable Finance should assess the usability of this criterion in the context of fulfilling its mandate.
- (36) Buildings across all sectors in the Union are responsible for 40 % of energy consumption and 36 % of carbon emissions. Buildings can therefore play an important role in climate change mitigation. Technical screening criteria should therefore be laid down for the construction of new buildings, for building renovation, installation of different energy efficiency equipment, on-site renewables, provision of energy services, and for the acquisition and ownership of buildings. Those technical screening criteria should be based on the potential impact of those activities, on the energy performance of buildings and on related greenhouse gas emissions and embedded carbon. For new buildings, it might be necessary to review the technical screening criteria to ensure that those criteria remain aligned with the Union climate and energy targets.
- (37) The construction of an asset or facility that is an integral part of an activity, for which technical screening criteria determining under which conditions that activity qualifies as contributing substantially to climate change mitigation should be established, may represent an important condition for that economic activity to be carried out. It is therefore appropriate to include the construction of such assets or facilities as part of the activity for which that construction is relevant, in particular for activities in the energy sector, the water, sewerage, waste and remediation sector as well as the transport sector.

<sup>(13)</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Sustainable and Smart Mobility Strategy – putting European transport on track for the future (COM(2020) 789 final).

- (38) The information and communication sector is a constantly growing sector representing an increasing share in greenhouse gas emissions. At the same time, information and communication technologies have the potential to contribute to climate change mitigation and to reduce greenhouse gas emissions in other sectors, such as by providing solutions that may help decision making enabling greenhouse gas emission reductions. Technical screening criteria should therefore be laid down for data processing and hosting activities that emit high volumes of greenhouse gas, and for data-driven solutions that enable reductions in greenhouse gas emissions in other sectors. The technical screening criteria for those activities should be based on the best practices and standards in that sector. They may need to be reviewed and updated in the future to take into account the greenhouse gas reduction potential from increased durability of information and communication technologies hardware solutions and the potential for digital technologies to be deployed in each sector directly to enable greenhouse gas emissions reductions. Moreover, the deployment and operation of electronic communications networks use considerable amounts of energy and have the potential to bring significant reductions of greenhouse gas emissions. It may therefore be necessary to assess those activities and establish relevant technical screening criteria, where appropriate.
- (39) Furthermore, information and communication technology solutions that are an integral part of those economic activities for which technical screening criteria for substantial contribution to climate change mitigation should be established for their own respective performance, can also be of particular importance in assisting those different activities to reach the standards and thresholds established under those criteria.
- (40) Research, development and innovation have the potential to enable other sectors to meet their respective climate change mitigation targets. The technical screening criteria for research, development and innovation activities should therefore focus on the potential of solutions, processes, technologies and other products for reducing greenhouse gas emissions. Research dedicated to enabling activities as referred to in Article 10(1), point (i) of Regulation (EU) 2020/852 can also play an important role in enabling those economic activities and their target activities to substantially reduce their greenhouse gas emissions or to improve their technological and economic feasibility and ultimately facilitate their scaling up. Research can also play an important role in further decarbonisation of transitional activities as referred to in Article 10(2) of Regulation (EU) 2020/852, by enabling those activities to be carried out with substantially lower greenhouse gas emissions levels compared to the thresholds specified in the technical screening criteria for substantial contribution to climate change mitigation for those activities.
- (41) Furthermore, research, development and innovation that are an integral part of those economic activities for which technical screening criteria for substantial contribution to climate change mitigation should be established for their own respective performance, can also be of particular importance in assisting those different activities to reach the standards and thresholds established under those criteria.
- (42) The technical screening criteria for determining under which conditions an economic activity qualifies as contributing substantially to climate change adaptation should reflect the fact that climate change is likely to affect all sectors of the economy. As a result, all sectors will need to be adapted to the adverse impact of the current climate and the expected future climate. It needs to be ensured, however, that an economic activity that contributes substantially to climate change adaptation also causes no significant harm to any of the other environmental objectives laid down in Article 9 of Regulation (EU) 2020/852. It is therefore appropriate to first establish technical screening criteria for climate change adaptation for those sectors and economic activities that are covered by the technical screening criteria for climate change mitigation, including the relevant 'do no significant harm' criteria to the environmental objectives. The descriptions of the economic activities considered as contributing substantially to climate change adaptation should correspond to the scope for which appropriate 'do no significant harm' criteria could be determined. In the light of the need to increase the overall climate resilience of the economy, technical screening criteria, including relevant 'do no significant harm criteria' should in the future be developed for additional economic activities.
- (43) Technical screening criteria should ensure that the broadest possible range of critical infrastructures, including in particular energy transmission or storage infrastructure, or transport infrastructure is adapted to adverse impact of the current climate and the expected future climate, thereby preventing serious negative impacts on the health, safety, security or economic well-being of citizens or the effective functioning of governments in Member States. It might however be necessary to review those technical screening criteria to take better account of the specificities of infrastructure for defence against floods



- (44) Furthermore, technical screening criteria should also be established for education, human health, social work, arts, entertainment and recreation activities. Those activities provide essential services and solutions towards increasing collective resilience of the whole society and they can increase climate literacy and awareness.
- (45) The technical screening criteria for determining whether an economic activity qualifies as contributing substantially to climate change adaptation by including adaptation solutions in accordance with Article 11(1), point (a) of Regulation (EU) 2020/852 should aim at increasing the resilience of the economic activities against identified climate risks that are material to those activities. The technical screening criteria should require that the economic operators concerned perform a climate change risk assessment and implement adaptation solutions that reduce the most important risks identified in that assessment. The technical screening criteria should also take into account the context- and location-specific nature of adaptation needs and solutions. Furthermore, the technical screening criteria should ensure the integrity of the environmental and climate objectives and should not be disproportionately prescriptive as to the type of solutions implemented. Those technical screening criteria should take into account the need to prevent climate- and weather related disasters and manage risk of such disasters and to ensure the resilience of critical infrastructure, in accordance with relevant Union law relating to assessing the risk and mitigating the effects of such disasters.
- (46) The technical screening criteria for determining whether an economic activity qualifies as contributing substantially to climate change adaptation by providing adaptation solutions in accordance with Article 11(1), point (b) of Regulation (EU) 2020/852 should be established for engineering activities and related technical consultancy dedicated to adaptation to climate change, research, development and innovation, non-life insurance consisting in underwriting of climate-related perils, and reinsurance. Those activities have the potential to provide adaptation solutions that contribute substantially to preventing or reducing the risk of the adverse impact of the current climate and the expected future climate on people, nature, or assets, without increasing the risk of an adverse impact.
- (47) The technical screening criteria should recognise that certain economic activities may contribute substantially to climate change adaptation by providing adaptation solutions in accordance with Article 11(1), point (b), of Regulation (EU) 2020/852, or by including adaptation solutions in accordance with the Article 11(1), point (a), of that Regulation. The technical screening criteria for the forestry activities, restoration of wetlands, programming and broadcasting, as well as for education, the creative, arts and entertainment activities should recognise that possibility. Those activities, while they should be adapted to the adverse impact of the current climate and the expected future climate, also have the potential to provide adaptation solutions that contribute substantially to preventing or reducing the risk of that adverse impact on people, nature, or assets.
- (48) The technical screening criteria for determining whether an economic activity contributes substantially to climate change adaptation should ensure that the economic activity is made climate resilient or provides solutions to other activities to become climate resilient. Where an economic activity is made climate resilient, the implementation of physical and non-physical solutions that substantially reduce the most important physical climate risks that are material to that activity represents the substantial contribution of that activity towards climate change adaptation. It is therefore appropriate that only capital expenditures incurred for all steps necessary for making the activity climate resilient should be considered as the proportion of capital and operating expenditure related to assets or processes associated with economic activities that qualify as environmentally sustainable and that turnover from that economic activity that has been made resilient should not be counted as derived from products or services associated with economic activities that qualify as environmentally sustainable. However, when the core business of economic activities enabling adaptation in accordance with Article 11(1), point (b), of Regulation (EU) 2020/852 is to provide technologies, products, services, information, or practices with the objectives of increasing the level of resilience to physical climate risks of other people, nature, cultural heritage, assets or of other economic activities, in addition to capital expenditure, the turnover derived from products or services associated with those economic activities should be considered as proportion of turnover derived from products or services associated with economic activities that qualify as environmentally sustainable.

- (49) The technical screening criteria for determining whether the economic activities that contribute substantially to climate change mitigation or climate change adaptation cause no significant harm to any of the other environmental objectives should aim at ensuring that contribution to one of the environmental objectives is not made at the expense of other environmental objectives. The 'do no significant harm' criteria play therefore an essential role in ensuring the environmental integrity of the classification of environmentally sustainable activities. The 'do no significant harm' criteria for a given environmental objective should be specified for those activities that present a risk of causing significant harm to that objective. The 'do no significant harm' criteria should take into account and build upon the relevant requirements of existing Union law.
- (50) The technical screening criteria for ensuring that activities that contribute substantially to climate change adaptation do not cause significant harm to climate change mitigation should be laid down for those activities that present a risk of producing significant greenhouse gas emissions while they have the potential to contribute substantially to climate change adaptation.
- (51) Climate change is likely to affect all sectors of the economy. The technical screening criteria for ensuring that economic activities that contribute substantially to climate change mitigation do not cause significant harm to climate change adaptation should therefore apply to all of those economic activities. Those criteria should ensure that existing and future risks that are material to the activity are identified and that adaptation solutions are implemented to minimise or avoid possible losses or impacts on business continuity.
- (52) The technical screening criteria for 'do no significant harm' to sustainable use and protection of water and marine resources should be specified for all activities that can pose a risk to such sustainable use and protection. Those criteria should aim at avoiding that activities are detrimental to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters, by requiring that environmental degradation risks are identified and addressed, in accordance with a water use and protection management plan.
- (53) The technical screening criteria for 'do no significant harm' to transition to a circular economy should be tailored to the specific sectors in order to ensure that economic activities do not lead to inefficiencies in the use of resources or lock-in linear production models, that waste is avoided or reduced and, where unavoidable, managed in accordance with the waste hierarchy. Those criteria should also ensure that economic activities do not undermine the objective of transitioning to a circular economy.
- (54) The technical screening criteria for 'do no significant harm' to pollution prevention and control should reflect sector specificities to address the relevant sources and types of pollution into air, water or land, referring, where relevant, to best available techniques conclusions established under Directive 2010/75/EU of the European Parliament and of the Council<sup>(14)</sup>.
- (55) The criteria for 'do no significant harm' to protection and restoration of biodiversity and ecosystems should be specified for all activities that can pose risks to the status or condition of habitats, species or ecosystems and should require that, where relevant, environmental impact assessments or appropriate assessments are undertaken and the conclusions from such assessments are implemented. Those criteria should ensure that even in the absence of a requirement to perform an environmental impact assessment or other appropriate assessment, activities do not lead to the disturbance, capture or killing of legally protected species or the deterioration of legally protected habitats.
- (56) The technical screening criteria should be without prejudice to the requirement to comply with provisions related to the environment, health, safety and social sustainability laid down in Union and national law, and to the adoption of appropriate mitigation measures in that regard where applicable.
- (57) The provisions in this Regulation are closely linked, since they deal with criteria for determining whether an economic activity contributes substantially to climate change mitigation or climate change adaptation, and whether such economic activity causes no significant harm to one or more of the other environmental objectives laid down in Article 9 of Regulation (EU) 2020/852. In order to ensure coherence between those provisions, which should enter into force at the same time, to facilitate a comprehensive view of the legal framework for stakeholders and to facilitate the application of Regulation (EU) 2020/852, it is necessary to include those provisions in a single Regulation.

<sup>(14)</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17).

- (58) To ensure that the application of Regulation (EU) 2020/852 evolves with technological, market and policy developments, this Regulation should be regularly reviewed and, where appropriate, amended as regards the activities considered to be contributing substantially to climate change mitigation or climate change adaptation and the corresponding technical screening criteria.
- (59) In order to comply with Articles 10(6) and 11(6) of Regulation (EU) 2020/852, this Regulation should apply from 1 January 2022,

HAS ADOPTED THIS REGULATION:

*Article 1*

The technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives laid down in Article 9 of Regulation (EU) 2020/852 are set out in Annex I to this Regulation.

*Article 2*

The technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives laid down in Article 9 of Regulation (EU) 2020/852 are set out in Annex II to this Regulation.

*Article 3*

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 1 January 2022.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 4 June 2021.

*For the Commission,  
On behalf of the President,  
Mairead McGUINNESS  
Member of the Commission*

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## ANNEX I

**Technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives**

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## 1. FORESTRY

### 1.1. **Afforestation**

#### *Description of the activity*

Establishment of forest through planting, deliberate seeding or natural regeneration on land that, until then, was under a different land use or not used. Afforestation implies a transformation of land use from non-forest to forest, in accordance with the Food and Agriculture Organisation of the United Nations ('FAO') definition of afforestation <sup>(1)</sup>, where forest means a land matching the forest definition as set out in national law, or where not available, is in accordance with the FAO definition of forest <sup>(2)</sup>. Afforestation may cover past afforestation as long as it takes place in the period between the planting of the trees and the time when the land use is recognised as a forest.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

#### *Technical screening criteria*

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#### Substantial contribution to climate change mitigation

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##### 1. *Afforestation plan and subsequent forest management plan or equivalent instrument*

1.1. The area on which the activity takes place is covered by an afforestation plan of a duration of at least five years, or the minimum period prescribed in national law, developed prior to the start of the activity and continuously updated, until this area matches the definition of forest as set out in national law or where not available, is in line with the FAO definition of forest.

The afforestation plan contains all elements required by the national law relating to environmental impact assessment of afforestation.

1.2. Preferably through the afforestation plan, or if information is missing, through any other document, detailed information is provided on the following points:

- (a) description of the area according to its gazetting in the land registry;
- (b) site preparation and its impacts on pre-existing carbon stocks, including soils and above-ground biomass, in order to protect land with high carbon stock <sup>(3)</sup>;
- (c) management goals, including major constraints;
- (d) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;
- (e) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (f) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (g) measures deployed to establish and maintain the good condition of forest ecosystems;
- (h) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);

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<sup>(1)</sup> Establishment of forest through planting or deliberate seeding on land that, until then, was under a different land use, implies a transformation of land use from non-forest to forest, *FAO Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/l8661en/i8661en.pdf>).

<sup>(2)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use, *FAO Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/l8661en/i8661en.pdf>).

<sup>(3)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

- (i) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (j) assessment of impact on food security;
- (k) all DNSH criteria relevant to afforestation.

1.3. When the area becomes a forest, the afforestation plan is followed by a subsequent forest management plan or an equivalent instrument, as set out in national law or, where national law does not define a forest management plan or equivalent instrument, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(4)</sup>. The forest management plan or the equivalent instrument covers a period of 10 years or more and is continuously updated.

1.4. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:

- (a) management goals, including major constraints <sup>(5)</sup>;
- (b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;
- (c) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH criteria relevant to forest management.

1.5. The activity follows the best afforestation practices laid down in national law, or, where no such best afforestation practices have been laid down in national law, the activity complies with one of the following criteria:

- (a) the activity complies with Commission Delegated Regulation (EU) No 807/2014 <sup>(6)</sup>;
- (b) the activity follows the "Pan-European Guidelines for Afforestation and Reforestation with a special focus on the provisions of the UNFCCC" <sup>(7)</sup>.

1.6. The activity does not involve the degradation of land with high carbon stock <sup>(8)</sup>.

<sup>(4)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised,

FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(5)</sup> Including an analysis of (i) long term sustainability of the wood resource (ii) impacts/pressures on habitat conservation, diversity of associated habitats and condition of harvesting minimising soil impacts.

<sup>(6)</sup> Commission Delegated Regulation (EU) No 807/2014 of 11 March 2014 supplementing Regulation (EU) No 1305/2013 of the European Parliament and of the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and introducing transitional provisions (OJ L 227, 31.7.2014, p. 1).

<sup>(7)</sup> Forest Europe Pan-European Guidelines for Afforestation and Reforestation with a special focus on the provisions of the UNFCCC adopted by the MCPFE Expert Level Meeting on 12-13 November, 2008 and by the PEBLDS Bureau on behalf of the PEBLDS Council on 4 November, 2008 (version of 4.6.2021: [https://www.foresteuropa.org/docs/other\\_meetings/2008/Geneva/Guidelines\\_Aff\\_Ref\\_ADOPTED.pdf](https://www.foresteuropa.org/docs/other_meetings/2008/Geneva/Guidelines_Aff_Ref_ADOPTED.pdf)).

<sup>(8)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

1.7. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010 of the European Parliament and of the Council <sup>(9)</sup>.

1.8. The afforestation plan and the subsequent forest management plan or equivalent instrument provide for monitoring that ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

## 2. *Climate benefit analysis*

2.1. For areas that comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

- (a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity;
- (b) long-term climate benefits are considered demonstrated by proof of alignment with Article 29(7), point (b), of Directive (EU) 2018/2001.

2.2. For areas that do not comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

- (a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity.
- (b) the projected long-term average net GHG balance of the activity is lower than the long-term average GHG balance projected for the baseline, referred to in point 2.2, where long term corresponds to the longer duration between 100 years and the duration of an entire forest cycle.

2.3. The calculation of climate benefit complies with all of the following criteria:

- (a) the analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories <sup>(10)</sup>. The climate benefit analysis is based on transparent, accurate, consistent, complete and comparable information, covers all carbon pools impacted by the activity, including above-ground biomass, below-ground biomass, deadwood, litter and soil, relies on the most conservative assumptions for calculations and includes appropriate considerations about the risks of non-permanence and reversals of carbon sequestration, the risk of saturation and the risk of leakage.
- (b) the business as-usual practices, including harvesting practices, are ones of the following:
  - (i) the management practices as documented in the latest version of the forest management plan or equivalent instrument before the start of the activity, if any;
  - (ii) the most recent business-as-usual practices prior to the start of the activity;
  - (iii) the practices corresponding to a management system ensuring that carbon stocks and sinks levels in the forest area are maintained or strengthened over the long term as set out in Article 29(7), point (b), of Directive (EU) 2018/2001.
- (c) the resolution of the analysis is proportionate to the size of the area concerned and values specific to the area concerned are used.

<sup>(9)</sup> Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market (OJ L 295, 12.11.2010, p. 23).

<sup>(10)</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (version of 4.6.2021: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>).



- (d) emissions and removals that occur due to natural disturbances, such as pests and diseases infestations, forest fires, wind, storm damages, that impact the area and cause underperformance do not result in non-compliance with Regulation (EU) 2020/852, provided that the climate benefit analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories regarding emissions and removals due to natural disturbances.

2.4. Forest holdings under 13ha are not required to perform a climate benefit analysis.

### 3. *Guarantee of permanence*

3.1. In accordance with national law, the forest status of the area in which the activity takes place is guaranteed by one of the following measures:

- (a) the area is classified in the permanent forest estate as defined by the FAO <sup>(11)</sup>;
- (b) the area is classified as a protected area;
- (c) the area is the subject of any legal or contractual guarantee ensuring that it will remain a forest.

3.2. In accordance with national law, the operator of the activity commits that future updates to the afforestation plan and the subsequent forest management plan or equivalent instrument, beyond the activity that is financed, will continue to seek the climate benefits as determined in point 2. Besides, the operator of the activity commits to compensate any reduction in the climate benefit determined in point 2 with an equivalent climate benefit resulting from the conduct of an activity that corresponds to one of the forestry activities defined in this Regulation.

### 4. *Audit*

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:

- (a) the relevant national competent authorities;
- (b) an independent third-party certifier, at the request of national authorities or the operator of the activity.

In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.

The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.

### 5. *Group assessment*

The compliance with the criteria for substantial contribution to climate change mitigation and with DNSH criteria may be checked:

- (a) at the level of the forest sourcing area <sup>(12)</sup> as defined in Article 2, point (30), of Directive (EU) 2018/2001;
- (b) at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.

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Do no significant harm ('DNSH')

(2) Climate change adaptation

The activity complies with the criteria set out in Appendix A to this Annex.

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<sup>(11)</sup> Forest area that is designated to be retained as forest and may not be converted to other land use,

FAO *Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/i8661en/i8661en.pdf>).

<sup>(12)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (k) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The use of pesticides is reduced and alternative approaches or techniques, which may include non-chemical alternatives to pesticides, are favoured, in accordance with Directive 2009/128/EC of the European Parliament and of the Council <sup>(13)</sup>, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and of diseases.</p> <p>The activity minimises the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 of the European Parliament and of the Council <sup>(14)</sup> or national rules on fertilisers or soil improvers for agricultural use.</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(15)</sup> of the European Parliament and of the Council <sup>(16)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade <sup>(17)</sup>, the Minamata Convention on Mercury <sup>(18)</sup>, the Montreal Protocol on Substances that Deplete the Ozone Layer <sup>(19)</sup>, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard <sup>(20)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p>

<sup>(13)</sup> Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides (OJ L 309, 24.11.2009, p. 71).

<sup>(14)</sup> Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003 (OJ L 170, 25.6.2019, p. 1).

<sup>(15)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3).

<sup>(16)</sup> Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants (OJ L 169, 25.6.2019, p. 45).

<sup>(17)</sup> Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (OJ L 63, 6.3.2003, p. 29).

<sup>(18)</sup> Minamata Convention on Mercury (OJ L 142, 2.6.2017, p. 6).

<sup>(19)</sup> Montreal Protocol on Substances that Deplete the Ozone Layer (OJ L 297, 31.10.1988, p. 21).

<sup>(20)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019), (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

	<p>Detailed information referred to in points 1.2(k) (Afforestation plan) and 1.4(i) (Forest management plan or equivalent system) include provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem conditions (such as climate, soil criteria and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions.</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> <li>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</li> <li>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</li> <li>(g) ensuring the diversity of associated habitats and species linked to the forest;</li> <li>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</li> </ul>
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**1.2. Rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event**

*Description of the activity*

Rehabilitation and restoration of forests as defined by national law. Where national law does not contain such a definition, rehabilitation and restoration corresponds to a definition with broad agreement in the peer-reviewed scientific literature for specific countries or a definition in line with the FAO concept of forest restoration <sup>(21)</sup> or a

<sup>(21)</sup> Forest restoration includes:

- rehabilitation, meaning the restoration of desired species, structures or processes to an existing ecosystem;
  - reconstruction, meaning restoration of native plants on land which is in another use;
  - reclamation, meaning restoration of severely degraded land devoid of vegetation;
  - most radically replacement, in which species maladapted for a given location and unable to migrate are replaced with introduced species as climates change rapidly,
- Forest restoration module. In Sustainable Forest Management (SFM) Toolbox (version of 4.6.2021: <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-restoration/basic-knowledge/en/>).*

definition in line with one of the definitions of ecological restoration<sup>(22)</sup> applied to forest, or forest rehabilitation<sup>(23)</sup> under the Convention on Biological Diversity<sup>(24)</sup>. The economic activities in this category also include forest activities in line with the FAO definition of 'reforestation'<sup>(25)</sup> and 'naturally regenerating forest'<sup>(26)</sup> after an extreme event, where extreme event is defined by national law, and where national law does not contain such a definition, is in line with the IPCC definition of extreme weather event<sup>(27)</sup>; or after a wildfire, where wildfire is defined by national law, and where national law does not contain such a definition, as defined in the European Glossary for wildfires and forest fires<sup>(28)</sup>.

The economic activities in this category imply no change of land use and occurs on degraded land matching the forest definition as set out in national law, or where not available, in accordance with the FAO definition of forest<sup>(29)</sup>.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

<sup>(22)</sup> Ecological Restoration (Also Ecosystem Restoration):

- the process of returning an ecosystem to a natural pre-disturbance structure and function;
- the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed;
- the process of intentionally altering a site to establish a defined, indigenous ecosystem. The goal of this process is to emulate the structure, function, diversity and dynamics of the specified ecosystem;
- human intervention ... designed to accelerate the recovery of damaged habitats, or to bring ecosystems back to as close an approximation as possible of their pre-disturbance states,

*Most used definitions/descriptions of key terms related to ecosystem restoration.* 11<sup>th</sup> conference of the Parties to the Convention on Biological Diversity. 2012. UNEP/CBD/COP/11/INF/19 (version of 4.6.2021: <https://www.cbd.int/doc/meetings/cop/cop-11/information/cop-11-inf-19-en.pdf>).

<sup>(23)</sup> Forest rehabilitation is the process of restoring the capacity of a forest to provide goods and services again, where the state of the rehabilitated forest is not identical to its state before degradation,

*Most used definitions/descriptions of key terms related to ecosystem restoration.* 11<sup>th</sup> Conference of the Parties to the Convention on Biological Diversity. 2012. UNEP/CBD/COP/11/INF/19 (version of 4.6.2021: <https://www.cbd.int/doc/meetings/cop/cop-11/information/cop-11-inf-19-en.pdf>).

<sup>(24)</sup> (version of 4.6.2021: <https://www.cbd.int/convention/text/>).

<sup>(25)</sup> Re-establishment of forest through planting and/or deliberate seeding on land classified as forest,

*FAO Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(26)</sup> Forest predominantly composed of trees established through natural regeneration,

*FAO Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(27)</sup> An extreme weather event is an event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., drought or heavy rainfall over a season). See IPCC, 2018: *Annex I: Glossary* (version of 4.6.2021: <https://www.ipcc.ch/sr15/chapter/glossary/>).

<sup>(28)</sup> Any uncontrolled vegetation fire which requires a decision or action regarding suppression, 2012 European Glossary for wildfires and forest fires, developed under the European Forest Fire Network- 'EUFOFINET' project, as part of the INTERREG IVC programme (version of 4.6.2021: <https://www.ctif.org/index.php/library/european-glossary-wildfires-and-forest-fires>).

<sup>(29)</sup> Land spanning more than 0.5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. *Forest management plan or equivalent instrument*

1.1. The activity takes place on area that is subject to a forest management plan or an equivalent instrument, as set out in national law or, where national law does not define a forest management plan or equivalent instrument, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(30)</sup>.

The forest management plan or the equivalent instrument covers a period of 10 years or more, and is continuously updated.

1.2. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:

- (a) management goals, including major constraints <sup>(31)</sup>;
- (b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;
- (c) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH criteria relevant to forest management.

1.3. The sustainability of the forest management systems, as documented in the plan referred to in point 1.1, is ensured by choosing the most ambitious of the following approaches:

- (a) the forest management matches the applicable national definition of sustainable forest management;
- (b) the forest management matches the Forest Europe definition <sup>(32)</sup> of sustainable forest management, and complies with the Pan-European Operational Level Guidelines for Sustainable Forest Management <sup>(33)</sup>;

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<sup>(30)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised.

FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/i8661en/i8661en.pdf>).

<sup>(31)</sup> Including an analysis of (i) long term sustainability of the wood resource (ii) impacts/pressures on habitat conservation, diversity of associated habitats and condition of harvesting minimizing soil impacts.

<sup>(32)</sup> The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

*Resolution H1 General Guidelines for the Sustainable Management of Forests in Europe* Second Ministerial Conference on the Protection of Forests in Europe (Forest Europe), 16-17 June 1993, Helsinki/Finland (version of 4.6.2021: [https://www.foresteurope.org/docs/MC/MC\\_helsinki\\_resolutionH1.pdf](https://www.foresteurope.org/docs/MC/MC_helsinki_resolutionH1.pdf) ).

<sup>(33)</sup> Annex 2 of the Resolution L2. Pan-European Operational Level Guidelines for Sustainable Forest Management. Third Ministerial Conference on the Protection of Forests in Europe 2-4 June 1998, Lisbon/Portugal (version of 4.6.2021: [https://foresteurope.org/wp-content/uploads/2016/10/MC\\_lisbon\\_resolutionL2\\_with\\_annexes.pdf#page=18](https://foresteurope.org/wp-content/uploads/2016/10/MC_lisbon_resolutionL2_with_annexes.pdf#page=18)).



(c) the management system in place complies with the forest sustainability criteria laid down in Article 29(6) of Directive (EU) 2018/2001, and as of the date of its application with the implementing act on operational guidance for energy from forest biomass adopted under Article 29(8) of that Directive.

1.4. The activity does not involve the degradation of land with high carbon stock <sup>(34)</sup>.

1.5. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.

1.6. The forest management plan or equivalent instrument provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

## 2. *Climate benefit analysis*

2.1. For areas that comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

(a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity;

(b) long-term climate benefits are considered demonstrated by proof of alignment with Article 29(7), point (b), of Directive (EU) 2018/2001.

2.2. For areas that do not comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

(a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity.

(b) the projected long-term average net GHG balance of the activity is lower than the long-term average GHG balance projected for the baseline, referred to in point 2.2, where long term corresponds to the longer duration between 100 years and the duration of an entire forest cycle.

2.3. The calculation of climate benefit complies with all of the following criteria:

(a) the analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories <sup>(35)</sup>. The climate benefit analysis is based on transparent, accurate, consistent, complete and comparable information, covers all carbon pools impacted by the activity, including above-ground biomass, below-ground biomass, deadwood, litter and soil, relies on the most conservative assumptions for calculations and includes appropriate considerations about the risks of non-permanence and reversals of carbon sequestration, the risk of saturation and the risk of leakage.

(b) the business-as-usual practices, including harvesting practices, are one of the following:

(i) the management practices as documented in the latest version of the forest management plan or equivalent instrument before the start of the activity, if any;

<sup>(34)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

<sup>(35)</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (version of 4.6.2021: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>).

- (ii) the most recent business-as-usual practices prior to the start of the activity;
  - (iii) the practices corresponding to a management system ensuring that carbon stocks and sinks levels in the forest area are maintained or strengthened over the long term as set out in Article 29(7), point (b), of Directive (EU) 2018/2001.
- (c) the resolution of the analysis is proportionate to the size of the area concerned and values specific to the area concerned are used.
- (d) emissions and removals that occur due to natural disturbances, such as pests and diseases infestations, forest fires, wind, storm damages, that impact the area and cause underperformance do not result in non-compliance with Regulation (EU) 2020/852, provided that the climate benefit analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories regarding emissions and removals due to natural disturbances.
- 2.4. Forest holdings under 13ha are not required to perform a climate benefit analysis.

### 3. *Guarantee of permanence*

3.1. In accordance with national law, the forest status of the area in which the activity takes place is guaranteed by one of the following measures:

- (a) the area is classified in the permanent forest estate as defined by the FAO <sup>(36)</sup>;
- (b) the area is classified as a protected area;
- (c) the area is the subject of any legal or contractual guarantee ensuring that it will remain a forest.

3.2. In accordance with national law, the operator of the activity commits that future updates to the forest management plan or equivalent instrument, beyond the activity that is financed, will continue to seek the climate benefits as determined in point 2. Besides, the operator of the activity commits to compensate any reduction in the climate benefit determined in point 2 with an equivalent climate benefit resulting from the conduct of an activity that corresponds to one of the forestry activities defined in this Regulation.

### 4. *Audit*

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:

- (a) the relevant national competent authorities;
- (b) an independent third-party certifier, at the request of national authorities or the operator of the activity.

In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.

The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.

### 5. *Group assessment*

The compliance with the criteria for substantial contribution to climate change mitigation and with DNSH criteria may be checked:

- (a) at the level of the forest sourcing area <sup>(37)</sup> as defined in Article 2, point (30), of Directive (EU) 2018/2001;

<sup>(36)</sup> Forest area that is designated to be retained as forest and may not be converted to other land use,

(FAO *Global Resources Assessment 2020. Terms and definitions* version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(37)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

- (b) at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	The silvicultural change induced by the activity on the area covered by the activity is not likely to result in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood-based products with long-term circularity potential. This criterion may be demonstrated through the climate benefits analysis referred to in point (2).
(5) Pollution prevention and control	<p>The use of pesticides is reduced and alternative approaches or techniques, which may include non-chemical alternatives to pesticides, are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and of diseases.</p> <p>The activity minimises the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in the Annex I, part A, of Regulation (EU) 2019/1021 <sup>(38)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p>

<sup>(38)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3).

	<p>Detailed information referred to in point 1.2.(i) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem conditions (such as climate, soil criteria and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions.</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> <li>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</li> <li>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</li> <li>(g) ensuring the diversity of associated habitats and species linked to the forest;</li> <li>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</li> </ul>
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### 1.3. Forest management

#### *Description of the activity*

Forest management as defined by national law. Where national law does not contain such a definition, forest management corresponds to any economic activity resulting from a system applicable to a forest that influences the ecological, economic or social functions of the forest. Forest management assumes no change in land use and occurs on land matching the definition of forest as set out in national law, or where not available, in accordance with the FAO definition of forest <sup>(39)</sup>.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

<sup>(39)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

*Technical screening criteria*

## Substantial contribution to climate change mitigation

1. *Forest management plan or equivalent instrument*

1.1. The activity takes place on area that is subject to a forest management plan or an equivalent instrument, as set out in national law or, where national law does not define a forest management plan or equivalent instrument, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(40)</sup>.

The forest management plan or equivalent instrument covers a period of 10 years or more and is continuously updated.

1.2. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:

- (a) management goals, including major constraints <sup>(41)</sup>;
- (b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;
- (c) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH criteria relevant for forest management.

1.3. The sustainability of the forest management systems, as documented in the plan referred to in point 1.1, is ensured by choosing the most ambitious of the following approaches:

- (a) the forest management matches the applicable national definition of sustainable forest management;
- (b) the forest management matches the Forest Europe definition <sup>(42)</sup> of sustainable forest management, and complies with the Pan-European Operational Level Guidelines for Sustainable Forest Management <sup>(43)</sup>;

<sup>(40)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised.

FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(41)</sup> Including an analysis of (i) long term sustainability of the wood resource (ii) impacts/pressures on habitat conservation, diversity of associated habitats and condition of harvesting minimizing soil impacts.

<sup>(42)</sup> The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

*Resolution H1 General Guidelines for the Sustainable Management of Forests in Europe* Second Ministerial Conference on the Protection of Forests in Europe (Forest Europe), 16-17 June 1993, Helsinki/Finland (version of 4.6.2021: [https://www.foresteuropa.org/docs/MC/MC\\_helsinki\\_resolutionH1.pdf](https://www.foresteuropa.org/docs/MC/MC_helsinki_resolutionH1.pdf)).

<sup>(43)</sup> Annex 2 of the Resolution L2. Pan-European Operational Level Guidelines for Sustainable Forest Management. Third Ministerial Conference on the Protection of Forests in Europe 2-4 June 1998, Lisbon/Portugal (version of 4.6.2021: [https://foresteuropa.org/wp-content/uploads/2016/10/MC\\_lisbon\\_resolutionL2\\_with\\_annexes.pdf#page=18](https://foresteuropa.org/wp-content/uploads/2016/10/MC_lisbon_resolutionL2_with_annexes.pdf#page=18)).

(c) the management system in place shows compliance with the forest sustainability criteria set out in Article 29(6) of Directive (EU) 2018/2001, and as of the date of its application with the implementing act on operational guidance for energy from forest biomass adopted under Article 29(8) of that Directive.

1.4. The activity does not involve the degradation of land with high carbon stock <sup>(44)</sup>.

1.5. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.

1.6. The forest management plan or equivalent instrument provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

## 2. *Climate benefit analysis*

2.1. For areas that comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

(a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity;

(b) long-term climate benefits are considered demonstrated by proof of alignment with Article 29(7), point (b), of Directive (EU) 2018/2001.

2.2. For areas that do not comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

(a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity.

(b) the projected long-term average net GHG balance of the activity is lower than the long-term average GHG balance projected for the baseline, referred to in point 2.2, where long term corresponds to the longer duration between 100 years and the duration of an entire forest cycle.

2.3. The calculation of climate benefit complies with all of the following criteria:

(a) the analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories <sup>(45)</sup>. The climate benefit analysis is based on transparent, accurate, consistent, complete and comparable information, covers all carbon pools impacted by the activity, including above-ground biomass, below-ground biomass, deadwood, litter and soil, relies on the most conservative assumptions for calculations and includes appropriate considerations about the risks of non-permanence and reversals of carbon sequestration, the risk of saturation and the risk of leakage.

(b) the business-as-usual practices, including harvesting practices, are one of the following:

(i) the management practices as documented in the latest version of the forest management plan or equivalent instrument before the start of the activity, if any;

(ii) the most recent business-as-usual practices prior to the start of the activity;

(iii) the practices corresponding to a management system ensuring that carbon stocks and sinks levels in the forest area are maintained or strengthened over the long term as set out in Article 29(7), point (b), of Directive (EU) 2018/2001.

(c) the resolution of the analysis is proportionate to the size of the area concerned and values specific to the area concerned are used.

<sup>(44)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

<sup>(45)</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (version of 4.6.2021: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>).



- (d) emissions and removals that occur due to natural disturbances, such as pests and diseases infestations, forest fires, wind, storm damages, that impact the area and cause underperformance do not result in non-compliance with Regulation (EU) 2020/852, provided that the climate benefit analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories regarding emissions and removals due to natural disturbances.

2.4. Forest holdings under 13ha are not required to perform a climate benefit analysis.

### 3. *Guarantee of permanence*

3.1. In accordance with national law, the forest status of the area in which the activity takes place is guaranteed by one of the following measures:

- (a) the area is classified in the permanent forest estate as defined by the FAO <sup>(46)</sup>;
- (b) the area is classified as a protected area;
- (c) the area is the subject of any legal or contractual guarantee ensuring that it will remain a forest.

3.2. In accordance with national law, the operator of the activity commits that future updates to the forest management plan or equivalent instrument, beyond the activity that is financed, will continue to seek the climate benefits as determined in point 2. Besides, the operator of the activity commits to compensate any reduction in the climate benefit determined in point 2 with an equivalent climate benefit resulting from the conduct of an activity that corresponds to one of the forestry activities defined in this Regulation.

### 4. *Audit*

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity the substantial contribution to climate change mitigation criteria and the DNSH criteria is verified by either of the following:

- (a) the relevant national competent authorities;
- (b) an independent third-party certifier, at the request of national authorities or the operator of the activity.

In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.

The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.

### 5. *Group assessment*

The compliance with the criteria for substantial contribution to climate change mitigation and with DNSH criteria may be checked:

- (a) at the level of the forest sourcing area <sup>(47)</sup> as defined in Article 2, point (30), of Directive (EU) 2018/2001;
- (b) at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(46)</sup> Forest area that is designated to be retained as forest and may not be converted to other land use.

(FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(47)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>The silvicultural change induced by the activity on the area covered by the activity is not likely to result in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood-based products with long-term circularity potential. This criterion may be demonstrated through the climate benefits analysis referred to in point (2).</p>
(5) Pollution prevention and control	<p>The use of pesticides is reduced and alternative approaches or techniques, which may include non-chemical alternatives to pesticides, are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and of diseases.</p> <p>The activity minimised the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 of the European Parliament and of the Council<sup>(48)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard<sup>(49)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>Detailed information referred to in point 1.2.(i) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> </ul>

<sup>(48)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants. Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3.).

<sup>(49)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019), (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

	<p>(c) excluding the use of non-native species unless it can be demonstrated that:</p> <p>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem condition (such as climate, soil criteria, and vegetation zone, forest fire resilience);</p> <p>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions;</p> <p>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</p> <p>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</p> <p>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</p> <p>(g) ensuring the diversity of associated habitats and species linked to the forest;</p> <p>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</p>
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#### 1.4. Conservation forestry

##### *Description of the activity*

Forest management activities with the objective of preserving one or more habitats or species. Conservation forestry assumes no change in land category and occurs on land matching the forest definition as set out in national law, or where not available, in accordance with the FAO definition of forest <sup>(50)</sup>.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products, and 02.40, i.e. support services to forestry.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

#### 1. Forest management plan or equivalent instrument

1.1. The activity takes place on area that is subject to a forest management plan or an equivalent instrument, as set out in national law or, where national regulation does not define a forest management plan, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(51)</sup>.

The forest management plan or the equivalent instrument covers a period of 10 years or more and is continuously updated.

1.2. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:

- (a) management goals, including major constraints;
- (b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;

<sup>(50)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(51)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

- (c) definition of the forest habitat context, main forest tree species and those intended and their extent and distribution, in accordance to the local forest ecosystem context;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH relevant to forest management.

1.3. The forest management plan or the equivalent instrument:

- (a) shows a primary designated management objective<sup>(52)</sup> that consists in protection of soil and water<sup>(53)</sup>, conservation of biodiversity<sup>(54)</sup> or social services<sup>(55)</sup> based on the FAO definitions;
- (b) promotes biodiversity-friendly practices that enhance forests' natural processes;
- (c) includes an analysis of:
  - (i) impacts and pressures on habitat conservation and diversity of associated habitats;
  - (ii) condition of harvesting minimizing soil impacts;
  - (iii) other activities that have an impact on conservation objectives, such as hunting and fishing, agricultural, pastoral and forestry activities, industrial, mining, and commercial activities.

1.4. The sustainability of the forest management systems as documented in the plan referred to in point 1.1 is ensured by choosing the most ambitious of the following approaches:

- (a) the forest management matches the national definition of sustainable forest management, if any;
- (b) the forest management matches the Forest Europe definition<sup>(56)</sup> of sustainable forest management and complies with the Pan-European Operational Level Guidelines for Sustainable Forest Management<sup>(57)</sup>;

<sup>(52)</sup> The primary designated management objective assigned to a management unit (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(53)</sup> Forest where the management objective is protection of soil and water. (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(54)</sup> Forest where the management objective is conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas. (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(55)</sup> Forest where the management objective is social services. (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(56)</sup> The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

*Resolution H1 General Guidelines for the Sustainable Management of Forests in Europe* Second Ministerial Conference on the Protection of Forests in Europe (Forest Europe), 16-17 June 1993, Helsinki/Finland (version of 4.6.2021: [https://www.foresteuropa.org/docs/MC/MC\\_helsinki\\_resolutionH1.pdf](https://www.foresteuropa.org/docs/MC/MC_helsinki_resolutionH1.pdf))

<sup>(57)</sup> Annex 2 of the Resolution L2. Pan-European Operational Level Guidelines for Sustainable Forest Management. Third Ministerial Conference on the Protection of Forests in Europe 2-4 June 1998, Lisbon/Portugal (version of 4.6.2021: [https://foresteuropa.org/wp-content/uploads/2016/10/MC\\_lisbon\\_resolutionL2\\_with\\_annexes.pdf#page=18](https://foresteuropa.org/wp-content/uploads/2016/10/MC_lisbon_resolutionL2_with_annexes.pdf#page=18)).

(c) the management system in place shows compliance with the forest sustainability criteria as defined in Article 29(6) of Directive (EU) 2018/2001, and as of the date of its application with the implementing act on operational guidance for energy from forest biomass adopted under Article 29(8) of that Directive.

1.5. The activity does not involve the degradation of land with high carbon stock <sup>(58)</sup>.

1.6. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.

1.7. The forest management plan or equivalent instrument provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

## 2. *Climate benefit analysis*

2.1. For areas that comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

- (a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity;
- (b) long-term climate benefits are considered demonstrated by proof of alignment with Article 29(7), point (b), of Directive (EU) 2018/2001.

2.2. For areas that do not comply with the requirements at forest sourcing area level to ensure that carbon stocks and sinks levels in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

- (a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity.
- (b) the projected long-term average net GHG balance of the activity is lower than the long-term average GHG balance projected for the baseline, referred to in point 2.2, where long term corresponds to the longer duration between 100 years and the duration of an entire forest cycle.

2.3. The calculation of climate benefit complies with all of the following criteria:

- (a) the analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories <sup>(59)</sup>. The climate benefit analysis is based on transparent, accurate, consistent, complete and comparable information, covers all carbon pools impacted by the activity, including above-ground biomass, below-ground biomass, deadwood, litter and soil, relies on the most conservative assumptions for calculations and includes appropriate considerations about the risks of non-permanence and reversals of carbon sequestration, the risk of saturation and the risk of leakage.
- (b) the business as-usual practices, including harvesting practices, are one of the following:
  - (i) the management practices as documented in the latest version of the forest management plan or equivalent instrument before the start of the activity, if any;
  - (ii) the most recent business-as-usual practices prior to the start of the activity;
  - (iii) the practices corresponding to a management system ensuring that carbon stocks and sinks levels in the forest area are maintained or strengthened over the long term as set out in Article 29(7), point (b), of Directive (EU) 2018/2001.

<sup>(58)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

<sup>(59)</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (version of 4.6.2021: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>).

- (c) the resolution of the analysis is proportionate to the size of the area concerned and values specific to the area concerned are used.
  - (d) emissions and removals that occur due to natural disturbances, such as pests and diseases infestations, forest fires, wind, storm damages, that impact the area and cause underperformance do not result in non-compliance with the criteria of Regulation (EU) 2020/852, provided that the climate benefit analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories regarding emissions and removals due to natural disturbances.
- 2.4. Forest holdings under 13ha are not required to perform a climate benefit analysis.

### 3. *Guarantee of permanence*

3.1. In accordance with national law, the forest status of the area in which the activity takes place is guaranteed by one of the following measures:

- (a) the area is classified in the permanent forest estate as defined by the FAO <sup>(60)</sup>;
- (b) the area is classified as a protected area;
- (c) the area is the subject of any legal or contractual guarantee ensuring that it will remain a forest.

3.2. In accordance with national law, the operator of the activity commits that future updates to the forest management plan or equivalent instrument, beyond the activity that is financed, will continue to seek the climate benefits as determined in point 2. Besides, the operator of the activity commits to compensate any reduction in the climate benefit determined in point 2 with an equivalent climate benefit resulting from the conduct of an activity that corresponds to one of the forestry activities defined in this Regulation.

### 4. *Audit*

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:

- (a) the relevant national competent authorities;
- (b) an independent third-party certifier, at the request of national authorities or the operator of the activity.

In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.

The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.

### 5. *Group assessment*

The compliance with the criteria for substantial contribution to climate change mitigation and with DNSH criteria may be checked:

- (a) at the level of the forest sourcing area <sup>(61)</sup> as defined in Article 2, point (30), of Directive (EU) 2018/2001;
- (b) at the level of a group of forest holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.

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Do no significant harm ('DNSH')

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(60)</sup> Forest area that is designated to be retained as forest and may not be converted to other land use.

(FAO *Global Resources Assessment 2020. Terms and definitions* version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(61)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.



(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2.(i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>The silvicultural change induced by the activity on the area covered by the activity is not likely to result in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood-based products with long-term circularity potential. This criterion may be demonstrated through the climate benefits analysis referred to in point (2).</p>
(5) Pollution prevention and control	<p>The activity does not use pesticides or fertilisers.</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(62)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard <sup>(63)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>Detailed information referred to in in point 1.2.(i) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem conditions (such as climate, soil criteria, and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions;</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> </ul>

<sup>(62)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3.).

<sup>(63)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019), (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

	<p>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</p> <p>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</p> <p>(g) ensuring the diversity of associated habitats and species linked to the forest;</p> <p>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</p>
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## 2. ENVIRONMENTAL PROTECTION AND RESTORATION ACTIVITIES

### 2.1. Restoration of wetlands

#### *Description of the activity*

Restoration of wetlands refers to economic activities that promote a return to original conditions of wetlands and economic activities that improve wetland functions without necessarily promoting a return to pre-disturbance conditions, with wetlands meaning land matching the international definition of wetland<sup>(64)</sup> or of peatland<sup>(65)</sup> as set out in the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)<sup>(66)</sup>. The concerned area matches the Union definition of wetlands, as provided in the Commission Communication on the wise use and conservation of wetlands<sup>(67)</sup>.

The economic activities in this category have no dedicated NACE code as referred to in the statistical classification of economic activities established by Regulation (EC) No 1893/2006, but relate to class 6 of the statistical classification of environmental protection activities (CEPA) established by Regulation (EU) No 691/2011 of the European Parliament and of the Council<sup>(68)</sup>.

#### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

##### 1. Restoration plan

1.1. The area is covered by a restoration plan, which is consistent with the Ramsar Convention's principles and guidelines on wetland restoration<sup>(69)</sup>, until the area is classified as a wetland and is covered by a wetland management plan, consistent with the Ramsar Convention's guidelines for management planning for Ramsar sites and other wetlands<sup>(70)</sup>. For peatlands, the restoration plan follows the recommendations contained in relevant resolutions of the Ramsar Convention, including the resolution XIII/13.

<sup>(64)</sup> Wetlands include a wide variety of inland habitats such as marshes, wet grasslands and peatlands, floodplains, rivers and lakes, and coastal areas such as saltmarshes, mangroves, intertidal mudflats and seagrass beds, and coral reefs and other marine areas no deeper than six meters at low tide, as well as human-made wetlands such as dams, reservoirs, rice paddies and waste water treatment ponds and lagoons. An Introduction to the Ramsar Convention on Wetlands, 7th ed. (previously The Ramsar Convention Manual). Ramsar Convention Secretariat, Gland, Switzerland.

<sup>(65)</sup> Peatlands are ecosystems with a peat soil. Peat consists of at least 30 % dead, partially decomposed plant remains that have accumulated in situ under waterlogged and often acidic conditions. Resolution XIII.12 *Guidance on identifying peatlands as Wetlands of International Importance (Ramsar Sites) for global climate change regulation as an additional argument to existing Ramsar criteria*, Ramsar convention adopted on 21- 29 October 2018.

<sup>(66)</sup> The Convention on Wetlands of International Importance especially as Waterfowl Habitat (version of 4.6.2021: [https://www.ramsar.org/sites/default/files/documents/library/current\\_convention\\_text\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf)).

<sup>(67)</sup> Communication from the Commission to the Council and the European Parliament of 29 May 1995 on wise use and conservation of wetlands, COM(95) 189 final.

<sup>(68)</sup> Regulation (EU) No 691/2011 of the European Parliament and of the Council of 6 July 2011 on European environmental economic accounts (OJ L 192, 22.7.2011, p. 1).

<sup>(69)</sup> Ramsar Convention (2002) Principles and guidelines for wetland restoration. Adopted by Resolution VIII.16 (2002) of the Ramsar Convention (version of 4.6.2021: <https://www.ramsar.org/sites/default/files/documents/pdf/guide/guide-restoration.pdf>).

<sup>(70)</sup> Ramsar Convention (2002) Resolution VIII.14 New Guidelines for management planning for Ramsar sites and other wetlands (version of 4.6.2021: [https://www.ramsar.org/sites/default/files/documents/pdf/res/key\\_res\\_viii\\_14\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/pdf/res/key_res_viii_14_e.pdf)).

1.2. The restoration plan contains careful consideration of local hydrological and pedological conditions, including the dynamics of soil saturation and the change of aerobic and anaerobic conditions.

1.3. All wetland management relevant DNSH criteria are addressed in the restoration plan.

1.4. The restoration plan provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

## 2. *Climate benefit analysis*

2.1. The activity complies with the following criteria:

- (a) the climate benefit analysis demonstrates that the net balance of GHG emissions and removals generated by the activity over a period of 30 years after the beginning of the activity is lower than a baseline, corresponding to the balance of GHG emissions and removals over a period of 30 years starting at the beginning of the activity, associated to the business-as-usual practices that would have occurred on the involved area in the absence of the activity;
- (b) the projected long-term average net GHG balance of the activity is lower than the long-term average GHG balance projected for the baseline, referred to in point 2.2, where long term corresponds to 100 years.

2.2. The calculation of climate benefit complies with all of the following criteria:

- (a) the analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories <sup>(71)</sup>. In particular, if the wetland definition used in that analysis differs from the wetland definition used in the national GHG inventory, the analysis includes an identification of the different land categories covered by the involved area. The climate benefit analysis is based on transparent, accurate, consistent, complete and comparable information, covers all carbon pools impacted by the activity, including above-ground biomass, below-ground biomass, deadwood, litter and soil, relies on the most conservative assumptions for calculations and includes appropriate considerations about the risks of non-permanence and reversals of carbon sequestration, the risk of saturation and the risk of leakage. For coastal wetlands, climate benefit analysis considers projections of expected relative sea level rise and the potential that the wetlands will migrate;
- (b) the business-as-usual practices, including harvesting practices, are one of the following:
  - (i) the management practices as documented before the start of the activity, if any;
  - (ii) the most recent business-as-usual practices prior to the start of the activity.
- (c) the resolution of the analysis is proportionate to the size of the area concerned and values specific to the area concerned are used;
- (d) emissions and removals that occur due to natural disturbances, such as pests and diseases infestations, fires, wind, storm damages, that impact the area and cause underperformance do not result in non-compliance with the criteria of Regulation (EU) 2020/852, provided that the climate benefit analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories regarding emissions and removals due to natural disturbances.

## 4. *Guarantee of permanence*

4.1. In accordance with national law, the wetland status of the area in which the activity takes place is guaranteed by one of the following measures:

- (a) the area is designated to be retained as wetland and may not be converted to other land use;
- (b) the area is classified as a protected area;
- (c) the area is the subject of any legal or contractual guarantee ensuring that it will remain a wetland.

<sup>(71)</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (version of 4.6.2021: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>).

4.2. In accordance with the national law, the operator of the activity commits that future updates to the restoration plan, beyond the activity that is financed, will continue to seek the climate benefits as determined in point 2. Besides, the operator of the activity commits to compensate any reduction in the climate benefit determined in point 2 with an equivalent climate benefit resulting from the conduct of an activity that corresponds to one of the environmental protection and restoration activities defined in this Regulation.

#### 5. *Audit*

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and with the DNSH criteria are verified by either of the following:

- (a) the relevant national competent authorities;
- (b) an independent third-party certifier, at the request of national authorities or the operator of the activity.

In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.

The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.

#### 6. *Group assessment*

The compliance with the criteria for substantial contribution to climate change mitigation and with DNSH criteria may be checked at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Peat extraction is minimised.
(5) Pollution prevention and control	<p>The use of pesticides is minimised and alternative approaches or techniques, which may include non-chemical alternatives to pesticides are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and diseases.</p> <p>The activity minimises the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p>

<sup>(71)</sup> 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (version of 4.6.2021: <https://www.ipcc-nggip.iges.or.jp/public/2019rf/>).

	<p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(72)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO recommended Classification of Pesticides by Hazard <sup>(73)</sup>. The activity complies with the relevant national implementing law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>The plan referred to in point 1 (Restoration plan) of this Section includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <p>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</p> <p>(b) excluding the use or release of invasive species.</p>

### 3. MANUFACTURING

#### 3.1. Manufacture of renewable energy technologies

##### *Description of the activity*

Manufacture of renewable energy technologies, where renewable energy is defined in Article 2(1) of Directive (EU) 2018/2001.

The economic activities in this category could be associated with several NACE codes, in particular C25, C27, C28 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

The economic activity manufactures renewable energy technologies.

Do no significant harm ('DNSH')

(2) Climate change adaptation

The activity complies with the criteria set out in Appendix A to this Annex.

<sup>(72)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3).

<sup>(73)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019), (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and re-used components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the lifecycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.2. Manufacture of equipment for the production and use of hydrogen

#### *Description of the activity*

Manufacture of equipment for the production and use of hydrogen.

The economic activities in this category could be associated with several NACE codes, in particular C25, C27, C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The economic activity manufactures equipment for the production of hydrogen compliant with the Technical Screening Criteria set out in Section 3.10 of this Annex and equipment for the use of hydrogen.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.

<sup>(72)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3).



(4) Transition to a circular economy	<p>The activity assesses the availability of and, where feasible, adopts techniques that support:</p> <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and re-used components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.3. Manufacture of low carbon technologies for transport

#### *Description of the activity*

Manufacture, repair, maintenance, retrofitting, repurposing and upgrade of low carbon transport vehicles, rolling stock and vessels.

The economic activities in this category could be associated with several NACE codes, in particular C29.1, C30.1, C30.2, C30.9, C33.15, C33.17 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The economic activity manufactures, repairs, maintains, retrofits<sup>(74)</sup>, repurposes or upgrades:

- (a) trains, passenger coaches and wagons that have zero direct (tailpipe) CO<sub>2</sub> emissions;
- (b) trains, passenger coaches and wagons that have zero direct tailpipe CO<sub>2</sub> emission when operated on a track with necessary infrastructure, and use a conventional engine where such infrastructure is not available (bimode);
- (c) urban, suburban and road passenger transport devices, where the direct (tailpipe) CO<sub>2</sub> emissions of the vehicles are zero;

<sup>(74)</sup> For points (j) to (m), the criteria related to retrofitting are covered in Sections 6.9 and 6.12 of this Annex.

- (d) until 31 December 2025, vehicles designated as categories M2 and M3 <sup>(75)</sup> that have a type of bodywork classified as 'CA' (single-deck vehicle), 'CB' (double-deck vehicle), 'CC' (single-deck articulated vehicle) or 'CD' (double-deck articulated vehicle) <sup>(76)</sup>, and comply with the latest EURO VI standard, i.e. both with the requirements of Regulation (EC) No 595/2009 of the European Parliament and of the Council <sup>(77)</sup> and, from the time of the entry into force of amendments to that Regulation, in those amending acts, even before they become applicable, and with the latest step of the Euro VI standard set out in Table 1 of Appendix 9 to Annex I to Commission Regulation (EU) No 582/2011 <sup>(78)</sup> where the provisions governing that step have entered into force but have not yet become applicable for this type of vehicle <sup>(79)</sup>. Where such standard is not available, the direct CO<sub>2</sub> emissions of the vehicles are zero;
- (e) personal mobility devices with a propulsion that comes from the physical activity of the user, from a zero-emissions motor, or a mix of zero-emissions motor and physical activity;
- (f) vehicles of category M<sub>1</sub> and N<sub>1</sub> classified as light-duty vehicles <sup>(80)</sup> with:
- (i) until 31 December 2025: specific emissions of CO<sub>2</sub>, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631 of the European Parliament and of the Council <sup>(81)</sup>, lower than 50 g CO<sub>2</sub>/km (low- and zero-emission light-duty vehicles);
- (ii) from 1 January 2026: specific emissions of CO<sub>2</sub>, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, are zero;
- (g) vehicles of category L <sup>(82)</sup> with tailpipe CO<sub>2</sub> emissions equal to 0 g CO<sub>2</sub>e/km calculated in accordance with the emission test laid down in Regulation (EU) 168/2013 of the European Parliament and of the Council <sup>(83)</sup>;
- (h) vehicles of categories N2 and N3, and N1 classified as heavy-duty vehicles, not dedicated to transporting fossil fuels with a technically permissible maximum laden mass not exceeding 7,5 tonnes that are 'zero-emission heavy-duty vehicles' as defined in Article 3, point (11), of Regulation (EU) 2019/1242 of the European Parliament and of the Council <sup>(84)</sup>;
- (i) vehicles of categories N2 and N3 not dedicated to transporting fossil fuels with a technically permissible maximum laden mass exceeding 7,5 tonnes that are zero-emission heavy-duty vehicles', as defined in Article 3, point (11), of Regulation (EU) 2019/1242 or 'low-emission heavy-duty vehicles' as defined in Article 3, point (12) of that Regulation;

<sup>(75)</sup> As referred to in Article 4(1), point (a), of Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC (OJ L 151, 14.06.2018, p. 1).

<sup>(76)</sup> As set out in point 3 of part C of Annex I to Regulation (EU) 2018/858.

<sup>(77)</sup> Regulation (EC) No 595/2009 of the European Parliament and of the Council of 18 June 2009 on type-approval of motor vehicles and engines with respect to emissions from heavy duty vehicles (Euro VI) and on access to vehicle repair and maintenance information and amending Regulation (EC) No 715/2007 and Directive 2007/46/EC and repealing Directives 80/1269/EEC, 2005/55/EC and 2005/78/EC (OJ L 188, 18.7.2009, p. 1).

<sup>(78)</sup> Commission Regulation (EU) No 582/2011 of 25 May 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI) and amending Annexes I and III to Directive 2007/46/EC of the European Parliament and of the Council (OJ L 167, 25.6.2011, p. 1).

<sup>(79)</sup> Until 31/12/2022, the EURO VI, step E as set out in Regulation (EC) No 595/2009.

<sup>(80)</sup> As defined in Article 4(1), points (a) and (b) of Regulation (EU) 2018/858.

<sup>(81)</sup> Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO<sub>2</sub> emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011 (OJ L 111, 25.4.2019, p. 13).

<sup>(82)</sup> As defined in Article 4 of Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles (OJ L 60, 23.2013, p. 52).

<sup>(83)</sup> Regulation (EU) No 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval and market surveillance of two- or three-wheel vehicles and quadricycles (OJ L 60, 23.2013, p. 52).

<sup>(84)</sup> Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (OJ L 198, 25.7.2019, p. 202).

- (j) inland passenger water transport vessels that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (ii) until 31 December 2025, are hybrid and dual fuel vessels using at least 50 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation;
- (k) inland freight water transport vessels, not dedicated to transporting fossil fuels, that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emission;
  - (ii) until 31 December 2025, have direct (tailpipe) emissions of CO<sub>2</sub> per tonne kilometre (g CO<sub>2</sub>/tkm), calculated (or estimated in case of new vessels) using the Energy Efficiency Operational Indicator<sup>(85)</sup>, 50 % lower than the average reference value for emissions of CO<sub>2</sub> defined for heavy duty vehicles (vehicle subgroup 5-LH) in accordance with Article 11 of Regulation (EU) 2019/1242;
- (l) sea and coastal freight water transport vessels, vessels for port operations and auxiliary activities, that are not dedicated to transporting fossil fuels, that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (ii) until 31 December 2025, are hybrid and dual fuel vessels that derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;
  - (iii) until 31 December 2025, and only where it can be proved that the vessels are used exclusively for operating coastal and short sea services designed to enable modal shift of freight currently transported by land to sea, the vessels that have direct (tailpipe) CO<sub>2</sub> emissions, calculated using the International Maritime Organization (IMO) Energy Efficiency Design Index (EEDI)<sup>(86)</sup>, 50 % lower than the average reference CO<sub>2</sub> emissions value defined for heavy duty vehicles (vehicle subgroup 5-LH) in accordance with Article 11 of Regulation (EU) 2019/1242;
  - (iv) until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022<sup>(87)</sup> if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from renewable sources<sup>(88)</sup>;
- (m) sea and coastal passenger water transport vessels, not dedicated to transporting fossil fuels, that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (ii) until 31 December 2025, hybrid and dual fuel vessels derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;
  - (iii) until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022 if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from renewable sources<sup>(89)</sup>.

<sup>(85)</sup> The Energy Efficiency Operational Indicator is defined as the ratio of mass of CO<sub>2</sub> emitted per unit of transport work. It is a representative value of the energy efficiency of the ship operation over a consistent period which represents the overall trading pattern of the vessel. Guidance on how to calculate this indicator is provided in the document MEPC.1/Circ. 684 from IMO.

<sup>(86)</sup> Energy Efficiency Design Index (version of 4.6.2021: <http://www.imo.org/fr/MediaCentre/HotTopics/GHG/Pages/EEDI.aspx>).

<sup>(87)</sup> EEDI requirements applicable on 1 April 2022 as agreed by the Marine Environment Protection Committee of the International Maritime Organization on its seventy fourth session.

<sup>(88)</sup> Fuels that meet the technical screening criteria specified in Sections 3.10 and 4.13 of this Annex.

<sup>(89)</sup> Fuels that meet the technical screening criteria specified in Sections 3.10 and 4.13 of this Annex.

Do no significant harm ('DNSH')	
(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and re-used components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Where applicable, vehicles do not contain lead, mercury, hexavalent chromium and cadmium, in accordance with Directive 2000/53/EC of the European Parliament and of the Council <sup>(90)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.4. Manufacture of batteries

#### *Description of the activity*

Manufacture of rechargeable batteries, battery packs and accumulators for transport, stationary and off-grid energy storage and other industrial applications. Manufacture of respective components (battery active materials, battery cells, casings and electronic components).

Recycling of end-of-life batteries.

The economic activities in this category could be associated with NACE code C27.2 and E38.32 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The economic activity manufactures rechargeable batteries, battery packs and accumulators (and their respective components), including from secondary raw materials, that result in substantial GHG emission reductions in transport, stationary and off-grid energy storage and other industrial applications.

<sup>(90)</sup> Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles (OJ L 269, 21.10.2000, p. 34).

The economic activity recycles end-of-life batteries.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>For manufacturing of new batteries, components and materials, the activity assesses the availability of and, where feasible, adopts techniques that support:</p> <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul> <p>Recycling processes meet the conditions set out in Article 12 of Directive 2006/66/EC of the European Parliament and of the Council <sup>(91)</sup> and in Annex III, Part B, to that Directive, including the use of the latest relevant Best Available Techniques, the achievement of the efficiencies specified for lead-acid batteries, nickel-cadmium batteries and for other chemistries. These processes ensure the recycling of the metal content to the highest degree that is technically feasible while avoiding excessive costs.</p> <p>Where applicable, facilities carrying out recycling processes meet the requirements laid down in Directive 2010/75/EU of the European Parliament and of the Council <sup>(92)</sup>.</p>
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Batteries comply with the applicable sustainability rules on the placing on the market of batteries in the Union, including restrictions on the use of hazardous substances in batteries, including Regulation (EC) No 1907/2006 of the European Parliament and of the Council <sup>(93)</sup> and Directive 2006/66/EC.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.5. Manufacture of energy efficiency equipment for buildings

*Description of the activity*

Manufacture of energy efficiency equipment for buildings.

<sup>(91)</sup> Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (OJ L 266, 26.9.2006, p. 1).

<sup>(92)</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17)

<sup>(93)</sup> Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1).

The economic activities in this category could be associated with several NACE codes, in particular C16.23, C23.11, C23.20, C23.31, C23.32, C23.43, C23.61, C25.11, C25.12, C25.21, C25.29, C25.93, C27.31, C27.32, C27.33, C27.40, C27.51, C28.11, C28.12, C28.13, C28.14, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### Technical screening criteria

##### Substantial contribution to climate change mitigation

The economic activity manufactures one or more of the following products and their key components <sup>(94)</sup>:

- (a) windows with U-value lower or equal to 1,0 W/m<sup>2</sup>K;
- (b) doors with U-value lower or equal to 1,2 W/m<sup>2</sup>K;
- (c) external wall systems with U-value lower or equal to 0,5 W/m<sup>2</sup>K;
- (d) roofing systems with U-value lower or equal to 0,3 W/m<sup>2</sup>K;
- (e) insulating products with a lambda value lower or equal to 0,06 W/mK;
- (f) household appliances falling into the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 of the European Parliament and of the Council <sup>(95)</sup> and delegated acts adopted under that Regulation;
- (g) light sources rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;
- (h) space heating and domestic hot water systems rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;
- (i) cooling and ventilation systems rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;
- (j) presence and daylight controls for lighting systems;
- (k) heat pumps compliant with the technical screening criteria set out in Section 4.16 of this Annex;
- (l) façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation;
- (m) energy-efficient building automation and control systems for residential and non-residential buildings;
- (n) zoned thermostats and devices for the smart monitoring of the main electricity loads or heat loads for buildings, and sensing equipment;
- (o) products for heat metering and thermostatic controls for individual homes connected to district heating systems, for individual flats connected to central heating systems serving a whole building, and for central heating systems;
- (p) district heating exchangers and substations compliant with the district heating/cooling distribution activity set out in Section 4.15 of this Annex;
- (q) products for smart monitoring and regulating of heating system, and sensing equipment.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(94)</sup> Where relevant, the U-value is calculated according to the applicable standards, e.g. EN ISO 10077-1:2017 (windows and doors), EN ISO 12631:2017 (curtain walls) and EN ISO 6946:2017 (other building components and elements).

<sup>(95)</sup> Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU (OJ L 198, 28.7.2017, p. 1).



(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.6. Manufacture of other low carbon technologies

#### *Description of the activity*

Manufacture of technologies aimed at substantial GHG emission reductions in other sectors of the economy, where those technologies are not covered in Sections 3.1 to 3.5 of this Annex.

The economic activities in this category could be associated with several NACE codes, in particular from C22, C25, C26, C27 and C28 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The economic activity manufactures technologies that are aimed at and demonstrate substantial life-cycle GHG emission savings compared to the best performing alternative technology/product/solution available on the market.

Life-cycle GHG emission savings are calculated using Commission Recommendation 2013/179/EU<sup>(96)</sup> or, alternatively, ISO 14067:2018<sup>(97)</sup> or ISO 14064-1:2018<sup>(98)</sup>.

Quantified life-cycle GHG emission savings are verified by an independent third party.

<sup>(96)</sup> Commission Recommendation 2013/179/EU of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (OJ L 124, 4.5.2013, p. 1).

<sup>(97)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(98)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

Do no significant harm ('DNSH')	
(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.7. Manufacture of cement

#### *Description of the activity*

Manufacture of cement clinker, cement or alternative binder.

The economic activities in this category could be associated with NACE code C23.51 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity manufactures one of the following:

- (a) grey cement clinker where the specific GHG emissions<sup>(99)</sup> are lower than 0,722<sup>(100)</sup> tCO<sub>2</sub>e per tonne of grey cement clinker;

<sup>(99)</sup> Calculated in accordance with Commission Delegated Regulation (EU) 2019/331 of 19 December 2018 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council (OJ L 59, 27.2.2019, p. 8).

<sup>(100)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Commission Implementing Regulation (EU) 2021/447 of 12 March 2021 determining revised benchmark values for free allocation of emission allowances for the period from 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC of the European Parliament and of the Council, (OJ L 87, 15.3.2021, p. 29).

- (b) cement from grey clinker or alternative hydraulic binder, where the specific GHG emissions<sup>(101)</sup> from the clinker and cement or alternative binder production are lower than 0,469<sup>(102)</sup> tCO<sub>2</sub>e per tonne of cement or alternative binder manufactured.

Where CO<sub>2</sub> that would otherwise be emitted from the manufacturing process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for the production of cement, lime and magnesium oxide <sup>(103)</sup> .  No significant cross-media effects occur <sup>(104)</sup> .  For manufacture of cement employing hazardous wastes as alternative fuels, measures are in place to ensure the safe handling of waste.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.8. Manufacture of aluminium

*Description of the activity*

Manufacture of aluminium through primary alumina (bauxite) process or secondary aluminium recycling.

The economic activities in this category could be associated with NACE code C24.42, C24.53 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

<sup>(101)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(102)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) for grey cement clinker as set out in the Annex to the Implementing Regulation (EU) 2021/447, multiplied by the clinker to cement ratio of 0,65.

<sup>(103)</sup> Commission Implementing Decision 2013/163/EU of 26 March 2013 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the production of cement, lime and magnesium oxide (OJ L 100, 9.4.2013, p. 1).

<sup>(104)</sup> See Best Available Techniques Reference Document (BREF) on Economics and Cross-Media Effects (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/ecm\\_bref\\_0706.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/ecm_bref_0706.pdf)).

*Technical screening criteria*


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Substantial contribution to climate change mitigation

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The activity manufactures one of the following:

- (a) primary aluminium where the economic activity complies with two of the following criteria until 2025 and with all of the following criteria <sup>(105)</sup> after 2025:
- (i) the GHG emissions <sup>(106)</sup> do not exceed 1,484 <sup>(107)</sup> tCO<sub>2</sub>e per ton of aluminium manufactured <sup>(108)</sup>;
  - (ii) the average carbon intensity for the indirect GHG emissions <sup>(109)</sup> does not exceed 100 g CO<sub>2</sub>e/kWh;
  - (iii) the electricity consumption for the manufacturing process does not exceed 15,5 MWh/t Al.
- (b) secondary aluminium.
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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for the non-ferrous metals industries <sup>(110)</sup> . No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.9. Manufacture of iron and steel

#### *Description of the activity*

Manufacture of iron and steel.

<sup>(105)</sup> Combined to a single threshold resulting in the sum of direct and indirect emissions, calculated as the average value of the top 10 % of installations based on the data collected in the context of establishing the EU ETS industrial benchmarks for the period of 2021-2026 and calculated in accordance with the methodology for setting the benchmarks set out in Directive 2003/87/EC plus the substantial contribution to climate change mitigation criterion for electricity generation (100 g CO<sub>2</sub>e/kWh) multiplied by the average energy efficiency of aluminium manufacturing (15,5 MWh/t Al).

<sup>(106)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(107)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(108)</sup> The aluminium manufactured is the unwrought non alloy liquid aluminium produced from electrolysis.

<sup>(109)</sup> Indirect greenhouse gas emissions are the life-cycle greenhouse gas emissions produced from the generation of the electricity used for the manufacturing of primary aluminium.

<sup>(110)</sup> Commission Implementing Decision (EU) 2016/1032 of 13 June 2016 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the non-ferrous metals industries (OJ L 174, 30.6.2016, p. 32).

The economic activities in this category could be associated with several NACE codes, in particular C24.10, C24.20, C24.31, C24.32, C24.33, C24.34, C24.51 and C24.52 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### Technical screening criteria

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#### Substantial contribution to climate change mitigation

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The activity manufactures one of the following:

- (a) iron and steel where GHG emissions<sup>(111)</sup>, reduced by the amount of emissions assigned to the production of waste gases in accordance with point 10.1.5(a) of Annex VII to Regulation (EU) 2019/331 do not exceed the following values applied to the different manufacturing process steps:
- (i) hot metal = 1,331<sup>(112)</sup> tCO<sub>2</sub>e/t product;
  - (ii) sintered ore = 0,163<sup>(113)</sup> tCO<sub>2</sub>e/t product;
  - (iii) coke (excluding lignite coke) = 0,144<sup>(114)</sup> tCO<sub>2</sub>e/t product;
  - (iv) iron casting = 0,299<sup>(115)</sup> tCO<sub>2</sub>e/t product;
  - (v) electric Arc Furnace (EAF) high alloy steel = 0,266<sup>(116)</sup> tCO<sub>2</sub>e/t product;
  - (vi) electric Arc Furnace (EAF) carbon steel = 0,209<sup>(117)</sup> tCO<sub>2</sub>e/t product.
- (b) steel in electric arc furnaces (EAFs) producing EAF carbon steel or EAF high alloy steel, as defined in Commission Delegated Regulation (EU) 2019/331 and where the steel scrap input relative to product output is not lower than:
- (i) 70 % for the production of high alloy steel;
  - (ii) 90 % for the production of carbon steel.

Where the CO<sub>2</sub> that would otherwise be emitted from the manufacturing process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

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#### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(111)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(112)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(113)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(114)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(115)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(116)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(117)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for iron and steel production <sup>(118)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.10. Manufacture of hydrogen

#### *Description of the activity*

Manufacture of hydrogen and hydrogen-based synthetic fuels.

The economic activities in this category could be associated with NACE code C20.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity complies with the life-cycle GHG emissions savings requirement of 73,4 % for hydrogen [resulting in life-cycle GHG emissions lower than 3tCO<sub>2</sub>e/tH<sub>2</sub>] and 70 % for hydrogen-based synthetic fuels relative to a fossil fuel comparator of 94 g CO<sub>2</sub>e/MJ in analogy to the approach set out in Article 25(2) of and Annex V to Directive (EU) 2018/2001.

Life-cycle GHG emissions savings are calculated using the methodology referred to in Article 28(5) of Directive (EU) 2018/2001 or, alternatively, using ISO 14067:2018 <sup>(119)</sup> or ISO 14064-1:2018 <sup>(120)</sup>.

Quantified life-cycle GHG emission savings are verified in line with Article 30 of Directive (EU) 2018/2001 where applicable, or by an independent third party.

Where the CO<sub>2</sub> that would otherwise be emitted from the manufacturing process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12, respectively, of this Annex.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	<p>The activity complies with the criteria set out in Appendix A to this Annex.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>N/A</p>

<sup>(118)</sup> Commission Implementing Decision 2012/135/EU of 28 February 2012 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for iron and steel production (OJ L 70, 8.3.2012, p. 63).

<sup>(119)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(120)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the best available techniques (BAT) conclusions for the production of chlor-alkali<sup>(121)</sup> and the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector<sup>(122)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for the refining of mineral oil and gas<sup>(123)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.11. Manufacture of carbon black

#### *Description of the activity*

Manufacture of carbon black.

The economic activities in this category could be associated with NACE code C20.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

Substantial contribution to climate change mitigation	
GHG emissions <sup>(124)</sup> from the carbon black production processes are lower than 1,141 <sup>(125)</sup> tCO <sub>2</sub> e per tonne of product.	
Do no significant harm ('DNSH')	
(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(121)</sup> Commission Implementing Decision 2013/732/EU of 9 December 2013 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions, for the production of chlor-alkali (OJ L 332, 11.12.2013, p. 34).

<sup>(122)</sup> Commission Implementing Decision (EU) 2016/902 of 30 May 2016 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for common waste water and waste gas treatment/management systems in the chemical sector (OJ L 152, 9.6.2016, p. 23).

<sup>(123)</sup> Commission Implementing Decision 2014/738/EU of 9 October 2014 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions, for the refining of mineral oil and gas (OJ L 307, 28.10.2014, p. 38).

<sup>(124)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(125)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.



(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the Best Available Techniques Reference Document (BREF) for the Large Volume Inorganic Chemicals – Solids and Others industry <sup>(126)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(127)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.1.2. Manufacture of soda ash

#### *Description of the activity*

Manufacture of disodium carbonate (soda ash, sodium carbonate, carbonic acid disodium salt).

The economic activities in this category could be associated with NACE code C20.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

GHG emissions <sup>(128)</sup> from the soda ash production processes are lower than 0,789 <sup>(129)</sup> tCO<sub>2</sub>e per tonne of product.

#### Do no significant harm (‘DNSH’)

(2) Climate change adaptation	<p>The activity complies with the criteria set out in Appendix A to this Annex.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>N/A</p>
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p>

<sup>(126)</sup> Best Available Techniques (BAT) Reference Document for the Large Volumes Inorganic Chemicals- Solids and Others industry, (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s\\_bref\\_0907.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s_bref_0907.pdf)).

<sup>(127)</sup> Implementing Decision (EU) 2016/902.

<sup>(128)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(129)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

	<p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the Best Available Techniques Reference Document (BREF) for the Large Volume Inorganic Chemicals – Solids and Others industry <sup>(130)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(131)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.13. Manufacture of chlorine

#### *Description of the activity*

Manufacture of chlorine.

The economic activities in this category could be associated with NACE code C20.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

Electricity consumption for electrolysis and chlorine treatment is equal or lower than 2.45 MWh per tonne of chlorine.

Average life-cycle GHG emissions of the electricity used for chlorine production is at or lower than 100 g CO<sub>2</sub>e/kWh.

Life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 <sup>(132)</sup> or ISO 14064-1:2018 <sup>(133)</sup>.

Quantified life-cycle GHG emissions are verified by an independent third party.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(130)</sup> Best Available Techniques (BAT) Reference Document for the Large Volumes Inorganic Chemicals- Solids and Others industry (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s\\_bref\\_0907.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s_bref_0907.pdf)).

<sup>(131)</sup> Implementing Decision (EU) 2016/902.

<sup>(132)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(133)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the best available techniques (BAT) conclusions for the production of chlor-alkali <sup>(134)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(135)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.14. Manufacture of organic basic chemicals

#### *Description of the activity*

Manufacture of:

(a) high value chemicals (HVC):

- (i) acetylene;
- (ii) ethylene;
- (iii) propylene;
- (iv) butadiene.

(b) Aromatics:

- (i) mixed alkylbenzenes, mixed alkylnaphthalenes other than HS 2707 or 2902;
- (ii) cyclohexane;
- (iii) benzene;
- (iv) toluene;
- (v) o-Xylene;
- (vi) p-Xylene;
- (vii) m-Xylene and mixed xylene isomers;
- (viii) ethylbenzene;
- (ix) cumene;
- (x) biphenyl, terphenyls, vinyltoluenes, other cyclic hydrocarbons excluding cyclanes, cyclenes, cycloterpenes, benzene, toluene, xylenes, styrene, ethylbenzene, cumene, naphthalene, anthracene;
- (xi) benzol (benzene), toluol (toluene) and xylol (xylenes)
- (xii) naphthalene and other aromatic hydrocarbon mixtures (excluding benzole, toluole, xylole).

(c) vinyl chloride;

(d) styrene;

<sup>(134)</sup> Implementing Decision 2013/732/EU.

<sup>(135)</sup> Implementing Decision (EU) 2016/902.

(e) ethylene oxide;

(f) monoethylene glycol;

(g) adipic acid.

The economic activities in this category could be associated with NACE code C20.14 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### Technical screening criteria

##### Substantial contribution to climate change mitigation

GHG emissions <sup>(136)</sup> from the organic basic chemicals production processes are lower than:

(a) for HVC: 0,693 <sup>(137)</sup> tCO<sub>2</sub>e/t of HVC;

(b) for aromatics: 0,0072 <sup>(138)</sup> tCO<sub>2</sub>e/t of complex weighted throughput;

(c) for vinyl chloride: 0,171 <sup>(139)</sup> tCO<sub>2</sub>e/t of vinyl chloride;

(d) for styrene: 0,419 <sup>(140)</sup> tCO<sub>2</sub>e/t of styrene;

(e) for ethylene oxide/ethylene glycols: 0,314 <sup>(141)</sup> tCO<sub>2</sub>e/t of ethylene oxide/glycol;

(f) for adipic acid: 0,32 <sup>(142)</sup> tCO<sub>2</sub>e /t of adipic acid.

Where the organic chemicals in scope are produced wholly or partially from renewable feedstock, the life-cycle GHG emissions of the manufactured chemical, manufactured wholly or partially from renewable feedstock, are lower than the life-cycle GHG emissions of the equivalent chemical manufactured from fossil fuel feedstock.

Life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 <sup>(143)</sup> or ISO 14064-1:2018 <sup>(144)</sup>.

Quantified life-cycle GHG emissions are verified by an independent third party.

Agricultural biomass used for the manufacture of organic basic chemicals complies with the criteria laid down in Article 29, paragraphs 2 to 5 of Directive (EU) 2018/2001. Forest biomass used for the manufacture of organic basic chemicals complies with the criteria laid down in Article 29, paragraphs 6 and 7 of that Directive.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(136)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(137)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(138)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(139)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(140)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(141)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(142)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

<sup>(143)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(144)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the best available techniques (BAT) conclusions for the production of large volumes organic chemicals<sup>(145)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector<sup>(146)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.15. Manufacture of anhydrous ammonia

#### *Description of the activity*

Manufacture of anhydrous ammonia.

The economic activities in this category could be associated with NACE code C20.15 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity complies with one of the following criteria:

- (a) ammonia is produced from hydrogen that complies with the technical screening criteria set out in Section 3.10 of this Annex (Manufacturing of hydrogen);
- (b) ammonia is recovered from waste water.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(145)</sup> Commission Implementing Decision (EU) 2017/2117 of 21 November 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the production of large volume organic chemicals (OJ L 323, 7.12.2017, p. 1).

<sup>(146)</sup> Implementing Decision (EU) 2016/902.

(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the Best Available Techniques Reference Document (BREF) for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers <sup>(147)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(148)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.16. **Manufacture of nitric acid**

#### *Description of the activity*

Manufacture of nitric acid.

The economic activities in this category could be associated with NACE code C20.15 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

GHG emissions <sup>(149)</sup> from the manufacture of nitric acid are lower than 0,038 <sup>(150)</sup> tCO<sub>2</sub>e per tonne of nitric acid.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	<p>The activity complies with the criteria set out in Appendix A to this Annex.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>N/A</p>
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p>

<sup>(147)</sup> Best Available Techniques (BAT) Reference Document for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic\\_aaf.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic_aaf.pdf)).

<sup>(148)</sup> Implementing Decision (EU) 2016/902.

<sup>(149)</sup> Calculated in accordance with the Regulation (EU) 2019/331.

<sup>(150)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

	<p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the Best Available Techniques Reference Document (BREF) for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers <sup>(151)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(152)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.17. Manufacture of plastics in primary form

#### *Description of the activity*

Manufacture resins, plastics materials and non-vulcanisable thermoplastic elastomers, the mixing and blending of resins on a custom basis, as well as the manufacture of non-customised synthetic resins.

The economic activities in this category could be associated with NACE code C20.16 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity complies with one of the following criteria:

- (a) the plastic in primary form is fully manufactured by mechanical recycling of plastic waste;
- (b) where mechanical recycling is not technically feasible or economically viable, the plastic in primary form is fully manufactured by chemical recycling of plastic waste and the life-cycle GHG emissions of the manufactured plastic, excluding any calculated credits from the production of fuels, are lower than the life-cycle GHG emissions of the equivalent plastic in primary form manufactured from fossil fuel feedstock. Life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 <sup>(153)</sup> or ISO 14064-1:2018 <sup>(154)</sup>. Quantified life-cycle GHG emissions are verified by an independent third party.
- (c) derived wholly or partially from renewable feedstock <sup>(155)</sup> and its life-cycle GHG emissions are lower than the life-cycle GHG emissions of the equivalent plastics in primary form manufactured from fossil fuel feedstock. Life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018. Quantified life-cycle GHG emissions are verified by an independent third party.

<sup>(151)</sup> Best Available Techniques (BAT) Reference Document for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic\\_aaf.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic_aaf.pdf)).

<sup>(152)</sup> Implementing Decision (EU) 2016/902.

<sup>(153)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(154)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

<sup>(155)</sup> Renewable feedstock refers to biomass, industrial bio-waste or municipal bio-waste.



Agricultural biomass used for the manufacture of plastics in its primary form complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used for the manufacture of plastics in its primary form complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in relevant best available techniques (BAT) conclusions, including:  (a) the Best Available Techniques Reference Document (BREF) for the Production of Polymers <sup>(156)</sup> ;  (b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(157)</sup> .  No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4. ENERGY

##### 4.1. Electricity generation using solar photovoltaic technology

###### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity using solar photovoltaic (PV) technology.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

###### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity generates electricity using solar PV technology.

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Do no significant harm ('DNSH')

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<sup>(156)</sup> Best Available Techniques (BAT) Reference Document for the Production of Polymers (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/pol\\_bref\\_0807.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/pol_bref_0807.pdf)).

<sup>(157)</sup> Commission Implementing Decision (EU) 2016/902 of 30 May 2016 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for common waste water and waste gas treatment/management systems in the chemical sector. (OJ L 152, 9.6.2016, p. 23).

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.2. Electricity generation using concentrated solar power (CSP) technology

##### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity using concentrated solar power (CSP) technology.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

The activity generates electricity using CSP technology.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.3. Electricity generation from wind power

##### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from wind power.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity generates electricity from wind power.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	In case of construction of offshore wind, the activity does not hamper the achievement of good environmental status as set out in Directive 2008/56/EC of the European Parliament and of the Council <sup>(158)</sup> , requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 11 (Noise/Energy), laid down in Annex I to that Directive, and as set out in Commission Decision (EU) 2017/848 <sup>(159)</sup> in relation to the relevant criteria and methodological standards for that descriptor.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex <sup>(160)</sup> .  In case of offshore wind, the activity does not hamper the achievement of good environmental status as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity) and 6 (seabed integrity), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors.

#### 4.4. Electricity generation from ocean energy technologies

*Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from ocean energy.

<sup>(158)</sup> Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (OJ L 164, 25.6.2008, p. 19).

<sup>(159)</sup> Commission Decision (EU) 2017/848 of 17 May 2017 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU (OJ L 125, 18.5.2017, p. 43).

<sup>(160)</sup> Practical guidance for the implementation of this criterion is contained in the European Commission notice C(2020) 7730 final "Guidance document on wind energy developments and EU nature legislation", (version of 4.6.2021: [https://ec.europa.eu/environment/nature/natura2000/management/docs/wind\\_farms\\_en.pdf](https://ec.europa.eu/environment/nature/natura2000/management/docs/wind_farms_en.pdf)).

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity generates electricity from ocean energy.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 11 (Noise/Energy), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for that descriptor.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012 of the European Parliament and of the Council <sup>(161)</sup> , which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.  The activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 1 (biodiversity), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for that descriptor.

#### 4.5. Electricity generation from hydropower

*Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from hydropower.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(161)</sup> Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products (OJ L 167, 27.6.2012, p. 1).

*Technical screening criteria*

## Substantial contribution to climate change mitigation

The activity complies with either of the following criteria:

- (a) the electricity generation facility is a run-of-river plant and does not have an artificial reservoir;
- (b) the power density of the electricity generation facility is above 5 W/m<sup>2</sup>;
- (c) the life-cycle GHG emissions from the generation of electricity from hydropower, are lower than 100 g CO<sub>2</sub>e/kWh. The life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018<sup>(162)</sup>, ISO 14064-1:2018<sup>(163)</sup> or the G-res tool<sup>(164)</sup>. Quantified life-cycle GHG emissions are verified by an independent third party.

## Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	<p>1. The activity complies with the provisions of Directive 2000/60/EC, in particular with all the requirements laid down in Article 4 of the Directive.</p> <p>2. For operation of existing hydropower plants, including refurbishment activities to enhance renewable energy or energy storage potential, the activity complies with the following criteria:</p> <p>2.1. In accordance with Directive 2000/60/EC and in particular Articles 4 and 11 of that Directive, all technically feasible and ecologically relevant mitigation measures have been implemented to reduce adverse impacts on water as well as on protected habitats and species directly dependent on water.</p> <p>2.2. Measures include, where relevant and depending on the ecosystems naturally present in the affected water bodies:</p> <ul style="list-style-type: none"> <li>(a) measures to ensure downstream and upstream fish migration (such as fish friendly turbines, fish guidance structures, state-of-the-art fully functional fish passes, measures to stop or minimise operation and discharges during migration or spawning);</li> <li>(b) measures to ensure minimum ecological flow (including mitigation of rapid, short-term variations in flow or hydro-peaking operations) and sediment flow;</li> <li>(c) measures to protect or enhance habitats.</li> </ul>

<sup>(162)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(163)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

<sup>(164)</sup> Publicly available online tool developed by the International Hydropower Association (IHA) in collaboration with the UNESCO Chair for Global Environmental Change (version of 4.6.2021: <https://www.hydropower.org/gres>).

2.3. The effectiveness of those measures is monitored in the context of the authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body.

3. For construction of new hydropower plants, the activity complies with the following criteria:

3.1. In accordance with Article 4 of Directive 2000/60/EC and in particular paragraph 7 of that Article, prior to construction, an impact assessment of the project is carried out to assess all its potential impacts on the status of water bodies within the same river basin and on protected habitats and species directly dependent on water, considering in particular migration corridors, free-flowing rivers or ecosystems close to undisturbed conditions.

The assessment is based on recent, comprehensive and accurate data, including monitoring data on biological quality elements that are specifically sensitive to hydromorphological alterations, and on the expected status of the water body as a result of the new activities, as compared to its current one.

It assesses in particular the cumulated impacts of this new project with other existing or planned infrastructure in the river basin.

3.2. On the basis of that impact assessment, it has been established that the plant is conceived, by design and location and by mitigation measures, so that it complies with one of the following requirements:

- (a) the plant does not entail any deterioration nor compromises the achievement of good status or potential of the specific water body it relates to;
- (b) where the plant risks to deteriorate or compromise the achievement of good status/potential of the specific water body it relates to, such deterioration is not significant, and is justified by a detailed cost-benefit assessment demonstrating both of the following:
  - (i) the reasons of overriding public interest or the fact that benefits expected from the planned hydropower plant outweigh the costs from deteriorating the status of water that are accruing to the environment and to society;
  - (ii) the fact that the overriding public interest or the benefits expected from the plant cannot, for reasons of technical feasibility or disproportionate cost, be achieved by alternative means that would lead to a better environmental outcome (such as refurbishing of existing hydropower plants or use of technologies not disrupting river continuity).

<sup>(162)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

	<p>3.3. All technically feasible and ecologically relevant mitigation measures are implemented to reduce adverse impacts on water as well as on protected habitats and species directly dependent on water.</p> <p>Mitigation measures include, where relevant and depending on the ecosystems naturally present in the affected water bodies:</p> <p>(a) measures to ensure downstream and upstream fish migration (such as fish friendly turbines, fish guidance structures, state-of the-art fully functional fish passes, measures to stop or minimise operation and discharges during migration or spawning);</p> <p>(b) measures to ensure minimum ecological flow (including mitigation of rapid, short-term variations in flow or hydro-peaking operations) and sediment flow;</p> <p>(c) measures to protect or enhance habitats.</p> <p>The effectiveness of those measures is monitored in the context of the authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body.</p> <p>3.4. The plant does not permanently compromise the achievement of good status/potential in any of the water bodies in the same river basin district.</p> <p>3.5. In addition to the mitigation measures referred to above, and where relevant, compensatory measures are implemented to ensure that the project does not increase the fragmentation of water bodies in the same river basin district. This is achieved by restoring continuity within the same river basin district to an extent that compensates the disruption of continuity, which the planned hydropower plant may cause. Compensation starts prior to the execution of the project.</p>
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex <sup>(165)</sup> .

#### 4.6. Electricity generation from geothermal energy

##### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from geothermal energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(165)</sup> Practical guidance is contained in Commission notice C/2018/2619 'Guidance document on the requirements for hydropower in relation to EU nature legislation' (OJ C 213, 18.6.2018, p. 1).



*Technical screening criteria*

## Substantial contribution to climate change mitigation

Life-cycle GHG emissions from the generation of electricity from geothermal energy are lower than 100 g CO<sub>2</sub>e/kWh. Life-cycle GHG emission savings are calculated using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018. Quantified life-cycle GHG emissions are verified by an independent third party.

## Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	For the operation of high-enthalpy geothermal energy systems, adequate abatement systems are in place to reduce emission levels in order not to hamper the achievement of air quality limit values set out in Directive 2004/107/EC of the European Parliament and of the Council <sup>(166)</sup> and Directive 2008/50/EC of the European Parliament and of the Council <sup>(167)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

**4.7. Electricity generation from renewable non-fossil gaseous and liquid fuels***Description of the activity*

Construction or operation of electricity generation facilities that produce electricity using gaseous and liquid fuels of renewable origin. This activity does not include electricity generation from the exclusive use of biogas and bio-liquid fuels (see Section 4.8 of this Annex).

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

## Substantial contribution to climate change mitigation

1. Life-cycle GHG emissions from the generation of electricity using renewable gaseous and liquid fuels are lower than 100 g CO<sub>2</sub>e/kWh.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018<sup>(168)</sup> or ISO 14064-1:2018<sup>(169)</sup>.

Quantified life-cycle GHG emissions are verified by an independent third party.

<sup>(166)</sup> Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air (OJ L 23, 26.1.2005, p. 3).

<sup>(167)</sup> Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (OJ L 152, 11.6.2008, p. 1).

<sup>(168)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(169)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels), that abatement activity complies with the criteria set out in the relevant Section of this Annex, where applicable.

Where the CO<sub>2</sub> that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

3. The activity meets either of the following criteria:

- (a) at construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;
- (b) at operation, physical measurement of methane emissions are reported and leak is eliminated.

4. Where the activity blends renewable gaseous or liquid fuels with biogas or bioliquids, the agricultural biomass used for the production of the biogas or bioliquids complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(170)</sup> . No significant cross-media effects occur.  For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193 of the European Parliament and of the Council <sup>(171)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.8. Electricity generation from bioenergy

*Description of the activity*

Construction and operation of electricity generation installations that produce electricity exclusively from biomass, biogas or bioliquids, excluding electricity generation from blending of renewable fuels with biogas or bioliquids (see Section 4.7 of this Annex).

<sup>(170)</sup> Commission Implementing Decision (EU) 2017/1442 of 31 July 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants (OJ L 212, 17.8.2017, p. 1).

<sup>(171)</sup> Directive (EU) 2015/2193 of the European Parliament and of the Council of 25 November 2015 on the limitation of emissions of certain pollutants into the air from medium combustion plants (OJ L 313, 28.11.2015, p. 1).

The economic activities in this category could be associated with NACE code D35.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. Agricultural biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.
2. The greenhouse gas emission savings from the use of biomass are at least 80 % in relation to the GHG saving methodology and the relative fossil fuel comparator set out in Annex VI to Directive (EU) 2018/2001.
3. Where the installations rely on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.
4. Points 1 and 2 do not apply to electricity generation installations with a total rated thermal input below 2 MW and using gaseous biomass fuels.
5. For electricity generation installations with a total rated thermal input from 50 to 100 MW, the activity applies high-efficiency cogeneration technology, or, for electricity-only installations, the activity meets an energy efficiency level associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(172)</sup>.
6. For electricity generation installations with a total rated thermal input above 100 MW, the activity complies with one or more of the following criteria:
  - (a) attains electrical efficiency of at least 36 %;
  - (b) applies highly efficient CHP (combined heat and power) technology as referred to in Directive 2012/27/EU of the European Parliament and of the Council <sup>(173)</sup>;
  - (c) uses carbon capture and storage technology. Where the CO<sub>2</sub> that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground in accordance with the technical screening criteria set out in Sections 5.11 and 5.12, respectively, of this Annex.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(172)</sup> Implementing Decision (EU) 2017/1442.

<sup>(173)</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1).

(5) Pollution prevention and control	<p>For installations falling within the scope of Directive 2010/75/EU of the European Parliament and of the Council <sup>(174)</sup>, emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(175)</sup>. No significant cross-media effects occur.</p> <p>For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.</p> <p>For plants in zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, measures are implemented to reduce emission levels taking into account the results of the information exchange <sup>(176)</sup> which are published by the Commission in accordance with Article 6, paragraphs 9 and 10, of Directive (EU) 2015/2193.</p> <p>For anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(177)</sup>. No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.9. Transmission and distribution of electricity

##### *Description of the activity*

Construction and operation of transmission systems that transport the electricity on the extra high-voltage and high-voltage interconnected system.

Construction and operation of distribution systems that transport electricity on high-voltage, medium-voltage and low-voltage distribution systems.

The economic activities in this category could be associated with several NACE codes, in particular D35.12 and D35.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(174)</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17).

<sup>(175)</sup> Implementing Decision (EU) 2017/1442.

<sup>(176)</sup> The final technology report resulting from the exchange of information with Member States, the industries concerned and non-governmental organisations contains technical information on best available technologies used in medium combustion plants to reduce their environmental impacts, and on the emission levels achievable with best available and emerging technologies and the related costs (version of 4.6.2021: <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/9a99a632-9ba8-4cc0-9679-08d929afda59/details>).

<sup>(177)</sup> Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council (OJ L 208, 17.8.2018, p. 38).

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

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#### Substantial contribution to climate change mitigation

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The activity complies with one of the following criteria:

1. The transmission and distribution infrastructure or equipment is in an electricity system that complies with at least one of the following criteria:
  - (a) the system is the interconnected European system, i.e. the interconnected control areas of Member States, Norway, Switzerland and the United Kingdom, and its subordinated systems;
  - (b) more than 67 % of newly enabled generation capacity in the system is below the generation threshold value of 100 g CO<sub>2</sub>e/kWh measured on a life cycle basis in accordance with electricity generation criteria, over a rolling five-year period;
  - (c) the average system grid emissions factor, calculated as the total annual emissions from power generation connected to the system, divided by the total annual net electricity production in that system, is below the threshold value of 100 g CO<sub>2</sub>e/kWh measured on a life cycle basis in accordance with electricity generation criteria, over a rolling five-year period;

Infrastructure dedicated to creating a direct connection or expanding an existing direct connection between a substation or network and a power production plant that is more greenhouse gas intensive than 100 g CO<sub>2</sub>e/kWh measured on a life cycle basis is not compliant.

Installation of metering infrastructure that does not meet the requirements of smart metering systems of Article 20 of Directive (EU) 2019/944 is not compliant.

2. The activity is one of the following:
  - (a) construction and operation of direct connection, or expansion of existing direct connection, of low carbon electricity generation below the threshold of 100 g CO<sub>2</sub>e/kWh measured on a life cycle basis to a substation or network;
  - (b) construction and operation of electric vehicle (EV) charging stations and supporting electric infrastructure for the electrification of transport, subject to compliance with the technical screening criteria under the transport Section of this Annex;
  - (c) installation of transmission and distribution transformers that comply with the Tier 2 (1 July 2021) requirements set out in Annex I to the Commission Regulation (EU) No 548/2014<sup>(178)</sup> and, for medium power transformers with highest voltage for equipment not exceeding 36 kV, with AAA0 level requirements on no-load losses set out in standard EN 50588-1<sup>(179)</sup>.
  - (d) construction/installation and operation of equipment and infrastructure where the main objective is an increase of the generation or use of renewable electricity generation;
  - (e) installation of equipment to increase the controllability and observability of the electricity system and to enable the development and integration of renewable energy sources, including:
    - (i) sensors and measurement tools (including meteorological sensors for forecasting renewable production);
    - (ii) communication and control (including advanced software and control rooms, automation of substations or feeders, and voltage control capabilities to adapt to more decentralised renewable infeed).

<sup>(178)</sup> Commission Regulation (EU) No 548/2014 of 21 May 2014 on implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to small, medium and large power transformers (OJ L 152, 22.5.2014, p. 1).

<sup>(179)</sup> CEI EN 50588-1 Medium power transformers 50 Hz, with highest voltage for equipment not exceeding 36 kV.

- (f) installation of equipment such as, but not limited to future smart metering systems or those replacing smart metering systems in line with Article 19(6) of Directive (EU) 2019/944 of the European Parliament and of the Council<sup>(180)</sup>, which meet the requirements of Article 20 of Directive (EU) 2019/944, able to carry information to users for remotely acting on consumption, including customer data hubs;
- (g) construction/installation of equipment to allow for exchange of specifically renewable electricity between users;
- (h) construction and operation of interconnectors between transmission systems, provided that one of the systems is compliant.

For the purposes of this Section, the following specifications apply:

- (a) the rolling five-year period used in determining compliance with the thresholds is based on five consecutive historical years, including the year for which the most recent data are available;
- (b) a 'system' means the power control area of the transmission or distribution network where the infrastructure or equipment is installed;
- (c) transmission systems may include generation capacity connected to subordinated distribution systems;
- (d) distribution systems subordinated to a transmission system that is deemed to be on a trajectory to full decarbonisation may also be deemed to be on a trajectory to full decarbonisation;
- (e) to determine compliance, it is possible to consider a system covering multiple control areas which are interconnected and with significant energy exchanges between them, in which case the weighted average emissions factor across all included control areas is used, and individual subordinated transmission or distribution systems within that system is not required to demonstrate compliance separately;
- (f) it is possible for a system to become non-compliant after having previously been compliant. In systems that become non-compliant, no new transmission and distribution activities are compliant from that moment onward, until the system complies again with the threshold (except for those activities that are always compliant, see above). Activities in subordinated systems may still be compliant, where those subordinated systems meet the criteria of this Section;
- (g) a direct connection or expansion of an existing direct connection to production plants includes infrastructure that is indispensable to carry the associated electricity from the power generating facility to a substation or to the network.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse or recycling at end of life in accordance with the waste hierarchy, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.

<sup>(180)</sup> Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on rules for the internal market for electricity and amending Directive 2012/27/EU (OJ L 158, 14.6.2019, p. 125),

(5) Pollution prevention and control	<p>Overground high voltage lines:</p> <p>(a) for construction site activities, activities follow the principles of the IFC General Environmental, Health, and Safety Guidelines <sup>(181)</sup>.</p> <p>(b) activities respect applicable norms and regulations to limit impact of electromagnetic radiation on human health, including for activities carried out in the Union, the Council recommendation on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) <sup>(182)</sup> and for activities carried out in third countries, the 1998 Guidelines of International Commission on Non-Ionizing Radiation Protection (ICNIRP) <sup>(183)</sup>.</p> <p>Activities do not use PCBs polychlorinated biphenyls.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex <sup>(184)</sup> .

#### 4.10. Storage of electricity

##### *Description of the activity*

Construction and operation of facilities that store electricity and return it at a later time in the form of electricity. The activity includes pumped hydropower storage.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category have no dedicated NACE code as referred to in the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity is the construction and operation of electricity storage including pumped hydropower storage.

Where the activity includes chemical energy storage, the medium of storage (such as hydrogen or ammonia) complies with the criteria for manufacturing of the corresponding product specified in Sections 3.7 to 3.17 of this Annex. In case of using hydrogen as electricity storage, where hydrogen meets the technical screening criteria specified in Section 3.10 of this Annex, re-electrification of hydrogen is also considered part of the activity.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(181)</sup> Environmental, Health, and Safety (EHS) Guidelines of 30 April 2007 (version of 4.6.2021: <https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=jOWim3p>).

<sup>(182)</sup> Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC) (OJ L 199, 30.7.1999, p. 59).

<sup>(183)</sup> ICNIRP 1998 Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz) (version of 4.6.2021: <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>).

<sup>(184)</sup> Practical guidance for the implementation of this criterion is contained in the European Commission notice C(2018)2620 "Energy transmission infrastructure and EU nature legislation" (OJ C 213, 18.6.2018, p. 62).



(3) Sustainable use and protection of water and marine resources	In case of pumped hydropower storage not connected to a river body, the activity complies with the criteria set out in Appendix B to this Annex.  In case of pumped hydropower storage connected to a river body, the activity complies with the criteria for DNSH to sustainable use and protection of water and marine resources specified in Section 4.5 (Electricity production from hydropower).
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse or recycling at end of life in accordance with the waste hierarchy, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.11. Storage of thermal energy

##### *Description of the activity*

Construction and operation of facilities that store thermal energy and return it at a later time in the form of thermal energy or other energy vectors.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category have no dedicated NACE code as referred to in the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

The activity stores thermal energy, including Underground Thermal Energy Storage (UTES) or Aquifer Thermal Energy Storage (ATES).

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	For Aquifer Thermal Energy Storage, the activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.

<sup>(181)</sup> Environmental, Health, and Safety (EHS) Guidelines of 30 April 2007 (version of 4.6.2021: <https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=jOWim3p>).

(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.12. Storage of hydrogen

##### *Description of the activity*

Construction and operation of facilities that store hydrogen and return it at a later time.

The economic activities in this category have no dedicated NACE code in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

The activity is one of the following:

- (a) construction of hydrogen storage facilities;
- (b) conversion of existing underground gas storage facilities into storage facilities dedicated to hydrogen-storage;
- (c) operation of hydrogen storage facilities where the hydrogen stored in the facility meets the criteria for manufacture of hydrogen set out in Section 3.10. of this Annex.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	In the case of storage above five tonnes, the activity complies with Directive 2012/18/EU of the European Parliament and of the Council <sup>(185)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.13. Manufacture of biogas and biofuels for use in transport and of bioliquids

##### *Description of the activity*

Manufacture of biogas or biofuels for use in transport and of bioliquids.

<sup>(185)</sup> Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (OJ L 197, 24.7.2012, p. 1).

The economic activities in this category could be associated with NACE code D35.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### Technical screening criteria

##### Substantial contribution to climate change mitigation

1. Agricultural biomass used for the manufacture of biogas or biofuels for use in transport and for the manufacture of bioliquids complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used for the manufacture of biogas or biofuels for use in transport and for the manufacture of bioliquids complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Food-and feed crops are not used for the manufacture of biofuels for use in transport and for the manufacture of bioliquids.

2. The greenhouse gas emission savings from the manufacture of biofuels and biogas for use in transport and from the manufacture of bioliquids are at least 65 % in relation to the GHG saving methodology and the relative fossil fuel comparator set out in Annex V to Directive (EU) 2018/2001.

3. Where the manufacture of biogas relies on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.

4. Where the CO<sub>2</sub> that otherwise would be emitted from the manufacturing process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	For biogas production, a gas-tight cover on the digestate storage is applied.  For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(186)</sup> . No significant cross-media effects occur.  In case of anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 for digestate or CMC 3 for compost, as applicable, in Annex II to Regulation EU 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(186)</sup> Implementing Decision (EU) 2018/1147.

#### 4.14. Transmission and distribution networks for renewable and low-carbon gases

##### *Description of the activity*

Conversion, repurposing or retrofit of gas networks for the transmission and distribution of renewable and low-carbon gases.

Construction or operation of transmission and distribution pipelines dedicated to the transport of hydrogen or other low-carbon gases.

The economic activities in this category could be associated with several NACE codes, in particular D35.22, F42.21 and H49.50 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. The activity consists in one of the following:

- (a) construction or operation of new transmission and distribution networks dedicated to hydrogen or other low-carbon gases;
- (b) conversion/repurposing of existing natural gas networks to 100 % hydrogen;
- (c) retrofit of gas transmission and distribution networks that enables the integration of hydrogen and other low-carbon gases in the network, including any gas transmission or distribution network activity that enables the increase of the blend of hydrogen or other low carbon gasses in the gas system;

2. The activity includes leak detection and repair of existing gas pipelines and other network elements to reduce methane leakage.

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Do no significant harm ('DNSH')

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Fans, compressors, pumps and other equipment used which is covered by Directive 2009/125/EC of the European Parliament and of the Council <sup>(187)</sup> comply, where relevant, with the top class requirements of the energy label, and with implementing regulations under that Directive and represent the best available technology.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

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#### 4.15. District heating/cooling distribution

##### *Description of the activity*

Construction, refurbishment and operation of pipelines and associated infrastructure for distribution of heating and cooling, ending at the sub-station or heat exchanger.

<sup>(187)</sup> Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products (OJ L 285, 31.10.2009, p. 10).

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity complies with one of the following criteria:

- (a) for construction and operation of pipelines and associated infrastructure for distributing heating and cooling, the system meets the definition of efficient district heating and cooling systems laid down in Article 2, point 41, of Directive 2012/27/EU;
- (b) for refurbishment of pipelines and associated infrastructure for distributing heating and cooling, the investment that makes the system meet the definition of efficient district heating or cooling laid down in Article 2, point 41, of Directive 2012/27/EU starts within a three year period as underpinned by a contractual obligation or an equivalent in case of operators in charge of both generation and the network;
- (c) the activity is the following:
  - (i) modification to lower temperature regimes;
  - (ii) advanced pilot systems (control and energy management systems, Internet of Things).

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Fans, compressors, pumps and other equipment used which is covered by Directive 2009/125/EC comply, where relevant, with the top class requirements of the energy label, and otherwise comply with implementing regulations under that Directive and represent the best available technology.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.16. Installation and operation of electric heat pumps

*Description of the activity*

Installation and operation of electric heat pumps.

Where an economic activity is an integral element of 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with several NACE codes, in particular D35.30 and F43.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*


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 Substantial contribution to climate change mitigation
 

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The installation and operation of electric heat pumps complies with both of the following criteria:

- (a) refrigerant threshold: Global Warming Potential does not exceed 675;
  - (b) energy efficiency requirements laid down in the implementing regulations <sup>(188)</sup> under Directive 2009/125/EC are met.
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 Do no significant harm ('DNSH')
 

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.  A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	For air to air heat pumps with rated capacity of 12 kW or below, indoor and outdoor sound power levels are below the threshold set out in Commission Regulation (EU) No 206/2012 <sup>(189)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	N/A

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#### 4.17. Cogeneration of heat/cool and power from solar energy

*Description of the activity*

Construction and operation of facilities co-generating electricity and heat/cool from solar energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*


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 Substantial contribution to climate change mitigation
 

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<sup>(188)</sup> Commission Regulation (EU) No 206/2012 of 6 March 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for air conditioners and comfort fans (OJ L 72, 10.3.2012, p. 7), Commission Regulation (EU) No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters (OJ L 239, 6.9.2013, p. 136) and Commission Regulation (EU) 2016/2281 Commission Regulation (EU) 2016/2281 of 30 November 2016 implementing Directive 2009/125/EC of the European Parliament and of the Council establishing a framework for the setting of ecodesign requirements for energy-related products, with regard to ecodesign requirements for air heating products, cooling products, high temperature process chillers and fan coil units (OJ L 346, 20.12.2016, p. 1).

<sup>(189)</sup> Commission Regulation (EU) No 206/2012 of 6 March 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for air conditioners and comfort fans (OJ L 72, 10.3.2012, p. 7).

The activity consists in the cogeneration <sup>(190)</sup> of electricity and heat/cool from solar energy.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.18. Cogeneration of heat/cool and power from geothermal energy

*Description of the activity*

Construction and operation of facilities co-generating heat/cool and power from geothermal energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

Substantial contribution to climate change mitigation

The life-cycle GHG emissions from the combined generation of heat/cool and power <sup>(191)</sup> from geothermal energy are lower than 100 g CO<sub>2</sub>e per 1 kWh of energy output from the combined generation.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018.

Quantified life-cycle GHG emissions are verified by an independent third party.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(190)</sup> Cogeneration is defined in Article 2 point 30 of Directive 2012/27/EU.

<sup>(191)</sup> Cogeneration is defined in Article 2 point 30 of Directive 2012/27/EU.



(5) Pollution prevention and control	For the operation of high-enthalpy geothermal energy systems, adequate abatement systems are in place to reduce emission levels in order not to hamper the achievement of air quality limit values set out in Directives 2004/107/EC and 2008/50/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.19. Cogeneration of heat/cool and power from renewable non-fossil gaseous and liquid fuels

##### *Description of the activity*

Construction and operation of combined heat/cool and power generation facilities using gaseous and liquid fuels of renewable origin. This activity does not include cogeneration of heat/cool and power from the exclusive use of biogas and bio-liquid fuels (see Section 4.20 of this Annex)

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. The life-cycle GHG emissions from the co-generation of heat/cool and power <sup>(192)</sup> from renewable gaseous and liquid fuels are lower than 100 g CO<sub>2</sub>e per 1 kWh of energy output from the co-generation.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 <sup>(193)</sup> or ISO 14064-1:2018 <sup>(194)</sup>.

Quantified life-cycle GHG emissions are verified by an independent third party.

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels) that abatement activity complies with the relevant Sections of this Annex, where applicable.

Where the CO<sub>2</sub> that would otherwise be emitted from the cogeneration process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

3. The activity meets either of the following criteria:

- (a) at construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;
- (b) at operation, physical measurement of methane emissions are reported and leak is eliminated.

4. Where the activity blends renewable gaseous or liquid fuels with biogas or bioliquids, the agricultural biomass used for the production of the biogas or bioliquids complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(192)</sup> Cogeneration is defined in Article 2 point 30 of Directive 2012/27/EU.

<sup>(193)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(194)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(195)</sup> . No significant cross-media effects occur.  For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.20. Cogeneration of heat/cool and power from bioenergy

##### *Description of the activity*

Construction and operation of installations used for cogeneration of heat/cool and power exclusively from biomass, biogas or bioliquids, and excluding cogeneration from blending of renewable fuels with biogas or bioliquids (see Section 4.19 of this Annex).

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. Agricultural biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 6 and 7 of that Directive.
2. The greenhouse gas emission savings from the use of biomass in cogeneration installations are at least 80 % in relation to the GHG emission saving methodology and fossil fuel comparator set out in Annex VI to Directive (EU) 2018/2001.
3. Where the cogeneration installations rely on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.
4. Points 1 and 2 do not apply to cogeneration installations with a total rated thermal input below 2 MW and using gaseous biomass fuels.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.

<sup>(195)</sup> Implementing Decision (EU) 2017/1442.

(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For installations falling within the scope of Directive 2010/75/EU, emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants<sup>(196)</sup>, ensuring at the same time that no significant cross-media effects occur.</p> <p>For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.</p> <p>For plants in zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, results of the information exchange<sup>(197)</sup>, which are published by the Commission in accordance with Article 6, paragraphs 9 and 10, of Directive (EU) 2015/2193 are taken into account.</p> <p>In case of anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment<sup>(198)</sup>. No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.21. Production of heat/cool from solar thermal heating

##### *Description of the activity*

Construction and operation of facilities producing heat/cool from solar thermal heating technology.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(196)</sup> Implementing Decision (EU) 2017/1442.

<sup>(197)</sup> The final technology report resulting from the exchange of information with Member States, the industries concerned and non-governmental organisations contains technical information on best available technologies used in medium combustion plants to reduce their environmental impacts, and on the emission levels achievable with best available and emerging technologies and the related costs (version of 4.6.2021: <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/9a99a632-9ba8-4cc0-9679-08d929afda59/details>).

<sup>(198)</sup> Implementing Decision (EU) 2018/1147.

*Technical screening criteria*


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Substantial contribution to climate change mitigation

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The activity produces heat/cool using solar thermal heating.

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Do no significant harm ('DNSH')

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.22. Production of heat/cool from geothermal energy

*Description of the activity*

Construction or operation of facilities that produce heat/cool from geothermal energy.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*


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Substantial contribution to climate change mitigation

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The life-cycle GHG emissions from the generation of heat/cool from geothermal energy are lower than 100 g CO<sub>2</sub>e/kWh.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018.

Quantified life-cycle GHG emissions are verified by an independent third party.

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Do no significant harm ('DNSH')

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(196)</sup> Implementing Decision (EU) 2017/1442.

(5) Pollution prevention and control	For the operation of high-enthalpy geothermal energy systems, adequate abatement systems are in place to reduce emission levels in order not to hamper the achievement of air quality limit values set out in Directives 2004/107/EC and 2008/50/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.23. Production of heat/cool from renewable non-fossil gaseous and liquid fuels

##### *Description of the activity*

Construction and operation of heat generation facilities that produce heat/cool using gaseous and liquid fuels of renewable origin. This activity does not include production of heat/cool from the exclusive use of biogas and bio-liquid fuels (see Section 4.24 of this Annex).

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

1. The life-cycle GHG emissions from the generation of heat/cool using renewable gaseous and liquid fuels are lower than 100 g CO<sub>2</sub>e/kWh.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018<sup>(199)</sup> or ISO 14064-1:2018<sup>(200)</sup>.

Quantified life-cycle GHG emissions are verified by an independent third party.

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels), that abatement activity complies with the relevant Sections of this Annex, where applicable.

Where the CO<sub>2</sub> that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO<sub>2</sub> is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

3. The activity meets either of the following criteria:

- (a) at construction, measurement equipment for monitoring physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;
- (b) at operation, physical measurement of methane emissions are reported and leak is eliminated.

4. Where the activity blends renewable gaseous or liquid fuels with biogas or bioliquids, the agricultural biomass used for the production of the biogas or bioliquids complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(199)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(200)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(201)</sup> . No significant cross-media effects occur.  For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.24. Production of heat/cool from bioenergy

##### *Description of the activity*

Construction and operation of facilities that produce heat/cool exclusively from biomass, biogas or bioliquids, and excluding production of heat/cool from blending of renewable fuels with biogas or bioliquids (see Section 4.23 of this Annex).

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

1. Agricultural biomass used in the activity for the production of heat and cool complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.
2. The greenhouse gas emission savings from the use of biomass are at least 80 % in relation to the GHG emission saving methodology and relative fossil fuel comparator set out in Annex VI to Directive (EU) 2018/2001.
3. Where the installations rely on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.
4. Points 1 and 2 do not apply to heat generation installations with a total rated thermal input below 2 MW and using gaseous biomass fuels.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.

<sup>(201)</sup> Implementing Decision (EU) 2017/1442.

(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For installations falling within the scope of Directive 2010/75/EU, emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(202)</sup>, ensuring at the same time that no significant cross-media effects occur.</p> <p>For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.</p> <p>For plants in zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, results of the information exchange <sup>(203)</sup>, which are published by the Commission in accordance with Article 6, paragraphs 9 and 10 of Directive (EU) 2015/2193 are taken into account.</p> <p>For anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(204)</sup>. No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.25. Production of heat/cool using waste heat

##### *Description of the activity*

Construction and operation of facilities that produce heat/cool using waste heat.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(202)</sup> Implementing Decision (EU) 2017/1442.

<sup>(203)</sup> The final technology report resulting from the exchange of information with Member States, the industries concerned and non-governmental organisations contains technical information on best available technologies used in medium combustion plants to reduce their environmental impacts, and on the emission levels achievable with best available and emerging technologies and the related costs (version of 4.6.2021: <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/9a99a632-9ba8-4cc0-9679-08d929afda59/details>).

<sup>(204)</sup> Implementing Decision (EU) 2018/1147.



*Technical screening criteria*


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Substantial contribution to climate change mitigation

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The activity produces heat/cool from waste heat.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	Pumps and the kind of equipment used, which is covered by Ecodesign and Energy labelling comply, where relevant, with the top class requirements of the energy label laid down in Regulation (EU) 2017/1369, and with implementing regulations under Directive 2009/125/EC and represent the best available technology.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

5. WATER SUPPLY, SEWERAGE, WASTE MANAGEMENT AND REMEDIATION

5.1. **Construction, extension and operation of water collection, treatment and supply systems**

*Description of the activity*

Construction, extension and operation of water collection, treatment and supply systems.

The economic activities in this category could be associated with several NACE codes, in particular E36.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*


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Substantial contribution to climate change mitigation

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The water supply system complies with one of the following criteria:

- (a) the net average energy consumption for abstraction and treatment equals to or is lower than 0,5 kWh per cubic meter produced water supply. Net energy consumption may take into account measures decreasing energy consumption, such as source control (pollutant load inputs), and, as appropriate, energy generation (such as hydraulic, solar and wind energy);

- (b) the leakage level is either calculated using the Infrastructure Leakage Index (ILI) <sup>(205)</sup> rating method and the threshold value equals to or is lower than 1,5, or is calculated using another appropriate method and the threshold value is established in accordance with Article 4 of Directive (EU) 2020/2184 of the European Parliament and of the Council <sup>(206)</sup>. That calculation is to be applied across the extent of water supply (distribution) network where the works are carried out, i.e. at water supply zone level, district metered area(s) (DMAs) or pressure managed area(s) (PMAs).

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

## 5.2. Renewal of water collection, treatment and supply systems

### *Description of the activity*

Renewal of water collection, treatment and supply systems including renewals to water collection, treatment and distribution infrastructures for domestic and industrial needs. It implies no material changes to the volume of flow collected, treated or supplied.

The economic activities in this category could be associated with several NACE codes, in particular E36.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

### *Technical screening criteria*

Substantial contribution to climate change mitigation

The renewal of the water supply system leads to improved energy efficiency in one of the following ways:

- (a) by decreasing the net average energy consumption of the system by at least 20 % compared to own baseline performance averaged for three years, including abstraction and treatment, measured in kWh per cubic meter produced water supply;

<sup>(205)</sup> The Infrastructure Leakage Index (ILI) is calculated as current annual real losses (CARL)/unavoidable annual real losses (UARL): The current annual real losses (CARL) represent the amount of water that is actually lost from the distribution network (i.e. not delivered to final users). The unavoidable annual real losses (UARL) take into consideration that there will always be some leakage in a water distribution network. The UARL is calculated based on factors such as the length of the network, the number of service connections and the pressure at which the network is operating.

<sup>(206)</sup> Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast) (OJ L 435, 23.12.2020, p. 1).

- (b) by closing the gap by at least 20 % either between the current leakage level averaged over three years, calculated using the Infrastructure Leakage Index (ILI) rating method and an ILI of 1.5 <sup>(207)</sup>, or between the current leakage level averaged over three years, calculated using another appropriate method, and the threshold value established in accordance with Article 4 of Directive (EU) 2020/2184. The current leakage level averaged over three years is calculated across the extent of water supply (distribution) network where the works are carried out, i.e. for the renewed water supply (distribution) network at district metered area(s) (DMAs) or pressure managed area(s) (PMAs).

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 5.3. Construction, extension and operation of waste water collection and treatment

*Description of the activity*

Construction, extension and operation of centralised waste water systems including collection (sewer network) and treatment.

The economic activities in this category could be associated with several NACE codes, in particular E37.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

Substantial contribution to climate change mitigation

1. The net energy consumption of the waste water treatment plant equals to or is lower than:
  - (a) 35 kWh per population equivalent (p.e.) per annum for treatment plant capacity below 10 000 p.e.;
  - (b) 25 kWh per population equivalent (p.e.) per annum for treatment plant capacity between 10 000 and 100 000 p.e.;
  - (c) 20 kWh per population equivalent (p.e.) per annum for treatment plant capacity above 100 000 p.e.

Net energy consumption of the operation of the waste water treatment plant may take into account measures decreasing energy consumption relating to source control (reduction of storm water or pollutant load inputs), and, as appropriate, energy generation within the system (such as hydraulic, solar, thermal and wind energy).

<sup>(207)</sup> The Infrastructure Leakage Index (ILI) is calculated as current annual real losses (CARL)/unavoidable annual real losses (UARL): The current annual real losses (CARL) represent the amount of water that is actually lost from the distribution network (i.e. not delivered to final users). The unavoidable annual real losses (UARL) take into consideration that there will always be some leakage in a water distribution network. The UARL is calculated based on factors such as the length of the network, the number of service connections and the pressure at which the network is operating.

2. For the construction and extension of a waste water treatment plant or a waste water treatment plant with a collection system, which are substituting more GHG-intensive treatment systems (such as septic tanks, anaerobic lagoons), an assessment of the direct GHG emissions is performed<sup>(208)</sup>. The results are disclosed to investors and clients on demand.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex. Where the waste water is treated to a level suitable for reuse in agricultural irrigation, the required risk management actions to avoid adverse environmental impacts have been defined and implemented <sup>(209)</sup> .
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Discharges to receiving waters meet the requirements laid down in Council Directive 91/271/EEC <sup>(210)</sup> or as required by national provisions stating maximum permissible pollutant levels from discharges to receiving waters.  Appropriate measures have been implemented to avoid and mitigate excessive storm water overflows from the waste water collection system, which may include nature-based solutions, separate storm water collection systems, retention tanks and treatment of the first flush.  Sewage sludge is used in accordance with Council Directive 86/278/EEC <sup>(211)</sup> or as required by national law relating to the spreading of sludge on the soil or any other application of sludge on and in the soil.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 5.4. Renewal of waste water collection and treatment

##### *Description of the activity*

Renewal of centralised waste water systems including collection (sewer network) and treatment. It implies no material change related to the load or volume of flow collected or treated in the waste water system.

The economic activities in this category could be associated with NACE codes E37.00 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(208)</sup> For example, following IPCC guidelines for national GHG inventories for waste water treatment (version of 4.6.2021: [https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5\\_Volume5/19R\\_V5\\_6\\_Ch06\\_Wastewater.pdf](https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5_Volume5/19R_V5_6_Ch06_Wastewater.pdf)).

<sup>(209)</sup> As set out in Annex II of Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).

<sup>(210)</sup> Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment (OJ L 135, 30.5.1991, p. 40).

<sup>(211)</sup> Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture (OJ L 181, 4.7.1986, p. 6).

*Technical screening criteria*

## Substantial contribution to climate change mitigation

1. The renewal of a collection system improves energy efficiency by decreasing the average energy consumption by 20 % compared to own baseline performance averaged over three years, demonstrated on an annual basis. That decrease of energy consumption can be accounted for at the level of the project (i.e. the collection system renewal) or, across the downstream waste water agglomeration (i.e. including the downstream collection system, treatment plant or discharge of waste water).
2. The renewal of a waste water treatment plant improves energy efficiency by decreasing the average energy consumption of the system by at least 20 % compared to own baseline performance averaged over three years, demonstrated on an annual basis.
3. For the purposes of points 1 and 2, the net energy consumption of the system is calculated in kWh per population equivalent per annum of the waste water collected or effluent treated, taking into account measures decreasing energy consumption relating to source control (reduction of storm water or pollutant load inputs) and, as appropriate, energy generation within the system (such as hydraulic, solar, thermal and wind energy).
4. For the purpose of point 1 and 2, the operator demonstrates that there are no material changes relating to external conditions, including modifications to discharge authorisation(s) or changes in load to the agglomeration that would lead to a reduction of energy consumption, independent of efficiency measures taken.

## Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex. Where the waste water is treated to a level suitable for reuse in agricultural irrigation, the required risk management actions to avoid adverse environmental impacts have been defined and implemented <sup>(212)</sup> .
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Discharges to receiving waters meet the requirements laid down in Directive 91/271/EEC or as required by national provisions stating maximum permissible pollutant levels from discharges to receiving waters.  Appropriate measures have been implemented to avoid and mitigate excessive storm water overflows from the waste water collection system, which may include nature-based solutions, separate storm water collection systems, retention tanks and treatment of the first flush.  Sewage sludge is used in accordance with Directive 86/278/EEC or as required by national law relating to the spreading of sludge on the soil or any other application of sludge on and in the soil.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(212)</sup> As set out in Annex II to Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).

### 5.5. Collection and transport of non-hazardous waste in source segregated fractions

#### *Description of the activity*

Separate collection and transport of non-hazardous waste in single or comingled fractions<sup>(213)</sup> aimed at preparing for reuse or recycling.

The economic activities in this category could be associated with NACE code E38.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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All separately collected and transported non-hazardous waste that is segregated at source is intended for preparation for reuse or recycling operations.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Separately collected waste fractions are not mixed in waste storage and transfer facilities with other waste or materials with different properties.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 5.6. Anaerobic digestion of sewage sludge

#### *Description of the activity*

Construction and operation of facilities for the treatment of sewage sludge by anaerobic digestion with the resulting production and utilisation of biogas or chemicals.

The economic activities in this category could be associated with several NACE codes, in particular E37.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. A monitoring and contingency plan is in place in order to minimise methane leakage at the facility.
2. The produced biogas is used directly for the generation of electricity or heat, or upgraded to bio-methane for injection in the natural gas grid, or used as vehicle fuel or as feedstock in chemical industry.

<sup>(213)</sup> In the Union, the activity is in line with Article 10(3) of Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3) and the national legislation and waste management plans.

Do no significant harm ('DNSH')	
(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(214)</sup> . No significant cross-media effects occur.  Where the resulting digestate is intended for use as fertiliser or soil improver, its nitrogen content (with tolerance level $\pm 25\%$ ) is communicated to the buyer or the entity in charge of taking off the digestate.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 5.7. Anaerobic digestion of bio-waste

##### *Description of the activity*

Construction and operation of dedicated facilities for the treatment of separately collected bio-waste <sup>(215)</sup> through anaerobic digestion with the resulting production and utilisation of biogas and digestate and/or chemicals.

The economic activities in this category could be associated with several NACE codes, in particular E38.21 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. A monitoring and contingency plan is in place in order to minimise methane leakage at the facility.
2. The produced biogas is used directly for the generation of electricity or heat, or upgraded to bio-methane for injection in the natural gas grid, or used as vehicle fuel or as feedstock in chemical industry.
3. The bio-waste that is used for anaerobic digestion is source segregated and collected separately.
4. The produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment.
5. In the dedicated bio-waste treatment plants, the share of food and feed crops <sup>(216)</sup> used as input feedstock, measured in weight, as an annual average, is less than or equal to 10 % of the input feedstock.

<sup>(214)</sup> Implementing Decision (EU) 2018/1147.

<sup>(215)</sup> As defined in Article 3, point 4, of Directive 2008/98/EC.

<sup>(216)</sup> As defined in Article 2, point (40), of Directive (EU) 2018/2001.



Do no significant harm ('DNSH')	
(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(217)</sup>. No significant cross-media effects occur.</p> <p>The produced digestate meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 for digestate or CMC 3 for compost, as applicable, in Annex II to Regulation (EU) 2019/1009, or national rules on fertilisers or soil improvers for agricultural use</p> <p>The Nitrogen content (with tolerance level <math>\pm 25\%</math>) of the digestate used as fertiliser or soil improver is communicated to the buyer or the entity in charge of taking off the digestate.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 5.8. Composting of bio-waste

##### *Description of the activity*

Construction and operation of dedicated facilities for the treatment of separately collected bio-waste <sup>(218)</sup> through composting (aerobic digestion) with the resulting production and utilisation of compost.

The economic activities in this category could be associated with several NACE codes, in particular E38.21 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. The bio-waste that is composted is source segregated and collected separately.
2. The compost produced is used as fertiliser or soil improver and meets the requirements for fertilising materials set out in Component Material Category 3 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(217)</sup> Implementing Decision (EU) 2018/1147.

<sup>(218)</sup> As defined in Article 3, point 4, of Directive 2008/98/EC.

(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For composting plants treating over 75 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out for aerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(219)</sup>. No significant cross-media effects occur.</p> <p>The site has a system in place that prevents leachate reaching groundwater.</p> <p>The compost produced meets the requirements for fertilising materials set out in Component Material Category 3 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 5.9. Material recovery from non-hazardous waste

##### *Description of the activity*

Construction and operation of facilities for the sorting and processing of separately collected non-hazardous waste streams into secondary raw materials involving mechanical reprocessing, except for backfilling purposes.

The economic activities in this category could be associated with several NACE codes, in particular E38.32 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

The activity converts at least 50 %, in terms of weight, of the processed separately collected non-hazardous waste into secondary raw materials that are suitable for the substitution of virgin materials in production processes.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A

<sup>(219)</sup> Implementing Decision (EU) 2018/1147.

(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.
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#### 5.10. Landfill gas capture and utilisation

##### *Description of the activity*

Installation and operation of infrastructure for landfill <sup>(220)</sup> gas capture and utilisation in permanently closed landfills or landfill cells using new or supplementary dedicated technical facilities and equipment installed during or post landfill or landfill cell closure.

The economic activities in this category could be associated with NACE code E38.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

1. The landfill has not been opened after 8 July 2020.
2. The landfill or landfill cell where the gas capture system is newly installed, extended, or retrofitted is permanently closed and is not taking in further biodegradable waste <sup>(221)</sup>.
3. The produced landfill gas is used for the generation of electricity or heat as biogas <sup>(222)</sup>, or upgraded to biomethane for injection in the natural gas grid, or used as vehicle fuel or as feedstock in chemical industry.
4. Methane emissions from the landfill and leakages from the landfill gas collection and utilisation facilities are subject to control and monitoring procedures set out in Annex III to Council Directive 1999/31/EC <sup>(223)</sup>.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The permanent closure and remediation as well as the after-care of old landfills, where the landfill gas capture system is installed, are carried out in accordance with the following rules: (a) general requirements set out in Annex I to Directive 1999/31/EC; (b) control and monitoring procedures set out in Annex III to that Directive.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(220)</sup> 'Landfill' is defined in Article 2, point (g), of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1).

<sup>(221)</sup> As set out in Article 5(3) of Directive 1999/31/EC.

<sup>(222)</sup> 'Biogas' is defined in Article 2, point 28, of Directive (EU) 2018/2001.

<sup>(223)</sup> Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1).

### 5.11. Transport of CO<sub>2</sub>

#### *Description of the activity*

Transport of captured CO<sub>2</sub> via all modes.

Construction and operation of CO<sub>2</sub> pipelines and retrofit of gas networks where the main purpose is the integration of captured CO<sub>2</sub>.

The economic activities in this category could be associated with several NACE codes, in particular F42.21 and H49.50 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity in accordance with Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. The CO<sub>2</sub> transported from the installation where it is captured to the injection point does not lead to CO<sub>2</sub> leakages above 0.5 % of the mass of CO<sub>2</sub> transported.
2. The CO<sub>2</sub> is delivered to a permanent CO<sub>2</sub> storage site that meets the criteria for underground geological storage of CO<sub>2</sub> set out in Section 5.12 of this Annex; or to other transport modalities, which lead to permanent CO<sub>2</sub> storage site that meet those criteria.
3. Appropriate leak detection systems are applied and a monitoring plan is in place, with the report verified by an independent third party.
4. The activity may include the installation of assets that increase the flexibility and improve the management of an existing network..

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 5.12. Underground permanent geological storage of CO<sub>2</sub>

#### *Description of the activity*

Permanent storage of captured CO<sub>2</sub> in appropriate underground geological formations.

The economic activities in this category could be associated with NACE code E39.00 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

## Substantial contribution to climate change mitigation

1. Characterisation and assessment of the potential storage complex and surrounding area, or exploration within the meaning of Article 3, point (8), of Directive 2009/31/EC of the European Parliament and of the Council <sup>(224)</sup> is carried out in order to establish whether the geological formation is suitable for use as a CO<sub>2</sub> storage site.
2. For operation of underground geological CO<sub>2</sub> storage sites, including closure and post-closure obligations:
  - (a) appropriate leakage detection systems are implemented to prevent release during operation;
  - (b) a monitoring plan of the injection facilities, the storage complex, and, where appropriate, the surrounding environment is in place, with the regular reports checked by the competent national authority.
3. For the exploration and operation of storage sites within the Union, the activity complies with Directive 2009/31/EC. For the exploration and operation of storage sites in third countries, the activity complies with ISO 27914:2017 <sup>(225)</sup> for geological storage of CO<sub>2</sub>.

## Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with Directive 2009/31/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

## 6. TRANSPORT

6.1. **Passenger interurban rail transport***Description of the activity*

Purchase, financing, rental, leasing and operation of passenger transport using railway rolling stock on mainline networks, spread over an extensive geographic area, passenger transport by interurban railways and operation of sleeping cars or dining cars as an integrated operation of railway companies.

The economic activities in this category could be associated with several NACE codes, in particular H49.10, N77.39 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a) of this Section, that activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

<sup>(224)</sup> Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (OJ L 140, 5.6.2009, p. 114).

<sup>(225)</sup> ISO Standard 27914:2017, Carbon dioxide capture, transportation and geological storage — Geological storage (version of 4.6.2021: <https://www.iso.org/standard/64148.html>).

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity complies with one of the following criteria:

- (a) the trains and passenger coaches have zero direct (tailpipe) CO<sub>2</sub> emissions;
- (b) the trains and passenger coaches have zero direct (tailpipe) CO<sub>2</sub> emission when operated on a track with necessary infrastructure, and use a conventional engine where such infrastructure is not available (bimode).

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Do no significant harm ('DNSH')

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste in accordance with the waste hierarchy, in particular during maintenance.
(5) Pollution prevention and control	Engines for the propulsion of railway locomotives (RLL) and engines for the propulsion of railcars (RLR) comply with emission limits set out in Annex II to Regulation (EU) 2016/1628 of the European Parliament and of the Council <sup>(226)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	N/A

**6.2. Freight rail transport***Description of the activity*

Purchase, financing, leasing, rental and operation of freight transport on mainline rail networks as well as short line freight railroads.

The economic activities in this category could be associated with several NACE codes, in particular H49.20 and N77.39 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a) of this Section, that activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. The activity complies with one or both of the following criteria:
  - (a) the trains and wagons have zero direct tailpipe CO<sub>2</sub> emission;
  - (b) the trains and wagons have zero direct tailpipe CO<sub>2</sub> emission when operated on a track with necessary infrastructure, and use a conventional engine where such infrastructure is not available (bimode).
2. The trains and wagons are not dedicated to the transport of fossil fuels.

<sup>(226)</sup> Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (OJ L 252, 16.9.2016, p. 53).

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste, in accordance with the waste hierarchy, in particular during maintenance.
(5) Pollution prevention and control	Engines for the propulsion of railway locomotives (RLL) and engines for the propulsion of railcars (RLR) comply with emission limits set out in Annex II to Regulation (EU) 2016/1628.
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 6.3. Urban and suburban transport, road passenger transport

#### *Description of the activity*

Purchase, financing, leasing, rental and operation of urban and suburban transport vehicles for passengers and road passenger transport.

For motor vehicles, operation of vehicles designated as category M2 or M3, in accordance with Article 4(1) of Regulation (EU) 2018/858, for the provision of passenger transport.

The economic activities in this category may include operation of different modes of land transport, such as by motor bus, tram, streetcar, trolley bus, underground and elevated railways. This also includes town-to-airport or town-to-station lines and operation of funicular railways and aerial cableways where part of urban or suburban transit systems.

The economic activities in this category also include scheduled long-distance bus services, charters, excursions and other occasional coach services, airport shuttles (including within airports), operation of school buses and buses for the transport.

The economic activities in this category could be associated with several NACE codes, in particular H49.31, H49.3.9, N77.39 and N77.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

#### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity complies with the one of following criteria:

- (a) the activity provides urban or suburban passenger transport and its direct (tailpipe) CO<sub>2</sub> emissions are zero <sup>(227)</sup>;

<sup>(227)</sup> This includes Motor buses with type of bodywork classified as 'CE' (low-floor single-deck vehicle), 'CF' (low-floor double-deck vehicle), 'CG' (Articulated low-floor single-deck vehicle), 'CH' (Articulated low-floor double-deck vehicle), 'CI' (open top single deck vehicle) or 'CJ' (open top double deck vehicle), as set out in point 3 of part C of Annex I to Regulation (EU) 2018/858.



- (b) until 31 December 2025, the activity provides interurban passenger road transport using vehicles designated as categories M2 and M3 <sup>(228)</sup> that have a type of bodywork classified as ‘CA’ (single-deck vehicle), ‘CB’ (double-deck vehicle), ‘CC’ (single-deck articulated vehicle) or ‘CD’ (double-deck articulated vehicle) <sup>(229)</sup>, and comply with the latest EURO VI standard, i.e. both with the requirements of Regulation (EC) No 595/2009 and, from the time of the entry into force of amendments to that Regulation, in those amending acts, even before they become applicable, and with the latest step of the Euro VI standard set out in Table 1 of Appendix 9 to Annex I to Regulation (EU) No 582/2011 where the provisions governing that step have entered into force but have not yet become applicable for this type of vehicle <sup>(230)</sup>. Where such standard is not available, the direct CO<sub>2</sub> emissions of the vehicles are zero.

Do no significant harm (‘DNSH’)

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste, in accordance with the waste hierarchy, both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein).
(5) Pollution prevention and control	For road vehicles of categories M, tyres comply with external rolling noise requirements in the highest populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 of the European Parliament and of the Council <sup>(231)</sup> and as can be verified from the European Product Registry for Energy Labelling (EPREL).  Where applicable, vehicles comply with the requirements of the most recent applicable stage of the Euro VI heavy duty emission type-approval set out in accordance with Regulation (EC) No 595/2009.
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 6.4. Operation of personal mobility devices, cycle logistics

##### *Description of the activity*

Selling, purchasing, financing, leasing, renting and operation of personal mobility or transport devices where the propulsion comes from the physical activity of the user, from a zero-emissions motor, or a mix of zero-emissions motor and physical activity. This includes the provision of freight transport services by (cargo) bicycles.

The economic activities in this category could be associated with several NACE codes, in particular N77.11 and N77.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(228)</sup> As referred to in Article 4(1), point (a), of Regulation (EU) 2018/858.

<sup>(229)</sup> As set out in point 3 of part C of Annex I to Regulation (EU) 2018/858.

<sup>(230)</sup> Until 31/12/2021, the EURO VI, step E as set out in Regulation (EC) No 595/2009.

<sup>(231)</sup> Regulation (EU) 2020/740 of the European Parliament and of the Council of 25 May 2020 on the labelling of tyres with respect to fuel efficiency and other parameters, amending Regulation (EU) 2017/1369 and repealing Regulation (EC) No 1222/2009 (OJ L 177, 5.6.2020, p. 1).

*Technical screening criteria*

## Substantial contribution to climate change mitigation

1. The propulsion of personal mobility devices comes from the physical activity of the user, from a zero-emissions motor, or a mix of zero-emissions motor and physical activity.
2. The personal mobility devices are allowed to be operated on the same public infrastructure as bikes or pedestrians.

## Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste, in accordance with the waste hierarchy, both in the use phase (maintenance) and the end-of-life, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein).
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

**6.5. Transport by motorbikes, passenger cars and light commercial vehicles***Description of the activity*

Purchase, financing, renting, leasing and operation of vehicles designated as category M1<sup>(232)</sup>, N1<sup>(233)</sup>, both falling under the scope of Regulation (EC) No 715/2007 of the European Parliament and of the Council<sup>(234)</sup>, or L (2- and 3-wheel vehicles and quadricycles)<sup>(235)</sup>.

The economic activities in this category could be associated with several NACE codes, in particular H49.32, H49.39 and N77.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a)(ii) and (b) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

<sup>(232)</sup> As referred to in Article 4(1), point (a)(i), of Regulation (EU) 2018/858.

<sup>(233)</sup> As referred to in Article 4(1), point (b)(i), of Regulation (EU) 2018/858.

<sup>(234)</sup> Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ L 171, 29.6.2007, p. 1).

<sup>(235)</sup> As referred to in Article 4(1) of Regulation (EU) 2018/858.

Technical screening criteria

Substantial contribution to climate change mitigation

The activity complies with the following criteria:

- (a) for vehicles of category M1 and N1, both falling under the scope of Regulation (EC) No 715/2007:
- (i) until 31 December 2025, specific emissions of CO<sub>2</sub>, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, are lower than 50 g CO<sub>2</sub>/km (low- and zero-emission light-duty vehicles);
  - (ii) from 1 January 2026, specific emissions of CO<sub>2</sub>, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, are zero.
- (b) for vehicles of category L, the tailpipe CO<sub>2</sub> emissions equal to 0 g CO<sub>2</sub>e/km calculated in accordance with the emission test laid down in Regulation (EU) 168/2013.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	<p>Vehicles of categories M1 and N1 are both of the following:</p> <ul style="list-style-type: none"> <li>(a) reusable or recyclable to a minimum of 85 % by weight;</li> <li>(b) reusable or recoverable to a minimum of 95 % by weight <sup>(236)</sup>.</li> </ul> <p>Measures are in place to manage waste both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein), in accordance with the waste hierarchy.</p>
(5) Pollution prevention and control	<p>Vehicles comply with the requirements of the most recent applicable stage of the Euro 6 light-duty emission type-approval <sup>(237)</sup> set out in accordance with Regulation (EC) No. 715/2007.</p> <p>Vehicles comply with the emission thresholds for clean light-duty vehicles set out in Table 2 of the Annex to Directive 2009/33/EC of the European Parliament and of the Council <sup>(238)</sup>.</p> <p>For road vehicles of categories M and N, tyres comply with external rolling noise requirements in the highest populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 and as can be verified from the European Product Registry for Energy Labelling (EPREL).</p>

<sup>(236)</sup> As set out in Annex I of Directive 2005/64/EC of the European Parliament and of the Council of 26 October 2005 on the type-approval of motor vehicles with regard to their reusability, recyclability and recoverability and amending Council Directive 70/156/EEC (OJ L 310, 25.11.2005, p. 10).

<sup>(237)</sup> Commission Regulation (EU) 2018/1832 of 5 November 2018 amending Directive 2007/46/EC of the European Parliament and of the Council, Commission Regulation (EC) No 692/2008 and Commission Regulation (EU) 2017/1151 for the purpose of improving the emission type approval tests and procedures for light passenger and commercial vehicles, including those for in-service conformity and real-driving emissions and introducing devices for monitoring the consumption of fuel and electric energy (OJ L 301, 27.11.2018, p. 1).

<sup>(238)</sup> Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles (OJ L 120, 15.5.2009, p. 5).

	Vehicles comply with Regulation (EU) No 540/2014 of the European Parliament and of the Council <sup>(239)</sup> .
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 6.6. Freight transport services by road

##### *Description of the activity*

Purchase, financing, leasing, rental and operation of vehicles designated as category N1, N2 <sup>(240)</sup> or N3 <sup>(241)</sup> falling under the scope of EURO VI <sup>(242)</sup>, step E or its successor, for freight transport services by road.

The economic activities in this category could be associated with several NACE codes, in particular H49.4.1, H53.10, H53.20 and N77.12 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (1)(a), (1)(b) or (1)(c)(i) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. The activity complies with one of the following criteria:

- (a) vehicles of category N1 have zero direct (tailpipe) CO<sub>2</sub> emissions;
- (b) vehicles of category N2 and N3 with a technically permissible maximum laden mass not exceeding 7,5 tonnes are 'zero-emission heavy-duty vehicles' as defined in Article 3, point (11), of Regulation (EU) 2019/1242;
- (c) vehicles of category N2 and N3 with a technically permissible maximum laden mass exceeding 7,5 tonnes are one of the following:
  - (i) 'zero-emission heavy-duty vehicles', as defined in Article 3, point (11), of Regulation (EU) 2019/1242;
  - (ii) where technologically and economically not feasible to comply with the criterion in point (i), 'low-emission heavy-duty vehicles' as defined in Article 3, point (12), of that Regulation.

2. Vehicles are not dedicated to the transport of fossil fuels.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A

<sup>(239)</sup> Regulation (EU) No 540/2014 of the European Parliament and of the Council of 16 April 2014 on the sound level of motor vehicles and of replacement silencing systems, and amending Directive 2007/46/EC and repealing Directive 70/157/EEC (OJ L 158, 27.5.2014, p. 131).

<sup>(240)</sup> As referred to in Article 4(1), point (b)(ii), of Regulation (EU) 2018/858.

<sup>(241)</sup> As referred to in Article 4(1), point (b)(iii), of Regulation (EU) 2018/858.

<sup>(242)</sup> As set out in Regulation (EC) No 595/2009.

(4) Transition to a circular economy	Vehicles of category N1, N2 and N3 are both of the following: (a) reusable or recyclable to a minimum of 85 % by weight; (b) reusable or recoverable to a minimum of 95 % by weight <sup>(243)</sup> . Measures are in place to manage waste both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein), in accordance with the waste hierarchy.
(5) Pollution prevention and control	For road vehicles of categories M and N, tyres comply with external rolling noise requirements in the highest populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 and as can be verified from the European Product Registry for Energy Labelling (EPREL). Vehicles comply with the requirements of the most recent applicable stage of the Euro VI heavy duty emission type-approval <sup>(244)</sup> set out in accordance with Regulation (EC) No 595/2009. Vehicles comply with Regulation (EU) No 540/2014.
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 6.7. Inland passenger water transport

##### *Description of the activity*

Purchase, financing, leasing, rental and operation of passenger vessels on inland waters, involving vessels that are not suitable for sea transport.

The economic activities in this category could be associated with NACE code H50.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity complies with one of the following criteria:

- (a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emissions;
- (b) until 31 December 2025, hybrid and dual fuel vessels derive at least 50 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation.

##### Do no significant harm ('DNSH')

- |                               |  |
|-------------------------------|--|
| (2) Climate change adaptation | The activity complies with the criteria set out in Appendix A to this Annex. |
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<sup>(243)</sup> As set out in Annex I to Directive 2005/64/EC.

<sup>(244)</sup> Commission Regulation (EU) No 582/2011 of 25 May 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI) and amending Annexes I and III to Directive 2007/46/EC of the European Parliament and of the Council (OJ L 167, 25.6.2011, p. 1).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy, including the control and management of hazardous materials on board of ships and ensuring their safe recycling.  For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.
(5) Pollution prevention and control	Engines in vessels comply with emission limits set out in Annex II to Regulation (EU) 2016/1628 (including vessels meeting those limits without type-approved solutions such as through after-treatment).
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 6.8. Inland freight water transport

#### *Description of the activity*

Purchase, financing, leasing, rental and operation of freight vessels on inland waters, involving vessels that are not suitable for sea transport.

The economic activities in this category could be associated with several NACE code H50.4 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

#### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

1. The activity complies with one or both of the following criteria:

- (a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emission;
- (b) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, the vessels have direct (tailpipe) emissions of CO<sub>2</sub> per tonne kilometre (g CO<sub>2</sub>/tkm), calculated (or estimated in case of new vessels) using the Energy Efficiency Operational Indicator<sup>(245)</sup>, 50 % lower than the average reference value for emissions of CO<sub>2</sub> defined for heavy duty vehicles (vehicle subgroup 5- LH) in accordance with Article 11 of Regulation 2019/1242.

2. Vessels are not dedicated to the transport of fossil fuels.

#### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(245)</sup> The Energy Efficiency Operational Indicator is defined as the ratio of mass of CO<sub>2</sub> emitted per unit of transport work. It is a representative value of the energy efficiency of the ship operation over a consistent period which represents the overall trading pattern of the vessel. Guidance on how to calculate this indicator is provided in the document MEPC.1/Circ. 684 from IMO.

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy, including the control and management of hazardous materials on board of ships and ensuring their safe recycling.  For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.
(5) Pollution prevention and control	Vessels comply with the emission limits set out in Annex II to Regulation (EU) 2016/1628 (including vessels meeting those limits without type-approved solutions such as through after-treatment).
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 6.9. Retrofitting of inland water passenger and freight transport

#### *Description of the activity*

Retrofit and upgrade of vessels for transport of freight or passengers on inland waters, involving vessels that are not suitable for sea transport.

The economic activities in this category could be associated several NACE codes, in particular H50.4, H50.30 and C33.15 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

1. Until 31 December 2025, the retrofitting activity reduces fuel consumption of the vessel by at least 10 % expressed in litre of fuel per tonne kilometre, as demonstrated by a comparative calculation for the representative navigation areas (including representative load profiles) in which the vessel is to operate or by means of the results of model tests or simulations.

2. Vessels retrofitted or upgraded are not dedicated to transport of fossil fuels.

#### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(245)</sup> The Energy Efficiency Operational Indicator is defined as the ratio of mass of CO<sub>2</sub> emitted per unit of transport work. It is a representative value of the energy efficiency of the ship operation over a consistent period which represents the overall trading pattern of the vessel. Guidance on how to calculate this indicator is provided in the document MEPC.1/Circ. 684 from IMO.



(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy, including the control and management of hazardous materials on board of ships and ensuring their safe recycling.
(5) Pollution prevention and control	Vessels comply with emission limits set out in Annex II to Regulation (EU) 2016/1628 (including vessels meeting those limits without type-approved solutions such as through after-treatment).
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 6.10. Sea and coastal freight water transport, vessels for port operations and auxiliary activities

##### *Description of the activity*

Purchase, financing, chartering (with or without crew) and operation of vessels designed and equipped for transport of freight or for the combined transport of freight and passengers on sea or coastal waters, whether scheduled or not. Purchase, financing, renting and operation of vessels required for port operations and auxiliary activities, such as tugboats, mooring vessels, pilot vessels, salvage vessels and ice-breakers.

The economic activities in this category could be associated with several NACE codes, in particular H50.2, H52.22 and N77.34 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point 1 (a) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. The activity complies with one or more of the following criteria:

- (a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emissions;
- (b) until 31 December 2025, hybrid and dual fuel vessels derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;
- (c) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, and only where it can be proved that the vessels are used exclusively for operating coastal and short sea services designed to enable modal shift of freight currently transported by land to sea, the vessels have direct (tailpipe) CO<sub>2</sub> emissions, calculated using the International Maritime Organization (IMO) Energy Efficiency Design Index (EEDI) <sup>(246)</sup>, 50 % lower than the average reference CO<sub>2</sub> emissions value defined for heavy duty vehicles (vehicle sub group 5-LH) in accordance with Article 11 of Regulation 2019/1242;

<sup>(246)</sup> Energy Efficiency Design Index (version of 4.6.2021: <http://www.imo.org/fr/MediaCentre/HotTopics/GHG/Pages/EEDI.aspx>).

- (d) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022 <sup>(247)</sup> if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from renewable sources <sup>(248)</sup>.

2. Vessels are not dedicated to the transport of fossil fuels.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy.</p> <p>For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.</p> <p>For existing ships above 500 gross tonnage and the new-built ones replacing them, the activity complies with the requirements of Regulation (EU) No 1257/2013 of the European Parliament and of the Council <sup>(249)</sup> relating to the inventory of hazardous materials. The scrap ships are recycled in facilities included on the European List of ship recycling facilities as laid down in Commission Decision 2016/2323 <sup>(250)</sup>.</p> <p>The activity complies with Directive (EU) 2019/883 of the European Parliament and of the Council <sup>(251)</sup> as regards the protection of the marine environment against the negative effects from discharges of waste from ships.</p> <p>The ship is operated in accordance with Annex V to the International Convention for the Prevention of Pollution from Ships of 2 November 1973 (the IMO MARPOL Convention), in particular with a view to producing reduced quantities of waste and to reducing legal discharges, by managing its waste in a sustainable and environmentally sound manner.</p>

<sup>(247)</sup> EEDI requirements as agreed by the Marine Environment Protection Committee of the International Maritime Organization on its seventy-fifth session. Vessels that fall into the ship types set out in MARPOL Annex VI Regulation 2, but are not considered as new ship under that regulation may provide attained EEDI value calculated on a voluntary basis in line with MARPOL Annex VI Chapter 4 and have those calculations verified in line with MARPOL Annex VI, Chapter 2.

<sup>(248)</sup> Fuels that meet the technical screening criteria specified in sections 3.10 and 4.13 of this Annex.

<sup>(249)</sup> Regulation (EU) No 1257/2013 of the European Parliament and of the Council of 20 November 2013 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC (OJ L 330, 10.12.2013, p. 1).

<sup>(250)</sup> Commission Implementing Decision 2016/2323 establishing the European List of ship recycling facilities pursuant to Regulation (EU) No 1257/2013 of the European Parliament and of the Council on ship recycling (OJ L 345, 20.12.2016, p. 119).

<sup>(251)</sup> Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC (OJ L 151, 7.6.2019, p. 116).

(5) Pollution prevention and control	<p>As regards the reduction of sulphur oxides emissions and particulate matters, vessels comply with Directive (EU) 2016/802 of the European Parliament and of the Council <sup>(252)</sup>, and with Regulation 14 <sup>(253)</sup> of Annex VI to the IMO MARPOL Convention. Sulphur in fuel content does not exceed 0,5 % in mass (the global sulphur limit) and 0,1 % in mass in emission control area (ECA) designated in the North and Baltic Seas by the IMO <sup>(254)</sup>.</p> <p>As regards nitrogen oxides (NO<sub>x</sub>) emissions, vessels comply with Regulation 13 <sup>(255)</sup> of Annex VI to IMO MARPOL Convention. Tier II NO<sub>x</sub> requirement applies to ships constructed after 2011. Only while operating in NO<sub>x</sub> emission control areas established under IMO rules, ships constructed after 1 January 2016 comply with stricter engine requirements (Tier III) reducing NO<sub>x</sub> emissions <sup>(256)</sup>.</p> <p>Discharges of black and grey water comply with Annex IV to the IMO MARPOL Convention.</p> <p>Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001 <sup>(257)</sup>.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>Releases of ballast water containing non-indigenous species are prevented in line with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).</p> <p>Measures are in place to prevent the introduction of non-indigenous species by biofouling of hull and niche areas of ships taking into account the IMO Biofouling Guidelines <sup>(258)</sup>.</p> <p>Noise and vibrations are limited by using noise reducing propellers, hull design or on-board machinery in line with the guidance given in the IMO Guidelines for the Reduction of Underwater Noise <sup>(259)</sup>.</p> <p>In the Union, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity), 2 (non-indigenous species), 6 (seabed integrity), 8 (contaminants), 10 (marine litter), 11 (Noise/Energy) and as set out in Commission Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors, as applicable.</p>

<sup>(252)</sup> Directive (EU) 2016/802 of the European Parliament and of the Council of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels (OJ L 132, 21.5.2016, p. 58).

<sup>(253)</sup> (version of 4.6.2021: [http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Sulphur-oxides-\(SO<sub>x</sub>\)-%E2%80%93-Regulation-14.aspx](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Sulphur-oxides-(SO<sub>x</sub>)-%E2%80%93-Regulation-14.aspx)).

<sup>(254)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

<sup>(255)</sup> (version of 4.6.2021: [http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Nitrogen-oxides-\(NO<sub>x</sub>\)-Regulation-13.aspx](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Nitrogen-oxides-(NO<sub>x</sub>)-Regulation-13.aspx)).

<sup>(256)</sup> In Union seas, the requirement is applicable as of 2021 in the Baltic and North Seas.

<sup>(257)</sup> International Convention on the Control of Harmful Anti-fouling Systems on Ships of 5 October 2001.

<sup>(258)</sup> IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species, resolution MEPC.207(62).

<sup>(259)</sup> IMO Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, (MEPC.1/Circ.833).

### 6.11. Sea and coastal passenger water transport

#### *Description of the activity*

Purchase, financing, chartering (with or without crew) and operation of vessels designed and equipped for performing passenger transport, on sea or coastal waters, whether scheduled or not. The economic activities in this category include operation of ferries, water taxis and excursions, cruise or sightseeing boats.

The activity could be associated with several NACE codes, in particular H50.10, N77.21 and N77.34 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category does not fulfil the substantial contribution criterion specified in point (a) of this Section, the activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852, provided it complies with the remaining technical screening criteria set out in this Section.

#### *Technical screening criteria*

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#### Substantial contribution to climate change mitigation

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The activity complies with one or more of the following criteria:

- (a) the vessels have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (b) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, hybrid and dual fuel vessels derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;
  - (c) where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) <sup>(260)</sup> value 10 % below the EEDI requirements applicable on 1 April 2022 <sup>(261)</sup>, if the vessels are able to run on zero direct (tailpipe) emission fuels or on fuels from renewable sources <sup>(262)</sup>.
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#### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy.  For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.  For existing ships above 500 gross tonnage and the new-built ones replacing them, the activity complies with the requirements of Regulation (EU) No 1257/2013 relating to the inventory of hazardous materials. The scrap ships are recycled in facilities included on the European List of ship recycling facilities as laid down in Implementing Decision 2016/2323.

<sup>(260)</sup> Energy Efficiency Design Index (version of 4.6.2021: <http://www.imo.org/fr/MediaCentre/HotTopics/GHG/Pages/EEDI.aspx>).

<sup>(261)</sup> EEDI requirements as agreed by the Marine Environment Protection Committee of the International Maritime Organization on its seventy-fifth session. Vessels that fall into the ship types set out in MARPOL Annex VI Regulation 2 but are not considered as new ship under that regulation may provide attained EEDI value calculated on a voluntary basis in line with MARPOL Annex VI Chapter 4 and have those calculations verified in line with MARPOL Annex VI Chapter 2.

<sup>(262)</sup> Fuels that meet the technical screening criteria specified in sections 3.10 and 4.13 of this Annex.

	<p>The activity complies with Directive (EU) 2019/883 as regards the protection of the marine environment against the negative effects from discharges of waste from ships.</p> <p>The ship is operated in accordance with Annex V to the IMO MARPOL Convention, in particular with a view to producing reduced quantities of waste and to reducing legal discharges, by managing its waste in a sustainable and environmentally sound manner.</p>
(5) Pollution prevention and control	<p>As regards the reduction of sulphur oxides emissions and particulate matters, vessels comply with Directive (EU) 2016/802, and with Regulation 14 of Annex VI to the IMO MARPOL Convention. Sulphur in fuel content does not exceed 0,5 % in mass (the global sulphur limit) and 0,1 % in mass in emission control area (ECA) designated in the North and Baltic Seas by the IMO <sup>(263)</sup>.</p> <p>As regards nitrogen oxides (NO<sub>x</sub>) emissions, vessels comply with Regulation 13 of Annex VI to IMO MARPOL Convention. Tier II NO<sub>x</sub> requirement applies to ships constructed after 2011. Only while operating in NO<sub>x</sub> emission control areas established under IMO rules, ships constructed after 1 January 2016 comply with stricter engine requirements (Tier III) reducing NO<sub>x</sub> emissions <sup>(264)</sup>.</p> <p>Discharges of black and grey water comply with Annex IV to the IMO MARPOL Convention.</p> <p>Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>Releases of ballast water containing non-indigenous species are prevented in line with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).</p> <p>Measures are in place to prevent the introduction of non-indigenous species by biofouling of hull and niche areas of ships taking into account the IMO Biofouling Guidelines <sup>(265)</sup>.</p> <p>Noise and vibrations are limited by using noise reducing propellers, hull design or on-board machinery in line with the guidance given in the IMO Guidelines for the Reduction of Underwater Noise <sup>(266)</sup>.</p> <p>In the Union, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity), 2 (non-indigenous species), 6 (seabed integrity), 8 (contaminants), 10 (marine litter), 11 (Noise/Energy) and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors, as applicable.</p>

<sup>(263)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

<sup>(264)</sup> In Union seas, the requirement is applicable as of 2021 in the Baltic and North Seas.

<sup>(265)</sup> IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species resolution MEPC.207(62).

<sup>(266)</sup> IMO Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, (MEPC.1/Circ.833).

## 6.12. Retrofitting of sea and coastal freight and passenger water transport

### *Description of the activity*

Retrofit and upgrade of vessels designed and equipped for the transport of freight or passengers on sea or coastal waters, and of vessels required for port operations and auxiliary activities, such as tugboats, mooring vessels, pilot vessels, salvage vessels and ice-breakers.

The economic activities in this category could be associated with NACE codes H50.10, H50.2, H52.22, C33.15, N77.21 and N.77.34 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

### *Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. Until 31 December 2025, the retrofitting activity reduces fuel consumption of the vessel by at least 10 % expressed in grams of fuel per deadweight tons per nautical mile, as demonstrated by computational fluid dynamics (CFD), tank tests or similar engineering calculations.
  
  2. Vessels are not dedicated to the transport of fossil fuels.
- 

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy.</p> <p>For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.</p> <p>For existing ships above 500 gross tonnage and the new-built ones replacing them, the activity complies with the requirements of Regulation (EU) No 1257/2013 relating to the inventory of hazardous materials. The scrap ships are recycled in facilities included on the European List of ship recycling facilities as laid down in Commission Decision 2016/2323.</p> <p>The activity complies with Directive (EU) 2019/883 as regards the protection of the marine environment against the negative effects from discharges of waste from ships.</p> <p>The ship is operated in accordance with Annex V to the IMO MARPOL Convention, in particular with a view to producing reduced quantities of waste and to reducing legal discharges, by managing its waste in a sustainable and environmentally sound manner.</p>

<sup>(263)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

(5) Pollution prevention and control	<p>As regards the reduction of sulphur oxides emissions and particulate matters, vessels comply with Directive (EU) 2016/802, and with Regulation 14 of Annex VI to the IMO MARPOL Convention. Sulphur in fuel content does not exceed 0,5 % in mass (the global sulphur limit) and 0,1 % in mass in emission control area (ECA) designated in the North and Baltic Seas by the IMO <sup>(267)</sup>.</p> <p>As regards nitrogen oxides (NO<sub>x</sub>) emissions, vessels comply with Regulation 13 of Annex VI to IMO MARPOL Convention. Tier II NO<sub>x</sub> requirement applies to ships constructed after 2011. Only while operating in NO<sub>x</sub> emission control areas established under IMO rules, ships constructed after 1 January 2016 comply with stricter engine requirements (Tier III) reducing NO<sub>x</sub> emissions <sup>(268)</sup>.</p> <p>Discharges of black and grey water comply with Annex IV to the IMO MARPOL Convention.</p> <p>Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>Releases of ballast water containing non-indigenous species are prevented in line with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).</p> <p>Measures are in place to prevent the introduction of non-indigenous species by biofouling of hull and niche areas of ships taking into account the IMO Biofouling Guidelines <sup>(269)</sup>.</p> <p>Noise and vibrations are limited by using noise reducing propellers, hull design or on-board machinery in line with the guidance given in the IMO Guidelines for the Reduction of Underwater Noise <sup>(270)</sup>.</p> <p>In the Union, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity), 2 (non-indigenous species), 6 (seabed integrity), 8 (contaminants), 10 (marine litter), 11 (Noise/Energy) and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors, as applicable.</p>

### 6.1.3. Infrastructure for personal mobility, cycle logistics

#### *Description of the activity*

Construction, modernisation, maintenance and operation of infrastructure for personal mobility, including the construction of roads, motorways bridges and tunnels and other infrastructure that are dedicated to pedestrians and bicycles, with or without electric assist.

<sup>(267)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

<sup>(268)</sup> In Union seas, the requirement is applicable as of 2021 in the Baltic and North Seas.

<sup>(269)</sup> IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species resolution MEPC.207(62).

<sup>(270)</sup> IMO Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, (MEPC.1/Circ.833).



The economic activities in this category could be associated with several NACE codes, in particular F42.11, F42.12, F43.21, F71.1 and F71.20 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### Technical screening criteria

##### Substantial contribution to climate change mitigation

The infrastructure that is constructed and operated is dedicated to personal mobility or cycle logistics: pavements, bike lanes and pedestrian zones, electrical charging and hydrogen refuelling installations for personal mobility devices.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Commission Decision 2000/532/EC <sup>(271)</sup> ) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(272)</sup> . Operators limit waste generation in processes related to construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol, taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(271)</sup> Commission Decision 2000/532/EC of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (OJ L 226, 6.9.2000, p. 3).

<sup>(272)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

**6.14. Infrastructure for rail transport**

*Description of the activity*

Construction, modernisation, operation and maintenance of railways and subways as well as bridges and tunnels, stations, terminals, rail service facilities <sup>(273)</sup>, safety and traffic management systems including the provision of architectural services, engineering services, drafting services, building inspection services and surveying and mapping services and the like as well as the performance of physical, chemical and other analytical testing of all types of materials and products.

The economic activities in this category could be associated with several NACE codes, in particular F42.12, F42.13, M71.12, M71.20, F43.21, and H52.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. The activity complies with one of the following criteria:

- (a) the infrastructure (as defined in Annex II.2 to Directive (EU) 2016/797 of the European Parliament and of the Council <sup>(274)</sup>) is either:
  - (i) electrified trackside infrastructure and associated subsystems: infrastructure, energy, on-board control-command and signalling, and trackside control-command and signalling subsystems as defined in Annex II.2 to Directive (EU)2016/797;
  - (ii) new and existing trackside infrastructure and associated subsystems where there is a plan for electrification as regards line tracks, and, to the extent necessary for electric train operations, as regards sidings, or where the infrastructure will be fit for use by zero tailpipe CO<sub>2</sub> emission trains within 10 years from the beginning of the activity: infrastructure, energy, on-board control-command and signalling, and trackside control-command and signalling subsystems as defined in Annex II.2 to Directive (EU)2016/797;
  - (iii) until 2030, existing trackside infrastructure and associated subsystems that are not part of the TEN-T network <sup>(275)</sup> and its indicative extensions to third countries, nor any nationally, supranationally or internationally defined network of major rail lines: infrastructure, energy, on-board control-command and signalling, and trackside control-command and signalling subsystems as defined in Annex II.2 to Directive (EU) 2016/797;
- (b) the infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading and transshipment of goods;
- (c) infrastructure and installations are dedicated to the transfer of passengers from rail to rail or from other modes to rail.

2. The infrastructure is not dedicated to the transport or storage of fossil fuels.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(273)</sup> In accordance with Article 3, point (11), of Directive 34/2012/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (OJ L 343, 14.12.2012, p. 32).

<sup>(274)</sup> Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union (OJ L 138, 26.5.2016, p. 44).

<sup>(275)</sup> In accordance with Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU (OJ L 348, 20.12.2013, p. 1).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(276)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Where appropriate, given the sensitivity of the area affected, in particular in terms of the size of population affected, noise and vibrations from use of infrastructure are mitigated by introducing open trenches, wall barriers, or other measures and comply with Directive 2002/49/EC of the European Parliament and of the Council <sup>(277)</sup> .  Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 6.15. Infrastructure enabling low-carbon road transport and public transport

##### *Description of the activity*

Construction, modernisation, maintenance and operation of infrastructure that is required for zero tailpipe CO<sub>2</sub> operation of zero-emissions road transport, as well as infrastructure dedicated to transshipment, and infrastructure required for operating urban transport.

The economic activities in this category could be associated with several NACE codes, in particular F42.11, F42.13, F71.1 and F71.20 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

1. The activity complies with one or more of the following criteria:

- (a) the infrastructure is dedicated to the operation of vehicles with zero tailpipe CO<sub>2</sub> emissions: electric charging points, electricity grid connection upgrades, hydrogen fuelling stations or electric road systems (ERS);

<sup>(276)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

<sup>(277)</sup> Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise (OJ L 189, 18.7.2002, p. 12).

- (b) the infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading and transshipment of goods;
- (c) the infrastructure and installations are dedicated to urban and suburban public passenger transport, including associated signalling systems for metro, tram and rail systems.

2. The infrastructure is not dedicated to the transport or storage of fossil fuels.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(278)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Where relevant, noise and vibrations from use of infrastructure are mitigated by introducing open trenches, wall barriers or other measures and comply with Directive 2002/49/EC.  Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.  Where relevant, maintenance of vegetation along road transport infrastructure ensures that invasive species do not spread.  Mitigation measures have been implemented to avoid wildlife collisions.

#### 6.16. Infrastructure enabling low carbon water transport

##### *Description of the activity*

Construction, modernisation, operation and maintenance of infrastructure that is required for zero tailpipe CO<sub>2</sub> operation of vessels or the port's own operations, as well as infrastructure dedicated to transshipment.

<sup>(278)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

The economic activities in this category could be associated with several NACE codes, in particular F42.91, F71.1 or F71.20 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### Technical screening criteria

#### Substantial contribution to climate change mitigation

1. The activity complies with one or more of the following criteria:
  - (a) the infrastructure is dedicated to the operation of vessels with zero direct (tailpipe) CO<sub>2</sub> emissions: electricity charging, hydrogen-based refuelling;
  - (b) the infrastructure is dedicated to the provision of shore-side electrical power to vessels at berth;
  - (c) the infrastructure is dedicated to the performance of the port's own operations with zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (d) the infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading and transshipment of goods.
2. The infrastructure is not dedicated to the transport or storage of fossil fuels.

#### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(279)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Measures are taken to reduce noise, vibration, dust and pollutant emissions during construction maintenance works.

<sup>(279)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.
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#### 6.17. Low carbon airport infrastructure

##### *Description of the activity*

Construction, modernisation, maintenance and operation of infrastructure that is required for zero tailpipe CO<sub>2</sub> operation of aircraft or the airport's own operations, as well as for provision of fixed electrical ground power and preconditioned air to stationary aircraft.

The economic activities in this category could be associated with several NACE codes, in particular F41.20 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity is an enabling activity as referred to in Article 10(1) point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

Substantial contribution to climate change mitigation

1. The activity complies with one or more of the following criteria:

- (a) the infrastructure is dedicated to the operation of aircraft with zero tailpipe CO<sub>2</sub> emissions: electricity charging and hydrogen refuelling;
- (b) the infrastructure is dedicated to the provision of fixed electrical ground power and preconditioned air to stationary aircrafts;
- (c) the infrastructure is dedicated to the zero direct emissions performance of the airport's own operations: electric charging points, electricity grid connection upgrades, hydrogen refuelling stations.

2. The infrastructure is not dedicated to the transport or storage of fossil fuels.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(280)</sup> . Operators limit waste generation in processes related to construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.

<sup>(280)</sup> EU Construction and Demolition Waste Protocol ([https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

(5) Pollution prevention and control	Measures are taken to reduce noise, vibration, dust and pollutant emissions during construction maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

## 7. CONSTRUCTION AND REAL ESTATE ACTIVITIES

### 7.1. Construction of new buildings

#### *Description of the activity*

Development of building projects for residential and non-residential buildings by bringing together financial, technical and physical means to realise the building projects for later sale as well as the construction of complete residential or non-residential buildings, on own account for sale or on a fee or contract basis.

The economic activities in this category could be associated with several NACE codes, in particular F41.1 and F41.2, including also activities under F43, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

Constructions of new buildings for which:

1. The Primary Energy Demand (PED) <sup>(281)</sup>, defining the energy performance of the building resulting from the construction, is at least 10 % lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national measures implementing Directive 2010/31/EU of the European Parliament and of the Council <sup>(282)</sup>. The energy performance is certified using an as built Energy Performance Certificate (EPC).
2. For buildings larger than 5 000 m<sup>2</sup> <sup>(283)</sup>, upon completion, the building resulting from the construction undergoes testing for air-tightness and thermal integrity <sup>(284)</sup>, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients. As an alternative; where robust and traceable quality control processes are in place during the construction process this is acceptable as an alternative to thermal integrity testing.
3. For buildings larger than 5 000 m<sup>2</sup> <sup>(285)</sup>, the life-cycle Global Warming Potential (GWP) <sup>(286)</sup> of the building resulting from the construction has been calculated for each stage in the life cycle and is disclosed to investors and clients on demand.

<sup>(281)</sup> The calculated amount of energy needed to meet the energy demand associated with the typical uses of a building expressed by a numeric indicator of total primary energy use in kWh/m<sup>2</sup> per year and based on the relevant national calculation methodology and as displayed on the Energy Performance Certificate (EPC).

<sup>(282)</sup> Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (OJ L 153, 18.6.2010, p. 13).

<sup>(283)</sup> For residential buildings, the testing is made for a representative set of dwelling/apartment types.

<sup>(284)</sup> The testing is carried out in accordance with EN13187 (Thermal Performance of Buildings - Qualitative Detection of Thermal Irregularities in Building Envelopes - Infrared Method) and EN 13829 (Thermal performance of buildings. Determination of air permeability of buildings. Fan pressurisation method) or equivalent standards accepted by the respective building control body where the building is located.

<sup>(285)</sup> For residential buildings, the calculation and disclosure are made for a representative set of dwelling/apartment types.

<sup>(286)</sup> The GWP is communicated as a numeric indicator for each life cycle stage expressed as kgCO<sub>2</sub>e/m<sup>2</sup> (of useful internal floor area) averaged for one year of a reference study period of 50 years. The data selection, scenario definition and calculations are carried out in accordance with EN 15978 (BS EN 15978:2011. Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method). The scope of building elements and technical equipment is as defined in the Level(s) common EU framework for indicator 1.2. Where a national calculation tool exists, or is required for making disclosures or for obtaining building permits, the respective tool may be used to provide the required disclosure. Other calculation tools may be used if they fulfil the minimum criteria laid down by the Level(s) common EU framework (version of 4.6.2021: <https://susproc.jrc.ec.europa.eu/product-bureau/product-groups/412/documents>), see indicator 1.2 user manual.



Do no significant harm ('DNSH')	
(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	<p>Where installed, except for installations in residential building units, the specified water use for the following water appliances are attested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications laid down in Appendix E to this Annex:</p> <p>(a) wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</p> <p>(b) showers have a maximum water flow of 8 litres/min;</p> <p>(c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres;</p> <p>(d) urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</p> <p>To avoid impact from the construction site, the activity complies with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(287)</sup>. Operators limit waste generation in processes related to construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.</p> <p>Building designs and construction techniques support circularity and in particular demonstrate, with reference to ISO 20887 <sup>(288)</sup> or other standards for assessing the disassembly or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</p>
(5) Pollution prevention and control	Building components and materials used in the construction comply with the criteria set out in Appendix C to this Annex.

<sup>(287)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

<sup>(288)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).

	<p>Building components and materials used in the construction that may come into contact with occupiers <sup>(289)</sup> emit less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or component upon testing in accordance with the conditions specified in Annex XVII to Regulation (EC) No 1907/2006 and less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component, upon testing in accordance with CEN/EN 16516 <sup>(290)</sup> or ISO 16000-3:2011 <sup>(291)</sup> or other equivalent standardised test conditions and determination methods <sup>(292)</sup>.</p> <p>Where the new construction is located on a potentially contaminated site (brownfield site), the site has been subject to an investigation for potential contaminants, for example using standard ISO 18400 <sup>(293)</sup>.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p> <p>The new construction is not built on one of the following:</p> <p>(a) arable land and crop land with a moderate to high level of soil fertility and below ground biodiversity as referred to the EU LUCAS survey <sup>(294)</sup>;</p> <p>(b) greenfield land of recognised high biodiversity value and land that serves as habitat of endangered species (flora and fauna) listed on the European Red List <sup>(295)</sup> or the IUCN Red List <sup>(296)</sup>;</p> <p>(c) land matching the definition of forest as set out in national law used in the national greenhouse gas inventory, or where not available, is in accordance with the FAO definition of forest <sup>(297)</sup>.</p>

## 7.2. Renovation of existing buildings

### *Description of the activity*

Construction and civil engineering works or preparation thereof.

The economic activities in this category could be associated with several NACE codes, in particular F41 and F43 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

<sup>(289)</sup> Applying to paints and varnishes, ceiling tiles, floor coverings, including associated adhesives and sealants, internal insulation and interior surface treatments, such as those to treat damp and mould.

<sup>(290)</sup> CEN/TS 16516: 2013, Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air.

<sup>(291)</sup> ISO 16000-3:2011, Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method (version of 4.6.2021: <https://www.iso.org/standard/51812.html>).

<sup>(292)</sup> The emissions thresholds for carcinogenic volatile organic compounds relate to a 28-day test period.

<sup>(293)</sup> ISO 18400 series on Soil quality — Sampling

<sup>(294)</sup> JRC ESDCA, LUCAS: Land Use and Coverage Area frame Survey version of 4.6.2021: <https://esdac.jrc.ec.europa.eu/projects/lucas>

<sup>(295)</sup> IUCN, *The IUCN European Red List of Threatened Species* (version of 4.6.2021: <https://www.iucn.org/regions/europe/our-work/biodiversity-conservation/european-red-list-threatened-species>).

<sup>(296)</sup> IUCN, *The IUCN Red List of Threatened Species* (version of 4.6.2021: <https://www.iucnredlist.org>).

<sup>(297)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions.(version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

*Technical screening criteria*


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Substantial contribution to climate change mitigation

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The building renovation complies with the applicable requirements for major renovations <sup>(298)</sup>.

Alternatively, it leads to a reduction of primary energy demand (PED) of at least 30 % <sup>(299)</sup>.

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Do no significant harm ('DNSH')

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(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	<p>Where installed as part of the renovation works, except for renovation works in residential building units, the specified water use for the following water appliances is attested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications laid down in Appendix E to this Annex:</p> <ul style="list-style-type: none"> <li>(a) wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</li> <li>(b) showers have a maximum water flow of 8 litres/min;</li> <li>(c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres;</li> <li>(d) urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</li> </ul>
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(300)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.

<sup>(298)</sup> As set in the applicable national and regional building regulations for 'major renovation' implementing Directive 2010/31/EU. The energy performance of the building or the renovated part that is upgraded meets cost-optimal minimum energy performance requirements in accordance with the respective directive.

<sup>(299)</sup> The initial primary energy demand and the estimated improvement is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method, and validated through an Energy Performance Certificate. The 30 % improvement results from an actual reduction in primary energy demand (where the reductions in net primary energy demand through renewable energy sources are not taken into account), and can be achieved through a succession of measures within a maximum of three years.

<sup>(300)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

	Building designs and construction techniques support circularity and in particular demonstrate, with reference to ISO 20887 <sup>(301)</sup> or other standards for assessing the disassembly or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.
(5) Pollution prevention and control	<p>Building components and materials used in the construction complies with the criteria set out in Appendix C to this Annex.</p> <p>Building components and materials used in the building renovation that may come into contact with occupiers<sup>(302)</sup> emit less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or component upon testing in accordance with the conditions specified in Annex XVII to Regulation (EC) No 1907/2006 and less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component, upon testing in accordance with CEN/EN 16516 or ISO 16000-3:2011<sup>(303)</sup> or other equivalent standardised test conditions and determination methods<sup>(304)</sup>.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>
(6) Protection and restoration of biodiversity and ecosystems	N/A.

### 7.3. Installation, maintenance and repair of energy efficiency equipment

#### *Description of the activity*

Individual renovation measures consisting in installation, maintenance or repair of energy efficiency equipment.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27, C28, S95.21, S95.22, C33.12 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity consists in one of the following individual measures provided that they comply with minimum requirements set for individual components and systems in the applicable national measures implementing Directive 2010/31/EU and, where applicable, are rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation:

- (a) addition of insulation to existing envelope components, such as external walls (including green walls), roofs (including green roofs), lofts, basements and ground floors (including measures to ensure air-tightness, measures to reduce the effects of thermal bridges and scaffolding) and products for the application of the insulation to the building envelope (including mechanical fixings and adhesive);

<sup>(301)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).

<sup>(302)</sup> Applying to paints and varnishes, ceiling tiles, floor coverings (including associated adhesives and sealants), internal insulation and interior surface treatments (such as to treat damp and mould).

<sup>(303)</sup> ISO 16000-3:2011, Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method (version of 4.6.2021: <https://www.iso.org/standard/51812.html>).

<sup>(304)</sup> The emissions thresholds for carcinogenic volatile organic compounds relate to a 28-day test period.

- (b) replacement of existing windows with new energy efficient windows;
- (c) replacement of existing external doors with new energy efficient doors;
- (d) installation and replacement of energy efficient light sources;
- (e) installation, replacement, maintenance and repair of heating, ventilation and air-conditioning (HVAC) and water heating systems, including equipment related to district heating services, with highly efficient technologies;
- (f) installation of low water and energy using kitchen and sanitary water fittings which comply with technical specifications set out in Appendix E to this Annex and, in case of shower solutions, mixer showers, shower outlets and taps, have a max water flow of 6 L/min or less attested by an existing label in the Union market.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Building components and materials comply with the criteria set out in Appendix C to this Annex.  In case of addition of thermal insulation to an existing building envelope, a building survey is carried out in accordance with national law by a competent specialist with training in asbestos surveying. Any stripping of lagging that contains or is likely to contain asbestos, breaking or mechanical drilling or screwing or removal of insulation board, tiles and other asbestos containing materials is carried out by appropriately trained personnel, with health monitoring before, during and after the works, in accordance with national law.
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 7.4. Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)

##### *Description of the activity*

Installation, maintenance and repair of charging stations for electric vehicles in buildings and parking spaces attached to buildings.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27 or C28 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

Installation, maintenance or repair of charging stations for electric vehicles.

<sup>(301)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

**7.5. Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings**

*Description of the activity*

Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, and C16, C17, C22, C23, C25, C27, C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity consists in one of the following individual measures:

- (a) installation, maintenance and repair of zoned thermostats, smart thermostat systems and sensing equipment, including motion and day light control;
- (b) installation, maintenance and repair of building automation and control systems, building energy management systems (BEMS), lighting control systems and energy management systems (EMS);
- (c) installation, maintenance and repair of smart meters for gas, heat, cool and electricity;
- (d) installation, maintenance and repair of façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A

<sup>(301)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).

(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 7.6. Installation, maintenance and repair of renewable energy technologies

##### *Description of the activity*

Installation, maintenance and repair of renewable energy technologies, on-site.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27 or C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

The activity consists in one of the following individual measures, if installed on-site as technical building systems:

- (a) installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment;
- (b) installation, maintenance and repair of solar hot water panels and the ancillary technical equipment;
- (c) installation, maintenance, repair and upgrade of heat pumps contributing to the targets for renewable energy in heat and cool in accordance with Directive (EU) 2018/2001 and the ancillary technical equipment;
- (d) installation, maintenance and repair of wind turbines and the ancillary technical equipment;
- (e) installation, maintenance and repair of solar transpired collectors and the ancillary technical equipment;
- (f) installation, maintenance and repair of thermal or electric energy storage units and the ancillary technical equipment;
- (g) installation, maintenance and repair of high efficiency micro CHP (combined heat and power) plant;
- (h) installation, maintenance and repair of heat exchanger/recovery systems.

##### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A

<sup>(301)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).



(6) Protection and restoration of biodiversity and ecosystems	N/A
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### 7.7. Acquisition and ownership of buildings

#### *Description of the activity*

Buying real estate and exercising ownership of that real estate.

The economic activities in this category could be associated with NACE code L68 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

Substantial contribution to climate change mitigation

1. For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A. As an alternative, the building is within the top 15 % of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.

2. For buildings built after 31 December 2020, the building meets the criteria specified in Section 7.1 of this Annex that are relevant at the time of the acquisition.

3. Where the building is a large non-residential building (with an effective rated output for heating systems, systems for combined space heating and ventilation, air-conditioning systems or systems for combined air-conditioning and ventilation of over 290 kW) it is efficiently operated through energy performance monitoring and assessment <sup>(305)</sup>.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 8. INFORMATION AND COMMUNICATION

### 8.1. Data processing, hosting and related activities

#### *Description of the activity*

Storage, manipulation, management, movement, control, display, switching, interchange, transmission or processing of data through data centres <sup>(306)</sup>, including edge computing.

<sup>(305)</sup> This can be demonstrated, for example, through the presence of an Energy Performance Contract or a building automation and control system in accordance with Article 14 (4) and Article 15 (4), of Directive 2010/31/EU.

<sup>(306)</sup> Data centres include the following equipment: ICT equipment and services; cooling; data centre power equipment; data centre power distribution equipment; data centre building; monitoring systems.

The economic activities in this category could be associated with NACE code J63.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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1. The activity has implemented all relevant practices listed as ‘expected practices’ in the most recent version of the European Code of Conduct on Data Centre Energy Efficiency <sup>(307)</sup>, or in CEN-CENELEC document CLC TR50600-99-1 ‘Data centre facilities and infrastructures - Part 99-1: Recommended practices for energy management’ <sup>(308)</sup>.

The implementation of those practices is verified by an independent third-party and audited at least every three years.

2. Where an expected practice is not considered relevant due to physical, logistical, planning or other constraints, an explanation of why the expected practice is not applicable or practical is provided. Alternative best practices from the European Code of Conduct on Data Centre Energy Efficiency or other equivalent sources may be identified as direct replacements if they result in similar energy savings.

3. The global warming potential (GWP) of refrigerants used in the data centre cooling system does not exceed 675.

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Do no significant harm (‘DNSH’)

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>The equipment used meets the requirements laid down in Directive 2009/125/EC for servers and data storage products.</p> <p>The equipment used does not contain the restricted substances listed in Annex II to Directive 2011/65/EU of the European Parliament and of the Council <sup>(309)</sup>, except where the concentration values by weight in homogeneous materials do not exceed the maximum values listed in that Annex.</p> <p>A waste management plan is in place and ensures maximal recycling at end of life of electrical and electronic equipment, including through contractual agreements with recycling partners, reflection in financial projections or official project documentation.</p>

<sup>(307)</sup> The most recent version of the European Code of Conduct on Data Centre Energy Efficiency is the latest version published at the Joint Research Centre European Energy Efficiency Platform (E3P) website, <https://e3p.jrc.ec.europa.eu/communities/data-centres-code-conduct>, with a transition period of six months starting from the day of its publication (the 2021 version is available at <https://e3p.jrc.ec.europa.eu/publications/2021-best-practice-guidelines-eu-code-conduct-data-centre-energy-efficiency>).

<sup>(308)</sup> Issued on 1 July 2019 by the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC), (version of 4.6.2021: [https://www.cenelec.eu/dyn/www/?p=104:110:508227404055501:::FSP\\_ORG\\_ID,FSP\\_PROJECT,FSP\\_LANG\\_ID:1258297,65095,25](https://www.cenelec.eu/dyn/www/?p=104:110:508227404055501:::FSP_ORG_ID,FSP_PROJECT,FSP_LANG_ID:1258297,65095,25)).

<sup>(309)</sup> Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 174, 1.7.2011, p. 88).

	At its end of life, the equipment undergoes preparation for reuse, recovery or recycling operations, or proper treatment, including the removal of all fluids and a selective treatment in accordance with Annex VII to Directive 2012/19/EU of the European Parliament and of the Council <sup>(310)</sup> .
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 8.2. Data-driven solutions for GHG emissions reductions

### *Description of the activity*

Development or use of ICT solutions that are aimed at collecting, transmitting, storing data and at its modelling and use where those activities are predominantly aimed at the provision of data and analytics enabling GHG emission reductions. Such ICT solutions may include, *inter alia*, the use of decentralized technologies (i.e. distributed ledger technologies), Internet of Things (IoT), 5G and Artificial Intelligence. The economic activities in this category could be associated with several NACE codes, in particular J61, J62 and J63.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

1. The ICT solutions are predominantly used for the provision of data and analytics enabling GHG emission reductions.

2. Where an alternative solution/technology is already available on the market, the ICT solution demonstrates substantial life-cycle GHG emission savings compared to the best performing alternative solution/technology.

Life-cycle GHG emissions and net emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ETSI ES 203 199 <sup>(311)</sup>, ISO 14067:2018 <sup>(312)</sup> or ISO 14064-2:2019 <sup>(313)</sup>.

Quantified life-cycle GHG emission reductions are verified by an independent third party which transparently assesses how the standard criteria, including those for critical review, have been followed when the value was derived.

#### Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
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<sup>(310)</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (OJ L 197, 24.7.2012, p. 38).

<sup>(311)</sup> ETSI ES 203 199, Environmental Engineering (EE); Methodology for environmental Life Cycle Assessment (LCA) of Information and Communication Technology (ICT) goods, networks and services (version of 4.6.2021: [https://www.etsi.org/deliver/etsi\\_es/203100\\_203199/203199/01.03.00\\_50/es\\_203199v010300m.pdf](https://www.etsi.org/deliver/etsi_es/203100_203199/203199/01.03.00_50/es_203199v010300m.pdf)). The ETSI standard ETSI ES 203 199 correspond to the ITU standard ITU-T L.1410.

<sup>(312)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(313)</sup> ISO standard 14064-2:2019, Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements (version of 4.6.2021: <https://www.iso.org/standard/66454.html>).

(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	<p>The equipment used meets the requirements set in accordance with Directive 2009/125/EC for servers and data storage products.</p> <p>The equipment used does not contain the restricted substances listed in Annex II to Directive 2011/65/EU, except where the concentration values by weight in homogeneous materials do not exceed those listed in that Annex.</p> <p>A waste management plan is in place and ensures maximal recycling at end of life of electrical and electronic equipment, including through contractual agreements with recycling partners, reflection in financial projections or official project documentation.</p> <p>At its end of life, the equipment undergoes preparation for reuse, recovery or recycling operations, or proper treatment, including the removal of all fluids and a selective treatment in accordance with Annex VII to Directive 2012/19/EU.</p>
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 9. PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES

### 9.1. Close to market research, development and innovation

#### *Description of the activity*

Research, applied research and experimental development of solutions, processes, technologies, business models and other products dedicated to the reduction, avoidance or removal of GHG emissions (RD&I) for which the ability to reduce, remove or avoid GHG emissions in the target economic activities has at least been demonstrated in a relevant environment, corresponding to at least Technology Readiness Level (TRL) 6 <sup>(314)</sup>.

The economic activities in this category could be associated with several NACE codes, in particular M71.1.2 and M72.1, or for research that is an integral part of those economic activities for which technical screening criteria are specified in this Annex, the NACE codes set out in other Sections of this Annex in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

#### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

1. The activity researches, develops or provides innovation for technologies, products or other solutions that are dedicated to one or more economic activities for which the technical screening criteria have been set out in this Annex.

<sup>(314)</sup> In line with Annex G of the General Annexes of HORIZON 2020 WORK PROGRAMME 2016 2017, p.29 (version of 4.6.2021: [https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-ga\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-ga_en.pdf)).

2. The results of the research, development and innovation enable one or more of those economic activities to meet the respective criteria for substantial contribution to climate change mitigation, while respecting the relevant criteria for doing no significant harm to other environmental objectives.

3. The economic activity aims at bringing to market a solution that is not yet in the market and is expected to have a better performance in terms of life-cycle GHG emissions than best commercially available technologies based on public or market information. The implementation of the technologies, products or other solutions being researched results in overall net GHG emissions reductions over their life cycle.

4. Where the researched, developed or innovated technology, product or other solution already enables an activity or several activities addressed in this Annex to meet the technical screening criteria specified in the applicable Section of this Annex, or where that technology, product or other solution already enables one or more economic activities considered as enabling or transitional to meet the requirements specified in points 5 and 6 respectively, the research, development and innovation activity focuses on the development of equally low- or lower-emission technologies, products or other solutions with new significant advantages, such as lower cost.

5. Where a research activity is dedicated to one or more economic activities considered as enabling activities in accordance with Article 10(1), point (i), of Regulation EU 2020/852 for which the technical screening criteria are set out in this Annex, the results of the research deliver innovative technologies, processes or products that allow those enabling activities and the activities that they ultimately enable to substantially reduce their GHG emissions or substantially improve their technological and economic feasibility in order to facilitate their scaling up.

6. Where a research activity is dedicated to one or more economic activities considered as transitional activities in accordance with Article 10(2) of Regulation EU 2020/852 for which the technical screening criteria are set out in this Annex, the technologies, products or other solutions researched enable the target activities to be carried out with substantially lower projected emissions compared to the technical screening criteria for substantial contribution to climate change mitigation set out in this Annex.

Where a research activity is dedicated to one or more economic activities specified in Sections 3.7, 3.8, 3.9, 3.11, 3.12, 3.13, 3.14 and 3.16 of this Annex, the technologies, products or other solutions either enable the target activities to be carried out with substantially lower GHG emission, which aim at a 30 % reduction compared to the relevant EU ETS benchmark or benchmarks<sup>(315)</sup> or are dedicated to the widely accepted relevant low carbon technologies or processes in these sectors, notably electrification, in particular of heating and cooling, hydrogen as fuel or feedstock, CCS, CCU and biomass as fuel or feedstock, where biomass complies with the relevant requirements set out in Sections 4.8, 4.20, 4.24 in this Annex.

7. Where the researched, developed or innovated technology, product or other solution is at TRL 6 or 7, life-cycle GHG emissions are evaluated in simplified form by the entity carrying out the research. The entity demonstrates one of the following, where applicable:

- (a) a patent not older than 10 years associated with the technology, product or other solution, where information on its GHG emission reduction potential has been provided;
- (b) a permit obtained from a competent authority for operating the demonstration site associated with the innovative technology, product or other solution for the duration of the demonstration project, where information on its GHG emission reduction potential has been provided.

<sup>(315)</sup> Reflecting the average value of the 10 % most efficient installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) as set out in the Annex to the Implementing Regulation (EU) 2021/447.

Where the researched, developed or innovated technology, product or other solution is at TRL 8 or higher, life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 <sup>(316)</sup> or ISO 14064-1:2018 <sup>(317)</sup> and are verified by an independent third party.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The researched technology, product or other solution complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	Any potential risks to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters from the researched technology, product or other solution are evaluated and addressed.
(4) Transition to a circular economy	Any potential risks to the circular economy objectives from the researched technology, product or other solution are evaluated and addressed, by considering the types of potential significant harm as set out in Article 17(1), point. (d), of Regulation (EU) 2020/852.
(5) Pollution prevention and control	Any potential risks to generate a significant increase in the emissions of pollutants to air, water or land from the researched technology, product or other solution are evaluated and addressed.
(6) Protection and restoration of biodiversity and ecosystems	Any potential risks to the good condition or resilience of ecosystems or to the conservation status of habitats and species, including those of Union interest, from the researched technology, product or other solution are evaluated and addressed.

## 9.2. Research, development and innovation for direct air capture of CO<sub>2</sub>

### *Description of the activity*

Research, applied research and experimental development of solutions, processes, technologies, business models and other products dedicated to the direct air capture of CO<sub>2</sub> in the atmosphere.

The economic activities in this category could be associated with several NACE codes, in particular M71.1.2 and M72.1 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

### *Technical screening criteria*

#### Substantial contribution to climate change mitigation

1. The activity researches, develops or provides innovation for technologies, products or other solutions that are dedicated to the direct air capture of CO<sub>2</sub> in the atmosphere.

<sup>(316)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(317)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

2. The implementation of the technologies, products or other solutions being researched for the direct air capture of CO<sub>2</sub> in the atmosphere has the potential to result in overall net GHG emissions reductions once commercialised.

3. Where the researched, developed or innovated technology, product or other solution is at TRL 1 to 7, life-cycle GHG emissions are evaluated in simplified form by the entity carrying out the research. The entity demonstrates one of the following, where applicable:

- (a) a patent not older than 10 years associated with the technology, product or other solution, where information on its GHG emission reduction potential has been provided;
- (b) a permit obtained from a competent authority for operating the demonstration site associated with the innovative technology, product or other solution for the duration of the demonstration project, where information on its GHG emission reduction potential has been provided.

Where the researched, developed or innovated technology, product or other solution is at TRL 8 or higher, life-cycle GHG emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 <sup>(318)</sup> or ISO 14064-1:2018 <sup>(319)</sup> and are verified by an independent third party.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The researched technology, product or other solution complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	Any potential risks to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters from the researched technology, product or other solution are evaluated and addressed.
(4) Transition to a circular economy	Any potential risks to the circular economy objectives from the researched technology, product or other solution are evaluated and addressed, by considering the types of potential significant harm as set out in Article 17(1), point (d), of Regulation (EU) 2020/852.
(5) Pollution prevention and control	Any potential risks to generate a significant increase in the emissions of pollutants to air, water or land from the researched technology, product or other solution are evaluated and addressed.
(6) Protection and restoration of biodiversity and ecosystems	Any potential risks to the good condition or resilience of ecosystems or to the conservation status of habitats and species, including those of Union interest, from the researched technology, product or other solution are evaluated and addressed.

### 9.3. Professional services related to energy performance of buildings

*Description of the activity*

Professional services related to energy performance of buildings.

<sup>(318)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(319)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).



The economic activities in this category could be associated with NACE code M71 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 10(1), point (i), of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

*Technical screening criteria*

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Substantial contribution to climate change mitigation

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The activity consists in one of the following:

- (a) technical consultations (energy consultations, energy simulations, project management, production of energy performance contracts, dedicated trainings) linked to the improvement of energy performance of buildings;
  - (b) accredited energy audits and building performance assessments;
  - (c) energy management services;
  - (d) energy performance contracts;
  - (e) energy services provided by energy service companies (ESCOs).
- 

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## Appendix A

## GENERIC CRITERIA FOR DNSH TO CLIMATE CHANGE ADAPTATION

## I. Criteria

The physical climate risks that are material to the activity have been identified from those listed in the table in Section II of this Appendix by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Section II of this Appendix may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Section II of this Appendix, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(1)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(2)</sup>, scientific peer-reviewed publications, and open source <sup>(3)</sup> or paying models.

For existing activities and new activities using existing physical assets, the economic operator implements physical and non-physical solutions ('adaptation solutions'), over a period of time of up to five years, that reduce the most important identified physical climate risks that are material to that activity. An adaptation plan for the implementation of those solutions is drawn up accordingly.

For new activities and existing activities using newly-built physical assets, the economic operator integrates the adaptation solutions that reduce the most important identified physical climate risks that are material to that activity at the time of design and construction and has implemented them before the start of operations.

The adaptation solutions implemented do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; are consistent with local, sectoral, regional or national adaptation strategies and plans; and consider the use of nature-based solutions <sup>(4)</sup> or rely on blue or green infrastructure <sup>(5)</sup> to the extent possible.

<sup>(1)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(2)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(3)</sup> Such as Copernicus services managed by the European Commission.

<sup>(4)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services. (version of 4.6.2021: <https://ec.europa.eu/research/environment/index.cfm?pg=nbs>).

<sup>(5)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

II. Classification of climate-related hazards <sup>(6)</sup>

	Temperature-related	Wind-related	Water-related	Solid mass-related
<b>Chronic</b>	Changing temperature (air, freshwater, marine water)	Changing wind patterns	Changing precipitation patterns and types (rain, hail, snow/ice)	Coastal erosion
	Heat stress		Precipitation or hydrological variability	Soil degradation
	Temperature variability		Ocean acidification	Soil erosion
	Permafrost thawing		Saline intrusion	Solifluction
			Sea level rise	
			Water stress	
<b>Acute</b>	Heat wave	Cyclone, hurricane, typhoon	Drought	Avalanche
	Cold wave/frost	Storm (including blizzards, dust and sandstorms)	Heavy precipitation (rain, hail, snow/ice)	Landslide
	Wildfire	Tornado	Flood (coastal, fluvial, pluvial, ground water)	Subsidence
			Glacial lake outburst	

<sup>(6)</sup> The list of climate-related hazards in this table is non-exhaustive, and constitutes only an indicative list of most widespread hazards that are to be taken into account as a minimum in the climate risk and vulnerability assessment.

*Appendix B***GENERIC CRITERIA FOR DNSH TO SUSTAINABLE USE AND PROTECTION OF WATER AND MARINE RESOURCES**

Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC of the European Parliament and of the Council <sup>(1)</sup> and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders.

Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU of the European Parliament and of the Council <sup>(2)</sup> and includes an assessment of the impact on water in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed.

<sup>(1)</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).

For activities in third countries, in accordance with applicable national law or international standards which pursue equivalent objectives of good water status and good ecological potential, through equivalent procedural and substantive rules, i.e. a water use and protection management plan developed in consultation with relevant stakeholders which ensures that 1) the impact of the activities on the identified status or ecological potential of potentially affected water body or bodies is assessed and 2) deterioration or prevention of good status/ecological potential is avoided or, where this is not possible, 3) justified by the lack of better environmental alternatives which are not disproportionately costly/technically unfeasible, and all practicable steps are taken to mitigate the adverse impact on the status of the body of water.

<sup>(2)</sup> Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (OJ L 26, 28.1.2012, p. 1).

## Appendix C

**GENERIC CRITERIA FOR DNSH TO POLLUTION PREVENTION AND CONTROL REGARDING USE AND PRESENCE OF CHEMICALS**

The activity does not lead to the manufacture, placing on the market or use of:

- (a) substances, whether on their own, in mixtures or in articles, listed in Annexes I or II to Regulation (EU) 2019/1021 of the European Parliament and of the Council <sup>(1)</sup>, except in the case of substances present as an unintentional trace contaminant;
- (b) mercury and mercury compounds, their mixtures and mercury-added products as defined in Article 2 of Regulation (EU) 2017/852 of the European Parliament and of the Council <sup>(2)</sup>;
- (c) substances, whether on their own, in mixture or in articles, listed in Annexes I or II to Regulation (EC) No 1005/2009 of the European Parliament and of the Council <sup>(3)</sup>;
- (d) substances, whether on their own, in mixtures or in an articles, listed in Annex II to Directive 2011/65/EU of the European Parliament and of the Council <sup>(4)</sup>, except where there is full compliance with Article 4(1) of that Directive;
- (e) substances, whether on their own, in mixtures or in an article, listed in Annex XVII to Regulation (EC) 1907/2006 of the European Parliament and of the Council <sup>(5)</sup>, except where there is full compliance with the conditions specified in that Annex;
- (f) substances, whether on their own, in mixtures or in an article, meeting the criteria laid down in Article 57 of Regulation (EC) 1907/2006 and identified in accordance with Article 59(1) of that Regulation, except where their use has been proven to be essential for the society;
- (g) other substances, whether on their own, in mixtures or in an article, that meet the criteria laid down in Article 57 of Regulation (EC) 1907/2006, except where their use has been proven to be essential for the society.

<sup>(1)</sup> Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants (OJ L 169, 25.6.2019, p. 45).

<sup>(2)</sup> Regulation (EU) 2017/852 of the European Parliament and of the Council of 17 May 2017 on mercury, and repealing Regulation (EC) No 1102/2008 (OJ L 137, 24.5.2017, p. 1).

<sup>(3)</sup> Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (OJ L 286, 31.10.2009, p. 1).

<sup>(4)</sup> Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. (OJ L 174, 1.7.2011, p. 88).

<sup>(5)</sup> Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. (OJ L 396, 30.12.2006, p. 1).

*Appendix D***GENERIC CRITERIA FOR DNSH TO PROTECTION AND RESTORATION OF BIODIVERSITY AND ECOSYSTEMS**

An Environmental Impact Assessment (EIA) or screening <sup>(1)</sup> has been completed in accordance with Directive 2011/92/EU <sup>(2)</sup>.

Where an EIA has been carried out, the required mitigation and compensation measures for protecting the environment are implemented.

For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment <sup>(3)</sup>, where applicable, has been conducted and based on its conclusions the necessary mitigation measures <sup>(4)</sup> are implemented.

<sup>(1)</sup> The procedure through which the competent authority determines whether projects listed in Annex II to Directive 2011/92/EU is to be made subject to an environmental impact assessment (as referred to in Article 4(2) of that Directive).

<sup>(2)</sup> For activities in third countries, in accordance with equivalent applicable national law or international standards requiring the completion of an EIA or screening, for example, IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks.

<sup>(3)</sup> In accordance with Directives 2009/147/EC and 92/43/EEC. For activities located in third countries, in accordance with equivalent applicable national law or international standards, that aim at the conservation of natural habitats, wild fauna and wild flora, and that require to carry out (1) a screening procedure to determine whether, for a given activity, an appropriate assessment of the possible impacts on protected habitats and species is needed; (2) such an appropriate assessment where the screening determines that it is needed, for example IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

<sup>(4)</sup> Those measures have been identified to ensure that the project, plan or activity will not have any significant effects on the conservation objectives of the protected area.

## Appendix E

TECHNICAL SPECIFICATIONS <sup>(1)</sup> FOR WATER APPLIANCES

1. The flow rate is recorded at the standard reference pressure  $3 - 0/+ 0,2$  bar or  $0,1 - 0/+ 0,02$  for products limited to low pressure.
2. The flow rate at the lower pressure  $1,5 - 0/+ 0,2$  bar is  $\geq 60$  % of the maximum available flow rate.
3. For mixer showers, the reference temperature is  $38 \pm 1$  °C.
4. Where the flow has to be lower than 6 L/min, it complies with the rule set out in point 2.
5. For taps the procedure described in clause 10.2.3 of EN 200 is followed, with the following exceptions:
  - (a) for taps that are not limited to low pressure applications only: apply a  $3 - 0/+ 0,2$  bar pressure to both the hot and the cold inlets, alternatively;
  - (b) for taps that are limited to low pressure applications only: apply a  $0,4 - 0/+ 0,02$  bar pressure to both the hot and the cold inlets and fully open the flow control.

<sup>(1)</sup> Reference to EU standards is available at EU level to assess technical specifications of products: EN 200 on 'Sanitary tapware. Single taps and combination taps for water supply systems of type 1 and type 2. General technical specification'; EN 816 'Sanitary tapware – Automatic shut-off valves PN 10'; EN 817 'Mechanical mixing valves (PN 10) – General technical specifications'; EN 1111 'Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specification'; EN 1112 on 'Sanitary tapware. Shower outlets for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification'; EN 1113 on 'Sanitary tapware – Shower hoses for sanitary tapware for water supply systems of type 1 and type 2 – General technical specification', including a method to test the resistance to flexing of the hose; EN 1287 on 'Sanitary tapware. Low pressure thermostatic mixing valves. General technical specifications'; EN 15091 'Sanitary tapware – Electronic opening and closing sanitary tapware'.



## ANNEX II

**Technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives**

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## 1. FORESTRY

### 1.1. Afforestation

#### *Description of the activity*

Establishment of forest through planting, deliberate seeding or natural regeneration on land that, until then, was under a different land use or not used. Afforestation implies a transformation of land use from non-forest to forest, in accordance with the Food and Agriculture Organisation of the United Nations (‘FAO’) definition of afforestation <sup>(1)</sup>, where forest means a land matching the forest definition as set out in national law, or where not available, is in accordance with the FAO definition of forest <sup>(2)</sup>. Afforestation may cover past afforestation as long as it takes place in the period between the planting of the trees and the time when the land use is recognised as a forest.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. Activities are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this section.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions (‘adaptation solutions’) that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(3)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 years climate projections scenarios for major investments.

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<sup>(1)</sup> Establishment of forest through planting or deliberate seeding on land that, until then, was under a different land use, implies a transformation of land use from non-forest to forest (FAO *Global Resources Assessment 2020. Terms and definitions* version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(2)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use, FAO *Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(3)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(4)</sup>, scientific peer-reviewed publications and open source <sup>(5)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(6)</sup> or rely on blue or green infrastructure <sup>(7)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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#### Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>1. <i>Afforestation plan and subsequent forest management plan or equivalent instrument</i></p> <p>1.1. The area on which the activity takes place is covered by an afforestation plan of a duration of at least five years, or the minimum period prescribed in national law, developed prior to the start of the activity, and continuously updated until this area matches the definition of forest as set out in national law or where not available, is in line with the FAO definition of forest.</p> <p>The afforestation plan contains all elements required by the national law relating to environmental impact assessment of afforestation.</p>
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<sup>(4)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(5)</sup> Such as Copernicus services managed by the European Commission.

<sup>(6)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(7)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



1.2. Preferably through the afforestation plan, or if information is missing, through any other document, detailed information is provided on the following points:

- (a) description of the area according to its gazetting in the land registry;
- (b) site preparation and its impacts on pre-existing carbon stocks, including soils and above-ground biomass, in order to protect land with high carbon stock <sup>(8)</sup>;
- (c) management goals, including major constraints;
- (d) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;
- (e) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (f) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (g) measures deployed to establish and maintain the good condition of forest ecosystems;
- (h) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (i) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (j) assessment of impact on food security;
- (k) all DNSH criteria relevant to afforestation.

1.3. When the area becomes a forest, the afforestation plan is followed by a subsequent forest management plan or an equivalent instrument, as set out in national law or, where national law does not define a forest management plan or equivalent instrument, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(9)</sup>. The forest management plan or the equivalent instrument covers a period of 10 years or more and is continuously updated.

1.4. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:

- (a) management goals, including major constraints <sup>(10)</sup>;
- (b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;

<sup>(8)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

<sup>(9)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(10)</sup> Including an analysis of (i) long term sustainability of the wood resource and (ii) impacts/pressures on habitat conservation, diversity of associated habitats and condition of harvesting minimizing soil impacts.

- (c) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks
- (i) all DNSH criteria relevant to forest management.

1.5. The activity follows the best afforestation practices laid down in national law, or, where no such best afforestation practices have been laid down in national law, the activity complies with one of the following criteria:

- (a) the activity complies with Delegated Regulation (EU) No 807/2014;
- (b) the activity follows the 'Pan-European Guidelines for Afforestation and Reforestation with a special focus on the provisions of the UNFCCC' <sup>(1)</sup>.

1.6. The activity does not involve the degradation of land with high carbon stock <sup>(12)</sup>.

1.7. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.

1.8. The afforestation plan and the subsequent forest management plan or equivalent instrument provides for monitoring that ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

## 2. Audit

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:

- (a) the relevant national competent authorities;

<sup>(1)</sup> Forest Europe Pan-European Guidelines for Afforestation and Reforestation with a special focus on the provisions of the UNFCCC adopted by the MCPFE Expert Level Meeting on 12-13 November, 2008 and by the PEBLDS Bureau on behalf of the PEBLDS Council on 4 November, 2008 (version of 4.6.2021: [https://www.foresteurope.org/docs/other\\_meetings/2008/Geneva/Guidelines\\_Aff\\_Ref\\_ADOPTED.pdf](https://www.foresteurope.org/docs/other_meetings/2008/Geneva/Guidelines_Aff_Ref_ADOPTED.pdf)).

<sup>(12)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4), points (a), (b) and (c) of Directive (EU) 2018/2001.

	<p>(b) an independent third-party certifier, at the request of national authorities or the operator of the activity.</p> <p>In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.</p> <p>The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.</p> <p>3. <i>Group assessment</i></p> <p>The compliance with the DNSH criteria may be checked:</p> <p>(a) at the level of the forest sourcing area <sup>(13)</sup> level as defined by Directive (EU) 2018/2001;</p> <p>(b) at the level of a group of forest holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The use of pesticides is reduced and alternative approaches or techniques, which may include non-chemical alternatives to pesticides, are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and of diseases.</p> <p>The activity minimises the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(14)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard <sup>(15)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>

<sup>(13)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

<sup>(14)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3.).

<sup>(15)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019) (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>Detailed information referred to in points 1.2(k) (Afforestation plan) and 1.4(i) (Forest management plan or equivalent system) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem conditions (such as climate, soil criteria, and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions;</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> <li>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</li> <li>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</li> <li>(g) ensuring the diversity of associated habitats and species linked to the forest;</li> <li>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</li> </ul>
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## 1.2. Rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event

### *Description of the activity*

Rehabilitation and restoration of forests as defined by national law. Where national law does not contain such a definition, rehabilitation and restoration refers to a definition with broad agreement in the peer-reviewed scientific literature for specific countries or a definition in line with the FAO concept of forest restoration<sup>(16)</sup> or a

<sup>(16)</sup> Forest restoration includes:

- rehabilitation, meaning the restoration of desired species, structures or processes to an existing ecosystem;
- reconstruction, meaning restoration of native plants on land which is in another use;
- reclamation, meaning restoration of severely degraded land devoid of vegetation;
- most radically replacement, in which species maladapted for a given location and unable to migrate are replaced with introduced species as climates change rapidly,

*Forest restoration module. In Sustainable Forest Management (SFM) Toolbox (version of 4.6.2021: <http://www.fao.org/sustainable-forest-management/toolbox/modules/forest-restoration/basic-knowledge/en/>).*

definition in line with one of the definitions of ecological restoration<sup>(17)</sup> applied to forest, or forest rehabilitation<sup>(18)</sup> under the Convention on Biological Diversity. The economic activities also include forest activities in line with the FAO definition of 'reforestation'<sup>(19)</sup> and 'naturally regenerating forest'<sup>(20)</sup> after an extreme event, where extreme event is defined by national law, and where national law does not contain such a definition, is in line with the IPCC definition of extreme weather event<sup>(21)</sup>; or after a wildfire, where wildfire is defined by national law, and where national law does not contain such a definition, as defined in the European Glossary for wildfires and forest fires<sup>(22)</sup>.

The economic activities in this category imply no change of land use and occurs on degraded land matching the forest definition as set out in national law, or where not available, is in accordance with the FAO definition of forest<sup>(23)</sup>.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

<sup>(17)</sup> Ecological Restoration (Also Ecosystem Restoration):

- the process of returning an ecosystem to a natural pre-disturbance structure and function;
- the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed;
- the process of intentionally altering a site to establish a defined, indigenous ecosystem. The goal of this process is to emulate the structure, function, diversity and dynamics of the specified ecosystem;
- human intervention ... designed to accelerate the recovery of damaged habitats, or to bring ecosystems back to as close an approximation as possible of their pre-disturbance states,

*Most used definitions/descriptions of key terms related to ecosystem restoration.* 11<sup>th</sup> conference of the Parties to the Convention on Biological Diversity. 2012. UNEP/CBD/COP/11/INF/19 (version of 4.6.2021: <https://www.cbd.int/doc/meetings/cop/cop-11/information/cop-11-inf-19-en.pdf>).

<sup>(18)</sup> Forest rehabilitation is the process of restoring the capacity of a forest to provide goods and services again, where the state of the rehabilitated forest is not identical to its state before degradation,

*Most used definitions/descriptions of key terms related to ecosystem restoration.* 11<sup>th</sup> Conference of the Parties to the Convention on Biological Diversity. 2012. UNEP/CBD/COP/11/INF/19 (version of 4.6.2021: <https://www.cbd.int/doc/meetings/cop/cop-11/information/cop-11-inf-19-en.pdf>).

<sup>(19)</sup> Re-establishment of forest through planting and/or deliberate seeding on land classified as forest,

*FAO Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(20)</sup> Forest predominantly composed of trees established through natural regeneration,

*FAO Global Resources Assessment 2020. Terms and definitions* (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(21)</sup> An extreme weather event is an event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., drought or heavy rainfall over a season). See IPCC, 2018: *Annex I: Glossary* (version of 4.6.2021: <https://www.ipcc.ch/sr15/chapter/glossary/>).

<sup>(22)</sup> Any uncontrolled vegetation fire which requires a decision or action regarding suppression, 2012 European Glossary for wildfires and forest fires, developed under the European Forest Fire Network- 'EUFOFINET' project, as part of the INTERREG IVC programme (version of 4.6.2021: <https://www.ctif.org/index.php/library/european-glossary-wildfires-and-forest-fires>).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(24)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(25)</sup>, scientific peer-reviewed publications and open source<sup>(26)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

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<sup>(23)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(24)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(25)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(26)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions <sup>(27)</sup> or rely on blue or green infrastructure <sup>(28)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>1. <i>Forest management plan or equivalent instrument</i></p> <p>1.1. The activity takes place on area that is subject to a forest management plan or an equivalent instrument, as set out in national law or, where national law does not define a forest management plan or equivalent instrument, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(29)</sup>.</p> <p>The forest management plan or the equivalent instrument covers a period of 10 years or more, and is continuously updated.</p> <p>1.2. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:</p> <ul style="list-style-type: none"> <li>(a) management goals, including major constraints <sup>(30)</sup>;</li> <li>(b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;</li> </ul>
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<sup>(27)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(28)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(29)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised.

FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(30)</sup> Including an analysis of (i) long term sustainability of the wood resource (ii) impacts/pressures on habitat conservation, diversity of associated habitats and condition of harvesting minimizing soil impacts.



- (c) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH criteria relevant to forest management.

1.3. The sustainability of the forest management systems, as documented in the plan referred to in point 1.1, is ensured by choosing the most ambitious of the following approaches:

- (a) the forest management matches the applicable national definition of sustainable forest management;
- (b) the forest management matches the Forest Europe definition<sup>(31)</sup> of sustainable forest management and complies with the Pan-European Operational Level Guidelines for Sustainable Forest Management<sup>(32)</sup>;
- (c) the management system in place complies with the forest sustainability criteria laid down in Article 29(6) of Directive (EU) 2018/2001, and as of the date of its application with the implementing act on operational guidance for energy from forest biomass adopted under Article 29(8) of that Directive.

1.4. The activity does not involve the degradation of land with high carbon stock<sup>(33)</sup>.

1.5. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.

1.6. The forest management plan or equivalent instrument provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

<sup>(31)</sup> The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

*Resolution H1 General Guidelines for the Sustainable Management of Forests in Europe* Second Ministerial Conference on the Protection of Forests in Europe (Forest Europe), 16-17 June 1993, Helsinki/Finland (version of 4.6.2021: [https://www.foresteurope.org/docs/MC/MC\\_helsinki\\_resolutionH1.pdf](https://www.foresteurope.org/docs/MC/MC_helsinki_resolutionH1.pdf)).

<sup>(32)</sup> Annex 2 of the Resolution L2. Pan-European Operational Level Guidelines for Sustainable Forest Management. Third Ministerial Conference on the Protection of Forests in Europe 2-4 June 1998, Lisbon/Portugal (version of 4.6.2021: [https://foresteurope.org/wp-content/uploads/2016/10/MC\\_lisbon\\_resolutionL2\\_with\\_annexes.pdf#page=18](https://foresteurope.org/wp-content/uploads/2016/10/MC_lisbon_resolutionL2_with_annexes.pdf#page=18) ).

<sup>(33)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

	<p>2. <i>Audit</i></p> <p>Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:</p> <p>(a) the relevant national competent authorities;</p> <p>(b) an independent third-party certifier, at the request of national authorities or the operator of the activity.</p> <p>In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.</p> <p>The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.</p> <p>3. <i>Group assessment</i></p> <p>The compliance with the DNSH criteria may be checked:</p> <p>(a) at the level of the forest sourcing area <sup>(34)</sup> as defined by Directive (EU) 2018/2001;</p> <p>(b) at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>The silvicultural change induced by the activity on the area covered by the activity is not likely to result in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood products with long-term circularity potential. This criterion may be demonstrated through the climate benefits analysis referred to in point (2).</p>
(5) Pollution prevention and control	<p>The use of pesticides is reduced and alternative approaches or techniques, which may include non-chemical alternatives to pesticides, are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and of diseases.</p> <p>The activity minimises the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p>

<sup>(34)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

	<p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(35)</sup>, the Rotterdam Convention on the Prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>Detailed information referred to in point 1.2.(i) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem conditions (such as climate, soil criteria, and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions;</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> <li>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</li> <li>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</li> <li>(g) ensuring the diversity of associated habitats and species linked to the forest;</li> <li>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</li> </ul>

<sup>(35)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants ((OJ L 209, 31.7.2006, p. 3).

### 1.3. Forest management

#### *Description of the activity*

Forest management as defined by national law. Where national law does not contain such a definition, forest management refers to any economic activity resulting from a system applicable to a forest that influences the ecological, economic or social functions of the forest. Forest management assumes no change in land use and occurs on land matching the definition of forest as set out in national law, or where not available, in accordance with the FAO definition of forest <sup>(36)</sup>.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

#### *Technical screening criteria*

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##### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(37)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(38)</sup>, scientific peer-reviewed publications and open source <sup>(39)</sup> or paying models.

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<sup>(36)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/i8661en/i8661en.pdf>).

<sup>(37)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(38)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(39)</sup> Such as Copernicus services managed by the European Commission.

4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions <sup>(40)</sup> or rely on blue or green infrastructure <sup>(41)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.
5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:
- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>1. <i>Forest management plan or equivalent instrument</i></p> <p>1.1. The activity takes place on area that is subject to a forest management plan or an equivalent instrument, as set out in national law or, where national law does not define a forest management plan, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(42)</sup>.</p> <p>The forest management plan or equivalent instrument covers a period of 10 years or more and is continuously updated.</p> <p>1.2. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:</p> <ul style="list-style-type: none"> <li>(a) management goals, including major constraints <sup>(43)</sup>;</li> <li>(b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;</li> </ul>
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<sup>(40)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(41)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(42)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised.  
FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(43)</sup> Including an analysis of (i) long term sustainability of the wood resource (ii) impacts/pressures on habitat conservation, diversity of associated habitats and condition of harvesting minimising soil impacts.

- (c) definition of the forest habitat context, including main existing and intended forest tree species, and their extent and distribution;
- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to establish and maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH criteria relevant for forest management.

1.3. The sustainability of the forest management system, as documented in the plan referred to in point 1.1, is ensured by choosing the most ambitious of the following approaches:

- (a) the forest management matches the applicable national definition of sustainable forest management;
- (b) the forest management matches the Forest Europe definition<sup>(44)</sup> of sustainable forest management and complies with the Pan-European Operational Level Guidelines for Sustainable Forest Management<sup>(45)</sup>;
- (c) the management system in place show compliance with the forest sustainability criteria set out in Article 29(6) of Directive (EU) 2018/2001, and as of the date of its application with the implementing act on operational guidance for energy from forest biomass adopted under Article 29(8) of that Directive.

1.4. The activity does not involve the degradation of land with high carbon stock<sup>(46)</sup>.

1.5. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.

1.6. The forest management plan or equivalent document provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

<sup>(44)</sup> The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

*Resolution H1 General Guidelines for the Sustainable Management of Forests in Europe* Second Ministerial Conference on the Protection of Forests in Europe (Forest Europe), 16-17 June 1993, Helsinki/Finland (version of 4.6.2021: [https://www.foresteuropa.org/docs/MC/MC\\_helsinki\\_resolutionH1.pdf](https://www.foresteuropa.org/docs/MC/MC_helsinki_resolutionH1.pdf)).

<sup>(45)</sup> Annex 2 of the Resolution L2. Pan-European Operational Level Guidelines for Sustainable Forest Management. Third Ministerial Conference on the Protection of Forests in Europe 2-4 June 1998, Lisbon/Portugal ( version of 4.6.2021: [https://foresteuropa.org/wp-content/uploads/2016/10/MC\\_lisbon\\_resolutionL2\\_with\\_annexes.pdf#page=18](https://foresteuropa.org/wp-content/uploads/2016/10/MC_lisbon_resolutionL2_with_annexes.pdf#page=18)).

<sup>(46)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

	<p>2. <i>Audit</i></p> <p>Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:</p> <p>(a) the relevant national competent authorities;</p> <p>(b) an independent third-party certifier, at the request of national authorities or the operator of the activity.</p> <p>In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.</p> <p>The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.</p> <p>3. <i>Group assessment</i></p> <p>The compliance with the DNSH criteria may be checked:</p> <p>(a) at the level of the forest sourcing area <sup>(47)</sup> as defined by Directive (EU) 2018/2001;</p> <p>(b) at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>The silvicultural change induced by the activity on the area covered by the activity is not likely to result in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood products with long-term circularity potential. This criterion may be demonstrated through the climate benefits analysis referred to in point (2).</p>
(5) Pollution prevention and control	<p>The use of pesticides is reduced and alternative approaches or techniques, which may include non-chemical alternatives to pesticides, are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pests and of diseases.</p> <p>The activity minimised the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p>

<sup>(47)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.



	<p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(48)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard <sup>(49)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>Detailed information referred to in points 1.2.(i) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem condition (such as climate, soil criteria, and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions;</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> <li>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</li> <li>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</li> <li>(g) ensuring the diversity of associated habitats and species linked to the forest;</li> <li>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</li> </ul>

<sup>(48)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3).

<sup>(49)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019) (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

#### 1.4. Conservation forestry

##### *Description of the activity*

Forest management activities with the objective of preserving one or more habitats or species. Conservation forestry assumes no change in land category and occurs on land matching the forest definition as set out in national law, or where not available, in accordance with the FAO definition of forest <sup>(50)</sup>.

The economic activities in this category could be associated with NACE code A2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006. The economic activities in this category are limited to NACE II 02.10, i.e. silviculture and other forestry activities, 02.20, i.e. logging, 02.30, i.e. gathering of wild growing non-wood products and 02.40, i.e. support services to forestry.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

##### *Technical screening criteria*

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##### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(51)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(52)</sup>, scientific peer-reviewed publications and open source <sup>(53)</sup> or paying models.

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<sup>(50)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds in situ. It does not include land that is predominantly under agricultural or urban land use, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(51)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(52)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(53)</sup> Such as Copernicus services managed by the European Commission.

4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions <sup>(54)</sup> or rely on blue or green infrastructure <sup>(55)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.
5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:
- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; or
  - (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	<p>1. <i>Forest management plan or equivalent instrument</i></p> <p>1.1. The activity takes place on area that is subject to a forest management plan or an equivalent instrument, as set out in national law or, where national regulation does not define a forest management plan, as referred to in the FAO definition of 'forest area with long-term forest management plan' <sup>(56)</sup>.</p> <p>The forest management plan or the equivalent instrument covers a period of 10 years or more and is continuously updated.</p> <p>1.2. Information is provided on the following points that are not already documented in the forest management plan or equivalent system:</p> <ul style="list-style-type: none"> <li>(a) management goals, including major constraints;</li> <li>(b) general strategies and activities planned to reach the management goals, including expected operations over the whole forest cycle;</li> <li>(c) definition of the forest habitat context, main forest tree species and those intended and their extent and distribution, in accordance to the local forest ecosystem context;</li> </ul>
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<sup>(54)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(55)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(56)</sup> Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, and which is periodically revised, FAO Global Resources Assessment 2020. Terms and definitions (version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

- (d) definition of the area according to its gazetting in the land registry;
- (e) compartments, roads, rights of way and other public access, physical features including waterways, areas under legal and other restrictions;
- (f) measures deployed to maintain the good condition of forest ecosystems;
- (g) consideration of societal issues (including preservation of landscape, consultation of stakeholders in accordance with the terms and conditions laid down in national law);
- (h) assessment of forest related risks, including forest fires, and pests and diseases outbreaks, with the aim of preventing, reducing and controlling the risks and measures deployed to ensure protection and adaptation against residual risks;
- (i) all DNSH relevant to forest management.

1.3. The forest management plan or the equivalent instrument:

- (a) shows a primary designated management objective<sup>(57)</sup> that consists in protection of soil and water<sup>(58)</sup>, conservation of biodiversity<sup>(59)</sup> or social services<sup>(60)</sup> based on the FAO definitions;
- (b) promotes biodiversity-friendly practices that enhance forests' natural processes;
- (c) includes an analysis of:
  - (i) impacts and pressures on habitat conservation and diversity of associated habitats;
  - (ii) condition of harvesting minimizing soil impacts;
  - (iii) other activities that have an impact on conservation objectives, such as hunting and fishing, agricultural, pastoral and forestry activities, industrial, mining, and commercial activities.

1.4. The sustainability of the forest management system as documented in the plan referred to in point 1.1 is ensured by choosing the most ambitious of the following approaches:

- (a) the forest management matches the national definition of sustainable forest management, if any;
- (b) the forest management matches the Forest Europe definition<sup>(61)</sup> of sustainable forest management and complies with the Pan-European Operational Level Guidelines for Sustainable Forest Management<sup>(62)</sup>

<sup>(57)</sup> The primary designated management objective assigned to a management unit (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(58)</sup> Forest where the management objective is protection of soil and water. (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(59)</sup> Forest where the management objective is conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas. (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(60)</sup> Forest where the management objective is social services. (FAO Global Resources Assessment 2020. Terms and definitions version of 4.6.2021: <http://www.fao.org/3/I8661EN/i8661en.pdf>).

<sup>(61)</sup> The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

*Resolution H1 General Guidelines for the Sustainable Management of Forests in Europe* Second Ministerial Conference on the Protection of Forests in Europe (Forest Europe), 16-17 June 1993, Helsinki/Finland (version of 4.6.2021: [https://www.foresteuropa.org/docs/MC/MC\\_helsinki\\_resolutionH1.pdf](https://www.foresteuropa.org/docs/MC/MC_helsinki_resolutionH1.pdf)).

<sup>(62)</sup> Annex 2 of the Resolution L2. Pan-European Operational Level Guidelines for Sustainable Forest Management. Third Ministerial Conference on the Protection of Forests in Europe 2-4 June 1998, Lisbon/Portugal (version of 4.6.2021: [https://foresteuropa.org/wp-content/uploads/2016/10/MC\\_lisbon\\_resolutionL2\\_with\\_annexes.pdf#page=18](https://foresteuropa.org/wp-content/uploads/2016/10/MC_lisbon_resolutionL2_with_annexes.pdf#page=18)).

	<p>(c) the management system in place shows compliance with the forest sustainability criteria as defined in Article 29(6) of Directive (EU) 2018/2001, and as of the date of its application with the implementing act on operational guidance for energy from forest biomass adopted under Article 29(8) of that Directive.</p> <p>1.5. The activity does not involve the degradation of land with high carbon stock <sup>(63)</sup>.</p> <p>1.6. The management system associated with the activity in place complies with the due diligence obligation and legality requirements laid down in Regulation (EU) No 995/2010.</p> <p>1.7. The forest management plan or equivalent instrument provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.</p> <p>2. <i>Audit</i></p> <p>Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and the DNSH criteria are verified by either of the following:</p> <p>(a) the relevant national competent authorities;</p> <p>(b) an independent third-party certifier, at the request of national authorities or the operator of the activity.</p> <p>In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.</p> <p>The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.</p> <p>3. <i>Group assessment</i></p> <p>The compliance with the DNSH criteria may be checked:</p> <p>(a) at the level of the forest sourcing area <sup>(64)</sup> as defined by Directive (EU) 2018/2001;</p> <p>(b) at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.</p>
<p>(3) Sustainable use and protection of water and marine resources</p>	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p> <p>Detailed information referred to in point 1.2. (i) includes provisions to comply with the criteria set out in Appendix B to this Annex.</p>

<sup>(63)</sup> Land with high-carbon stock means wetlands, including peatland, and continuously forested areas within the meaning of Article 29(4)(a), (b) and (c) of Directive (EU) 2018/2001.

<sup>(64)</sup> 'Sourcing area' means the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

(4) Transition to a circular economy	The silvicultural change induced by the activity on the area covered by the activity is not likely to result in a significant reduction of sustainable supply of primary forest biomass suitable for the manufacturing of wood products with long-term circularity potential. This criterion may be demonstrated through the climate benefits analysis referred to in point (2).
(5) Pollution prevention and control	<p>The activity does not use pesticides or fertilisers.</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(65)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO Recommended Classification of Pesticides by Hazard <sup>(66)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>Detailed information referred to in in point 1.2.(i) includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <ul style="list-style-type: none"> <li>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</li> <li>(b) excluding the use or release of invasive alien species;</li> <li>(c) excluding the use of non-native species unless it can be demonstrated that: <ul style="list-style-type: none"> <li>(i) the use of the forest reproductive material leads to favourable and appropriate ecosystem conditions (such as climate, soil criteria, and vegetation zone, forest fire resilience);</li> <li>(ii) the native species currently present on the site are not anymore adapted to projected climatic and pedo-hydrological conditions;</li> </ul> </li> <li>(d) ensuring the maintenance and improvement of physical, chemical and biological quality of the soil;</li> </ul>

<sup>(65)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3.).

<sup>(66)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019) (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

	<p>(e) promoting biodiversity-friendly practices that enhance forests' natural processes;</p> <p>(f) excluding the conversion of high-biodiverse ecosystems into less biodiverse ones;</p> <p>(g) ensuring the diversity of associated habitats and species linked to the forest;</p> <p>(h) ensuring the diversity of stand structures and maintenance or enhancing of mature stage stands and dead wood.</p>
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## 2. ENVIRONMENTAL PROTECTION AND RESTORATION ACTIVITIES

### 2.1. Restoration of wetlands

#### *Description of the activity*

Restoration of wetlands refers to economic activities that promote a return to original conditions of wetlands and economic activities that improve wetland functions without necessarily promoting a return to pre-disturbance conditions, with wetlands meaning land matching international definition of wetland<sup>(67)</sup> or of peatland<sup>(68)</sup> as set out in the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)<sup>(69)</sup>. The concerned area matches the Union definition of wetlands, as provided in the Commission Communication on the wise use and conservation of wetlands<sup>(70)</sup>.

The economic activities in this category have no dedicated NACE code as referred to in the statistical classification of economic activities established by Regulation (EC) No 1893/2006, but relate to class 6 of the statistical classification of environmental protection activities (CEPA) established by Regulation (EU) No 691/2011.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

<sup>(67)</sup> Wetlands include a wide variety of inland habitats such as marshes, wet grasslands and peatlands, floodplains, rivers and lakes, and coastal areas such as saltmarshes, mangroves, intertidal mudflats and seagrass beds, and coral reefs and other marine areas no deeper than six meters at low tide, as well as human-made wetlands such as dams, reservoirs, rice paddies and wastewater treatment ponds and lagoons. An Introduction to the Ramsar Convention on Wetlands, 7th ed. (previously The Ramsar Convention Manual). Ramsar Convention Secretariat, Gland, Switzerland.

<sup>(68)</sup> Peatlands are ecosystems with a peat soil. Peat consists of at least 30 % dead, partially decomposed plant remains that have accumulated in situ under waterlogged and often acidic conditions. Resolution XIII.12 *Guidance on identifying peatlands as Wetlands of International Importance (Ramsar Sites) for global climate change regulation as an additional argument to existing Ramsar criteria*, Ramsar convention adopted on 21- 29 October 2018.

<sup>(69)</sup> The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (version of 4.6.2021: [https://www.ramsar.org/sites/default/files/documents/library/current\\_convention\\_text\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf)).

<sup>(70)</sup> Communication from the Commission to the Council and the European Parliament of 29 May 1995 on wise use and conservation of wetlands, COM(95) 189 final.



The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(71)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(72)</sup>, scientific peer-reviewed publications and open source <sup>(73)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(74)</sup> or rely on blue or green infrastructure <sup>(75)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(71)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(72)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(73)</sup> Such as Copernicus services managed by the European Commission.

<sup>(74)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(75)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation

1. *Restoration plan*

1.1. The area is covered by a restoration plan, which is consistent with the Ramsar Convention's principles and guidelines on wetland restoration, until the area is classified as a wetland and is covered by a wetland management plan, consistent with the Ramsar Convention's guidelines for management planning for Ramsar sites and other wetlands. For peatlands, the restoration plan follows the recommendations contained in relevant resolutions of the Ramsar Convention, including the resolution XIII/13.

1.2. The restoration plan contains careful consideration of local hydrological and pedological conditions, including the dynamics of soil saturation and the change of aerobic and anaerobic conditions.

1.3. All wetland management relevant DNSH criteria are addressed in the restoration plan.

1.4. The restoration plan provides for monitoring which ensures the correctness of the information contained in the plan, in particular as regards the data relating to the involved area.

2. *Audit*

Within two years after the beginning of the activity and every 10 years thereafter, the compliance of the activity with the substantial contribution to climate change mitigation criteria and with the DNSH criteria are verified by either of the following:

(a) the relevant national competent authorities;

(b) an independent third-party certifier, at the request of national authorities or the operator of the activity.

In order to reduce costs, audits may be performed together with any forest certification, climate certification or other audit.

The independent third-party certifier may not have any conflict of interest with the owner or the funder, and may not be involved in the development or operation of the activity.

*Group assessment*

The compliance with the DNSH criteria may be checked at the level of a group of holdings sufficiently homogeneous to evaluate the risk of the sustainability of the forest activity, provided that all those holdings have a durable relationship between them and participate in the activity and the group of those holdings remains the same for all subsequent audits.

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(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Peat extraction is minimised.
(5) Pollution prevention and control	<p>The use of pesticides is minimised and alternative approaches or techniques, which may include non-chemical alternatives to pesticides are favoured, in accordance with Directive 2009/128/EC, with exception of occasions where the use of pesticides is needed to control outbreaks of pest and diseases.</p> <p>The activity minimises the use of fertilisers and does not use manure. The activity complies with Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021 <sup>(76)</sup>, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade, the Minamata Convention on Mercury, the Montreal Protocol on Substances that Deplete the Ozone Layer, and of active ingredients that are listed as classification Ia ('extremely hazardous') or Ib ('highly hazardous') in the WHO recommended Classification of Pesticides by Hazard <sup>(77)</sup>. The activity complies with the relevant national law on active ingredients.</p> <p>Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas.</p> <p>There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.</p> <p>The plan referred to in point 1 (Restoration Plan) of this Section includes provisions for maintaining and possibly enhancing biodiversity in accordance with national and local provisions, including the following:</p> <p>(a) ensuring the good conservation status of habitat and species, maintenance of typical habitat species;</p> <p>(b) excluding the use or release of invasive species.</p>

### 3. MANUFACTURING

#### 3.1. **Manufacture of renewable energy technologies**

##### *Description of the activity*

Manufacture of renewable energy technologies where renewable energy is as defined in Article 2(1) of Directive (EU) 2018/2001.

The economic activities in this category could be associated with several NACE codes, in particular C25, C27, C28 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(76)</sup> Which implements in the Union the Stockholm Convention on persistent organic pollutants (OJ L 209, 31.7.2006, p. 3).

<sup>(77)</sup> The WHO Recommended Classification of Pesticides by Hazard (version 2019), (version of 4.6.2021: <https://apps.who.int/iris/bitstream/handle/10665/332193/9789240005662-eng.pdf?ua=1>).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(78)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(79)</sup>, scientific peer-reviewed publications and open source<sup>(80)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(81)</sup> or rely on blue or green infrastructure<sup>(82)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

<sup>(78)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(79)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(80)</sup> Such as Copernicus services managed by the European Commission.

<sup>(81)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(82)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.2. Manufacture of equipment for the production and use of hydrogen

*Description of the activity*

Manufacture of equipment for the production and use of hydrogen, where the hydrogen for the production of which equipment is manufactured complies with the life cycle GHG emissions savings requirement of 73,4 % [resulting in life-cycle GHG emissions lower than 3 tCO<sub>2</sub>e/tH<sub>2</sub>] and of 70 % for hydrogen-based synthetic fuels relative to a fossil fuel comparator of 94 g CO<sub>2</sub>e/MJ in analogy to the approach set out in Article 25(2) of and Annex V to Directive (EU) 2018/2001 of the European Parliament and of the Council.

The economic activities in this category could be associated with several NACE codes, in particular C25, C27, C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;

(b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;

(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

(a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(83)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(84)</sup>, scientific peer-reviewed publications and open source<sup>(85)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions<sup>(86)</sup> or rely on blue or green infrastructure<sup>(87)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> </ul>

<sup>(83)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(84)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(85)</sup> Such as Copernicus services managed by the European Commission.

<sup>(86)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(87)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

	<p>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</p> <p>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</p> <p>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</p>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.3. Manufacture of low carbon technologies for transport

#### *Description of the activity*

Manufacture, repair, maintenance, retrofitting<sup>(88)</sup>, repurposing and upgrade of low carbon transport vehicles, rolling stock and vessels, where the technology is one of the following:

- (a) trains, passenger coaches and wagons that have zero direct (tailpipe) CO<sub>2</sub> emissions;
- (b) trains, passenger coaches and wagons that have zero direct tailpipe CO<sub>2</sub> emission when operated on a track with necessary infrastructure, and use a conventional engine where such infrastructure is not available (bimode);
- (c) urban, suburban and road passenger transport devices, where the direct (tailpipe) CO<sub>2</sub> emissions of the vehicles are zero;
- (d) until 31 December 2025, vehicles designated as categories M2 and M3<sup>(89)</sup> that have a type of bodywork classified as 'CA' (single-deck vehicle), 'CB' (double-deck vehicle), 'CC' (single-deck articulated vehicle) or 'CD' (double-deck articulated vehicle)<sup>(90)</sup>, and comply with the latest EURO VI standard, i.e. both with the requirements of Regulation (EC) No 595/2009 and, from the time of the entry into force of amendments to that Regulation, in those amending acts, even before they become applicable, and with the latest step of the Euro VI standard set out in Table 1 of Appendix 9 to Annex I to Regulation (EU) No 582/2011 where the provisions governing that step have entered into force but have not yet become applicable for this type of vehicle<sup>(91)</sup>. Where such standard is not available, the direct CO<sub>2</sub> emissions of the vehicles are zero;
- (e) personal mobility devices with a propulsion that comes from the physical activity of the user, from a zero-emissions motor, or a mix of zero-emissions motor and physical activity;
- (f) vehicles of category M<sub>1</sub> and N<sub>1</sub> classified as light-duty vehicles<sup>(92)</sup> with:
  - (i) until 31 December 2025: specific emissions of CO<sub>2</sub>, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, lower than 50 g CO<sub>2</sub>/km (low- and zero-emission light-duty vehicles);
  - (ii) from 1 January 2026: specific emissions of CO<sub>2</sub>, as defined in Article 3(1), point (h), of Regulation (EU) 2019/631, are zero;
- (g) vehicles of category L<sup>(93)</sup> with tailpipe CO<sub>2</sub> emissions equal to 0g CO<sub>2</sub>e/km calculated in accordance with the emission test laid down in Regulation (EU) 168/2013;

<sup>(88)</sup> For points (j) to (m), the criteria related to retrofitting are covered in Sections 6.9 and 6.12 of this Annex.

<sup>(89)</sup> As referred to in Article 4(1), point (a), of Regulation (EU) 2018/858.

<sup>(90)</sup> As set out in point 3 of part C of Annex I to Regulation (EU) 2018/858.

<sup>(91)</sup> Until 31/12/2022, the EURO VI, step E as set out in Regulation (EC) No 595/2009.

<sup>(92)</sup> As defined in Article 4(1), points (a) and (b) of Regulation (EU) 2018/858.

<sup>(93)</sup> As defined in Article 4 of Regulation (EU) No 168/2013.



- (h) vehicles of category N2 and N3, and N1 classified as heavy-duty vehicles, not dedicated to transporting fossil fuels with a technically permissible maximum laden mass not exceeding 7,5 tonnes that are 'zero-emission heavy-duty vehicles' as defined in Regulation (EU) 2019/1242;
- (i) vehicles of category N2 and N3 not dedicated to transporting fossil fuels with a technically permissible maximum laden mass exceeding 7,5 tonnes that are zero-emission heavy-duty vehicles', as defined in Article 3, point (11), of Regulation (EU) 2019/1242 or 'low-emission heavy-duty vehicles' as defined in Article 3, point (12) of that Regulation;
- (j) inland passenger water transport vessels that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (ii) until 31 December 2025, are hybrid or dual fuel vessels using at least 50 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation;
- (k) inland freight water transport vessels, not dedicated to transporting fossil fuels, that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emission;
  - (ii) until 31 December 2025, have direct (tailpipe) emissions of CO<sub>2</sub> per tonne kilometre (g CO<sub>2</sub>/tkm), calculated (or estimated in case of new vessels) using the Energy Efficiency Operational Indicator<sup>(94)</sup>, 50 % lower than the average reference value for emissions of CO<sub>2</sub> defined for heavy duty vehicles (vehicle subgroup 5- LH) in accordance with Article 11 of Regulation (EU) 2019/1242;
- (l) sea and coastal freight water transport vessels, vessels for port operations and auxiliary activities, that are not dedicated to transporting fossil fuels, that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (ii) until 31 December 2025, are hybrid and dual fuel vessels that derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;
  - (iii) until 31 December 2025, and only where it can be proven that the vessels are used exclusively for operating coastal and short sea services designed to enable modal shift of freight currently transported by land to sea, the vessels that have direct (tailpipe) CO<sub>2</sub> emissions, calculated using the International Maritime Organization (IMO) Energy Efficiency Design Index (EEDI)<sup>(95)</sup>, 50 % lower than the average reference CO<sub>2</sub> emissions value defined for heavy duty vehicles (vehicle subgroup 5-LH) in accordance with Article 11 of Regulation (EU) 2019/1242;
  - (iv) until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022<sup>(96)</sup> if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from renewable sources<sup>(97)</sup>;
- (m) sea and coastal passenger water transport vessels, not dedicated to transporting fossil fuels, that:
- (i) have zero direct (tailpipe) CO<sub>2</sub> emissions;
  - (ii) until 31 December 2025, hybrid and dual fuel vessels derive at least 25 % of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports;

<sup>(94)</sup> The Energy Efficiency Operational Indicator is defined as the ratio of mass of CO<sub>2</sub> emitted per unit of transport work. It is a representative value of the energy efficiency of the ship operation over a consistent period which represents the overall trading pattern of the vessel. Guidance on how to calculate this indicator is provided in the document MEPC.1/Circ. 684 from IMO.

<sup>(95)</sup> Energy Efficiency Design Index (version of 4.6.2021: <http://www.imo.org/ft/MediaCentre/HotTopics/GHG/Pages/EEDI.aspx>).

<sup>(96)</sup> As agreed by the Marine Environment Protection Committee of the International Maritime Organization on its seventy-fourth session.

<sup>(97)</sup> Fuels that meet the technical screening criteria specified in Sections 3.10 and 4.13 of this Annex.

- (iii) until 31 December 2025, the vessels have an attained Energy Efficiency Design Index (EEDI) value 10 % below the EEDI requirements applicable on 1 April 2022 if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from renewable sources<sup>(98)</sup>.

The economic activities in this category could be associated with several NACE codes, in particular C29.1, C30.1, C30.2, C30.9, C33.15, C33.17 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(99)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(100)</sup>, scientific peer-reviewed publications and open source<sup>(101)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(98)</sup> Fuels that meet the technical screening criteria specified in Sections 3.10 and 4.13 of this Annex.

<sup>(99)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(100)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(101)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions <sup>(102)</sup> or rely on blue or green infrastructure <sup>(103)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Where applicable, vehicles do not contain lead, mercury, hexavalent chromium and cadmium, in accordance with Directive 2000/53/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.4. Manufacture of batteries

#### *Description of the activity*

Manufacture of rechargeable batteries, battery packs and accumulators for transport, stationary and off-grid energy storage and other industrial applications and manufacture of respective components (battery active materials, battery cells, casings and electronic components) that result in substantial GHG emission reductions in transport, stationary and off-grid energy storage and other industrial applications.

Recycling of end-of-life batteries.

The economic activities in this category could be associated with NACE C27.2 and E38.3.2 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(102)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(103)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(104)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(105)</sup>, scientific peer-reviewed publications and open source<sup>(106)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(107)</sup> or rely on blue or green infrastructure<sup>(108)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
    - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(104)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(105)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(106)</sup> Such as Copernicus services managed by the European Commission.

<sup>(107)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(108)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

Do no significant harm ('DNSH')	
(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>For manufacturing of new batteries, components and materials, the activity assesses the availability of and, where feasible, adopts techniques that support:</p> <p>(a) reuse and use of secondary raw materials and reused components in products manufactured;</p> <p>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</p> <p>(c) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</p> <p>Recycling processes meet the conditions set out in Article 12 and in Annex III, Part B, of Directive 2006/66/EC, including the use of the latest relevant Best Available Techniques, the achievement of the efficiencies specified for lead-acid batteries, nickel-cadmium batteries and for other chemistries. These processes ensure the recycling of the metal content to the highest degree that is technically feasible while avoiding excessive costs.</p> <p>Where applicable, facilities carrying out recycling processes meet the requirements laid down in Directive 2010/75/EU.</p>
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Batteries comply with the applicable sustainability rules on the placing on the market of batteries in the Union, including restrictions on the use of hazardous substances in batteries, including Regulation (EC) No 1907/2006 and Directive 2006/66/EC.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.5. Manufacture of energy efficiency equipment for buildings

#### *Description of the activity*

Manufacture of one or more of the following energy efficiency equipment products and their key components <sup>(109)</sup> for buildings:

- (a) windows with U-value lower or equal to 1,0 W/m<sup>2</sup>K;
- (b) doors with U-value lower or equal to 1,2 W/m<sup>2</sup>K;
- (c) external wall systems with U-value lower or equal to 0,5 W/m<sup>2</sup>K;
- (d) roofing systems with U-value lower or equal to 0,3 W/m<sup>2</sup>K;
- (e) insulating products with a lambda value lower or equal to 0,06 W/mK;
- (f) household appliances falling into the highest two populated classes of energy efficiency classes in accordance with Regulation (EU) 2017/1369 and the delegated acts adopted under that Regulation;

<sup>(109)</sup> Where relevant, the U-value is calculated according to the applicable standards, e.g. EN ISO 10077-1:2017 (windows and doors), EN ISO 12631:2017 (curtain walls) and EN ISO 6946:2017 (other building components and elements).

- (g) light sources rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;
- (h) space heating and domestic hot water systems rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;
- (i) cooling and ventilation systems rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation;
- (j) presence and daylight controls for lighting systems;
- (k) heat pumps compliant with the technical screening criteria set out in Section 4.16 of this Annex;
- (l) façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation;
- (m) energy-efficient building automation and control systems for residential and non-residential buildings;
- (n) zoned thermostats and devices for the smart monitoring of the main electricity loads or heat loads for buildings, and sensing equipment;
- (o) products for heat metering and thermostatic controls for individual homes connected to district heating systems, for individual flats connected to central heating systems serving a whole building, and for central heating systems;
- (p) district heating exchangers and substations compliant with the district heating/cooling distribution activity set out in Section 4.15 of this Annex;
- (q) products for smart monitoring and regulating of heating system, and sensing equipment.

The economic activities in this category could be associated with several NACE codes, in particular C16.23, C23.11, C23.20, C23.31, C23.32, C23.43, C.23.61, C25.11, C25.12, C25.21, C25.29, C25.93, C27.31, C27.32, C27.33, C27.40, C27.51, C28.11, C28.12, C28.13, C28.14, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(110)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(111)</sup>, scientific peer-reviewed publications and open source <sup>(112)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions <sup>(113)</sup> or rely on blue or green infrastructure <sup>(114)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>

<sup>(110)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(111)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(112)</sup> Such as Copernicus services managed by the European Commission.

<sup>(113)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(114)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.6. Manufacture of other low carbon technologies

#### *Description of the activity*

Manufacture of technologies aimed at substantial GHG emission reductions in other sectors of the economy, where those technologies are not covered in Sections 3.1 to 3.5 of this Annex and where those technologies demonstrate substantial life-cycle GHG emission savings compared to the best performing alternative technology, product or solution available on the market, calculated using Commission Recommendation 2013/179/EU or ISO 14067:2018 <sup>(115)</sup> or ISO 14064-1:2018 <sup>(116)</sup> and where the quantified life-cycle GHG emission savings are verified by an independent third party.

The economic activities in this category could be associated with several NACE codes, in particular C22, C25, C26, C27 and C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(117)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(115)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (<https://www.iso.org/standard/71206.html>).

<sup>(116)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

<sup>(117)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(118)</sup>, scientific peer-reviewed publications and open source<sup>(119)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(120)</sup> or rely on blue or green infrastructure<sup>(121)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses the availability of and, where feasible, adopts techniques that support: <ul style="list-style-type: none"> <li>(a) reuse and use of secondary raw materials and reused components in products manufactured;</li> <li>(b) design for high durability, recyclability, easy disassembly and adaptability of products manufactured;</li> <li>(c) waste management that prioritises recycling over disposal, in the manufacturing process;</li> <li>(d) information on and traceability of substances of concern throughout the life cycle of the manufactured products.</li> </ul>
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(118)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(119)</sup> Such as Copernicus services managed by the European Commission.

<sup>(120)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(121)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

### 3.7. **Manufacture of cement**

#### *Description of the activity*

Manufacture of cement clinker, cement or alternative binder.

The economic activities in this category could be associated with NACE code C23.51 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(122)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(123)</sup>, scientific peer-reviewed publications and open source<sup>(124)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(125)</sup> or rely on blue or green infrastructure<sup>(126)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

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<sup>(122)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(123)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(124)</sup> Such as Copernicus services managed by the European Commission.

<sup>(125)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(126)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	Greenhouse gas emissions <sup>(127)</sup> from the cement production processes are:  (a) for grey cement clinker, lower than 0,816 <sup>(128)</sup> tCO <sub>2</sub> e per tonne of grey cement clinker;  (b) for cement from grey clinker or alternative hydraulic binder, lower than 0,530 <sup>(129)</sup> tCO <sub>2</sub> e per tonne of cement or alternative binder manufactured.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for the production of cement, lime and magnesium oxide <sup>(130)</sup> . No significant cross-media effects occur <sup>(131)</sup> .  For manufacture of cement employing hazardous wastes as alternative fuels, measures are in place to ensure the safe handling of waste.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.8. Manufacture of aluminium

#### *Description of the activity*

Manufacture of aluminium through primary alumina (bauxite) process or secondary aluminium recycling.

The economic activities in this category could be associated with NACE code C24.42, C24.53 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(127)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(128)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(129)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected for grey cement clinker in the context of establishing the Commission Implementing Regulation (EU) 2021/447, multiplied by the clinker to cement ratio (0.65), determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(130)</sup> Commission Implementing Decision 2013/163/EU of 26 March 2013 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the production of cement, lime and magnesium oxide (OJ L 100, 9.4.2013, p. 1).

<sup>(131)</sup> See Best Available Techniques Reference Document (BREF) on Economics and Cross-Media Effects (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/ecm\\_bref\\_0706.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/ecm_bref_0706.pdf)).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:
  - (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(132)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(133)</sup>, scientific peer-reviewed publications and open source<sup>(134)</sup> or paying models.
4. The adaptation solutions implemented:
  - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions<sup>(135)</sup> or rely on blue or green infrastructure<sup>(136)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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<sup>(132)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(133)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(134)</sup> Such as Copernicus services managed by the European Commission.

<sup>(135)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(136)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

## Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity manufactures one of the following: (a) primary aluminium where the economic activity complies with two of the following criteria until 2025 and with all of the following criteria <sup>(137)</sup> after 2025: (i) the GHG emissions do not exceed 1,604 <sup>(138)</sup> tCO <sub>2</sub> e per ton of aluminium manufactured <sup>(139)</sup> ; (ii) the indirect GHG emissions do not exceed 270 g CO <sub>2</sub> e/kWh; (iii) the electricity consumption for the manufacturing process does not exceed 15,5 MWh/t Al; (b) secondary aluminium.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for the non-ferrous metals industries <sup>(140)</sup> . No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

**3.9. Manufacture of iron and steel***Description of the activity*

Manufacture of iron and steel.

The economic activities in this category could be associated with several NACE codes, in particular C24.10, C24.20, C24.31, C24.32, C24.33, C24.34, C24.51 and C24.52 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

## Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(137)</sup> Combined to a single threshold resulting in the sum of direct and indirect emissions, calculated as the median value of the data collected in the context of establishing the EU ETS industrial benchmarks for the period of 2021-2026 and calculated in accordance with the methodology for setting the benchmarks set out in Directive 2003/87/EC plus the do no significant harm to climate change mitigation criterion for electricity generation (270 g CO<sub>2</sub>e/kWh) multiplied by the average energy efficiency of aluminium manufacturing (15,5 MWh/t Al).

<sup>(138)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(139)</sup> The aluminium manufactured is the unwrought non alloy aluminium produced from electrolysis.

<sup>(140)</sup> Commission Implementing Decision (EU) 2016/1032 of 13 June 2016 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the non-ferrous metals industries (OJ L 174, 30.6.2016, p. 32).

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(141)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(142)</sup>, scientific peer-reviewed publications and open source<sup>(143)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(144)</sup> or rely on blue or green infrastructure<sup>(145)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(141)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(142)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(143)</sup> Such as Copernicus services managed by the European Commission.

<sup>(144)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(145)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



## Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>The activity manufactures one of the following:</p> <p>(a) iron and steel where GHG emissions<sup>(146)</sup>, reduced by the amount of emissions assigned to the production of waste gases in accordance with point 10.1.5(a) of Annex VII to Regulation (EU) 2019/331 do not exceed the following values applied to the different manufacturing process steps:</p> <p>(i) hot metal = 1,443<sup>(147)</sup> tCO<sub>2</sub>e/t product;</p> <p>(ii) sintered ore = 0,242<sup>(148)</sup> tCO<sub>2</sub>e/t product;</p> <p>(iii) coke (excluding lignite coke) = 0,237<sup>(149)</sup> tCO<sub>2</sub>e/t product;</p> <p>(iv) iron casting = 0,390<sup>(150)</sup> tCO<sub>2</sub>e/t product;</p> <p>(v) electric arc furnace (EAF) high alloy steel = 0,360<sup>(151)</sup> tCO<sub>2</sub>e/t product;</p> <p>(vi) electric arc furnace (EAF) carbon steel = 0,276<sup>(152)</sup> tCO<sub>2</sub>e/t product.</p> <p>(b) steel in electric arc furnaces (EAFs) producing EAF carbon steel or EAF high alloy steel as defined in Commission Delegated Regulation (EU) 2019/331 and where the steel scrap input relative to product output is:</p> <p>(i) at least 70 % for the production of high alloy steel</p> <p>(ii) at least 90 % for production of carbon steel.</p>
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(146)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(147)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(148)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(149)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(150)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(151)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(152)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for iron and steel production <sup>(153)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.10. Manufacture of hydrogen

#### *Description of the activity*

Manufacture of hydrogen and hydrogen-based synthetic fuels.

The economic activities in this category could be associated with NACE code C20.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(154)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(153)</sup> Commission Implementing Decision 2012/135/EU of 28 February 2012 establishing the best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for iron and steel production (OJ L 70, 8.3.2012, p. 63).

<sup>(154)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(155)</sup>, scientific peer-reviewed publications and open source<sup>(156)</sup> or paying models.
4. The adaptation solutions implemented:
- do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - favour nature-based solutions<sup>(157)</sup> or rely on blue or green infrastructure<sup>(158)</sup> to the extent possible;
  - are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>The activity complies with the life cycle GHG emissions savings requirement of 70 % relative to a fossil fuel comparator of 94 g CO<sub>2</sub>e/MJ as set out in Article 25(2) of Directive (EU) 2018/2001 of the European Parliament and of the Council<sup>(159)</sup> and Annex V to that Directive.</p> <p>Life cycle GHG emissions savings are calculated using the methodology referred to in Article 28(5) of Directive (EU) 2018/2001 or, alternatively, using ISO 14067:2018<sup>(160)</sup> or ISO 14064-1:2018<sup>(161)</sup>.</p> <p>Quantified life-cycle GHG emission savings are verified in line with Article 30 of Directive (EU) 2018/2001 where applicable, or by an independent third party.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>

<sup>(155)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(156)</sup> Such as Copernicus services managed by the European Commission.

<sup>(157)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(158)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(159)</sup> Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, p. 82).

<sup>(160)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (version of 4.6.2021: <https://www.iso.org/standard/71206.html>).

<sup>(161)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (version of 4.6.2021: <https://www.iso.org/standard/66453.html>).

(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the best available techniques (BAT) conclusions for the production of chlor-alkali<sup>(162)</sup> and the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector<sup>(163)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for the refining of mineral oil and gas<sup>(164)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.11. Manufacture of carbon black

#### *Description of the activity*

Manufacture of carbon black.

The economic activities in this category could be associated with NACE code C20.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

<sup>(162)</sup> Implementing Decision 2013/732/EU.

<sup>(163)</sup> Implementing Decision (EU) 2016/902.

<sup>(164)</sup> Implementing Decision 2014/738/EU.

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(165)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(166)</sup>, scientific peer-reviewed publications and open source<sup>(167)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions<sup>(168)</sup> or rely on blue or green infrastructure<sup>(169)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DHSH')

(1) Climate change mitigation	Greenhouse gas emissions <sup>(170)</sup> from the carbon black production processes are lower than 1,615 <sup>(171)</sup> tCO <sub>2</sub> e per tonne of product.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(165)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(166)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(167)</sup> Such as Copernicus services managed by the European Commission.

<sup>(168)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(169)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(170)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(171)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the the latest relevant best available techniques (BAT) conclusions, including:</p> <ul style="list-style-type: none"> <li>(a) the Best Available Techniques Reference Document (BREF) for the Large Volume Inorganic Chemicals- Solids and Others industry <sup>(172)</sup>;</li> <li>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(173)</sup>.</li> </ul> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p>

### 3.12. Manufacture of soda ash

#### *Description of the activity*

Manufacture of disodium carbonate (soda ash, sodium carbonate, carbonic acid disodium salt).

The economic activities in this category could be associated with NACE code C20.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(174)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(172)</sup> Best Available Techniques (BAT) Reference Document for the Large Volumes Inorganic Chemicals- Solids and Others industry (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s\\_bref\\_0907.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s_bref_0907.pdf) ).

<sup>(173)</sup> Implementing Decision (EU) 2016/902.

<sup>(174)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(175)</sup>, scientific peer-reviewed publications and open source<sup>(176)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(177)</sup> or rely on blue or green infrastructure<sup>(178)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	Greenhouse gas emissions <sup>(179)</sup> from the soda ash production processes are lower than 0,866 <sup>(180)</sup> tCO <sub>2</sub> e per tonne of product.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:  (a) the Best Available Techniques Reference Document (BREF) for the Large Volume Inorganic Chemicals- Solids and Others industry <sup>(181)</sup> ;

<sup>(175)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(176)</sup> Such as Copernicus services managed by the European Commission.

<sup>(177)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(178)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(179)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(180)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(181)</sup> Best Available Techniques (BAT) Reference Document for the Large Volumes Inorganic Chemicals- Solids and Others industry (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s\\_bref\\_0907.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic-s_bref_0907.pdf)).



	(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(182)</sup> .  No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.13. Manufacture of chlorine

#### *Description of the activity*

Manufacture of chlorine.

The economic activities in this category could be associated with NACE code C20.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(183)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(184)</sup>, scientific peer-reviewed publications and open source <sup>(185)</sup> or paying models.

<sup>(182)</sup> Implementing Decision (EU) 2016/902.

<sup>(183)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(184)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(185)</sup> Such as Copernicus services managed by the European Commission.

## 4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(186)</sup> or rely on blue or green infrastructure<sup>(187)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

## Do no significant harm ('DNSH')

(1) Climate change mitigation	Electricity consumption for electrolysis and chlorine treatment is equal or lower than 2,45 MWh per tonne of chlorine.  Average direct greenhouse gas emissions of the electricity used for chlorine production is at or lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex.  Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:  (a) the best available techniques (BAT) conclusions for the production of chlor-alkali <sup>(188)</sup> ;  (b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(189)</sup> .  No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix C to this Annex.

<sup>(186)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(187)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(188)</sup> Implementing Decision 2013/732/EU.

<sup>(189)</sup> Implementing Decision (EU) 2016/902.

### 3.14. **Manufacture of organic basic chemicals**

*Description of the activity*

Manufacture of:

(a) high value chemicals (HVC):

- (i) acetylene;
- (ii) ethylene;
- (iii) propylene;
- (iv) butadiene.

(b) Aromatics:

- (i) mixed alkylbenzenes, mixed alkylnaphthalenes other than HS 2707 or 2902;
- (ii) cyclohexane;
- (iii) benzene;
- (iv) toluene;
- (v) o-Xylene;
- (vi) p-Xylene;
- (vii) m-Xylene and mixed xylene isomers;
- (viii) ethylbenzene;
- (ix) cumene;
- (x) biphenyl, terphenyls, vinyltoluenes, other cyclic hydrocarbons excluding cyclanes, cyclenes, cycloterpenes, benzene, toluene, xylenes, styrene, ethylbenzene, cumene, naphthalene, anthracene;
- (xi) benzol (benzene), toluol (toluene) and xylol (xylenes);
- (xii) naphthalene and other aromatic hydrocarbon mixtures (excluding benzole, toluole, xylole).

(c) vinyl chloride;

(d) styrene;

(e) ethylene oxide;

(f) monoethylene glycol;

(g) adipic acid.

The economic activities in this category could be associated with NACE code C20.14 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(190)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(191)</sup>, scientific peer-reviewed publications and open source<sup>(192)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(193)</sup> or rely on blue or green infrastructure<sup>(194)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(190)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(191)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(192)</sup> Such as Copernicus services managed by the European Commission.

<sup>(193)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(194)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

## Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>GHG emissions <sup>(195)</sup> from the organic chemicals production processes are lower than:</p> <p>(a) for HVC: [0,851 <sup>(196)</sup>] tCO<sub>2</sub>e/t of HVC;</p> <p>(b) for aromatics: 0,0300 <sup>(197)</sup> tCO<sub>2</sub>e/t of complex weighted throughput;</p> <p>(c) for vinyl chloride: [0,268 <sup>(198)</sup>] tCO<sub>2</sub>e/t of vinyl chloride;</p> <p>(d) for styrene: 0,564 <sup>(199)</sup> tCO<sub>2</sub>e/t of styrene;</p> <p>(e) for ethylene oxide/ethylene glycols: 0,489 <sup>(200)</sup> tCO<sub>2</sub>e/t of ethylene oxide/glycol;</p> <p>(f) for adipic acid: 0,76 <sup>(201)</sup> tCO<sub>2</sub>e/t of adipic acid.</p> <p>Where the organic chemicals in scope are produced wholly or partially from renewable feedstock, the life-cycle GHG emissions of the manufactured chemical, manufactured wholly or partially from renewable feedstock, are lower than the life-cycle GHG emissions of the equivalent chemical manufactured from fossil fuel feedstock</p> <p>Agricultural biomass used for the manufacture of organic basic chemicals in its primary form complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used for the manufacture of organic basic chemicals complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.</p>
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the best available techniques (BAT) conclusions for the production of large volumes organic chemicals <sup>(202)</sup>;</p>

<sup>(195)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(196)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(197)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(198)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(199)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(200)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(201)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(202)</sup> Commission Implementing Decision (EU) 2017/2117 of 21 November 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the production of large volume organic chemicals (OJ L 323, 7.12.2017, p. 1).

	(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(203)</sup> .  No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.15. Manufacture of anhydrous ammonia

#### *Description of the activity*

Manufacture of anhydrous ammonia.

The economic activities in this category could be associated with NACE code C20.15 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(204)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(203)</sup> Implementing Decision (EU) 2016/902.

<sup>(204)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(205)</sup>, scientific peer-reviewed publications and open source<sup>(206)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(207)</sup> or rely on blue or green infrastructure<sup>(208)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>The activity complies with one of the following criteria:</p> <ul style="list-style-type: none"> <li>(a) the manufacturing of anhydrous ammonia has greenhouse gas emissions<sup>(209)</sup> lower than 1,948<sup>(210)</sup> tCO<sub>2</sub>e per tonne of anhydrous ammonia;</li> <li>(b) ammonia is recovered from waste water.</li> </ul>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>N/A</p>
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <ul style="list-style-type: none"> <li>(a) the Best Available Techniques Reference Document (BREF) for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers<sup>(211)</sup>;</li> </ul>

<sup>(205)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(206)</sup> Such as Copernicus services managed by the European Commission.

<sup>(207)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(208)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(209)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(210)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(211)</sup> Best Available Techniques (BAT) Reference Document for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic\\_aaf.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic_aaf.pdf)).



	(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(212)</sup> .  No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.16. Manufacture of nitric acid

#### *Description of the activity*

Manufacture of nitric acid.

The economic activities in this category could be associated with NACE code C20.15 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(213)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(212)</sup> Implementing Decision (EU) 2016/902.

<sup>(213)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(214)</sup>, scientific peer-reviewed publications and open source<sup>(215)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(216)</sup> or rely on blue or green infrastructure<sup>(217)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	GHG emissions <sup>(218)</sup> from the manufacture of nitric acid are lower than 0,184 <sup>(219)</sup> tCO <sub>2</sub> e per tonne of nitric acid.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including:</p> <ul style="list-style-type: none"> <li>(a) the Best Available Techniques Reference Document (BREF) for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers<sup>(220)</sup>;</li> </ul>

<sup>(214)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(215)</sup> Such as Copernicus services managed by the European Commission.

<sup>(216)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(217)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(218)</sup> Calculated in accordance with Regulation (EU) 2019/331.

<sup>(219)</sup> Reflecting the median value of the installations in 2016 and 2017 (t CO<sub>2</sub> equivalents/t) of the data collected in the context of establishing the Commission Implementing Regulation (EU) 2021/447, determined on the basis of verified information on the greenhouse gas efficiency of installations reported pursuant to Article 11 of Directive 2003/87/EC.

<sup>(220)</sup> Best Available Techniques (BAT) Reference Document for the manufacture of Large Volume Inorganic Chemicals - Ammonia, Acids and Fertilisers (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic\\_aaf.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/lvic_aaf.pdf)).

	(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(221)</sup> .  No significant cross-media effects occur.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 3.17. Manufacture of plastics in primary form

#### *Description of the activity*

Manufacture resins, plastics materials and non-vulcanisable thermoplastic elastomers, the mixing and blending of resins on a custom basis, as well as the manufacture of non-customised synthetic resins.

The economic activities in this category could be associated with NACE code C20.16 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(222)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(223)</sup>, scientific peer-reviewed publications and open source <sup>(224)</sup> or paying models.

<sup>(221)</sup> Implementing Decision (EU) 2016/902.

<sup>(222)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(223)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(224)</sup> Such as Copernicus services managed by the European Commission.

4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions<sup>(225)</sup> or rely on blue or green infrastructure<sup>(226)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation

The plastic in primary form is one of the following:

- (a) fully manufactured by mechanical recycling of plastic waste;
- (b) where mechanical recycling is not possible, fully manufactured by chemical recycling of plastic waste where the life-cycle greenhouse gas emissions of the manufactured plastic, excluding any calculated credits from the production of fuels, are lower than the life-cycle greenhouse gas emissions of the equivalent primary plastic manufactured from fossil fuel feedstock. Life-cycle greenhouse gas emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018<sup>(227)</sup> or ISO 14064-1:2018<sup>(228)</sup>. Quantified life-cycle GHG emissions are verified by an independent third party.
- (c) derived wholly or partially from renewable feedstock<sup>(229)</sup> where the life-cycle greenhouse gas emissions of the manufactured plastic in primary form, manufactured wholly or partially from renewable feedstock, is lower than the life-cycle greenhouse gas emissions of the equivalent plastics in primary form manufactured from fossil fuel feedstock. Life-cycle greenhouse gas emissions are calculated using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018. Quantified life-cycle GHG emissions are verified by an independent third party.

<sup>(225)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(226)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(227)</sup> ISO standard 14067:2018, Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification (<https://www.iso.org/standard/71206.html>).

<sup>(228)</sup> ISO standard 14064-1:2018, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (<https://www.iso.org/standard/66453.html>).

<sup>(229)</sup> Renewable feedstock refers to biomass, industrial bio-waste or municipal bio-waste.

	Agricultural biomass used for the manufacture of plastics in its primary form complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used for the manufacture of plastics in its primary form complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>The activity complies with the criteria set out in Appendix C to this Annex.</p> <p>Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the relevant best available techniques (BAT) conclusions, including:</p> <p>(a) the Best Available Techniques Reference Document (BREF) for the Production of Polymers <sup>(230)</sup>;</p> <p>(b) the best available techniques (BAT) conclusions for common waste water and waste gas treatment/management systems in the chemical sector <sup>(231)</sup>.</p> <p>No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4. ENERGY

##### 4.1. Electricity generation using solar photovoltaic technology

###### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity using solar photovoltaic (PV) technology.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

###### *Technical screening criteria*

###### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;

<sup>(230)</sup> Best Available Techniques (BAT) Reference Document for the Production of Polymers (version of 4.6.2021: [https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/pol\\_bref\\_0807.pdf](https://eippcb.jrc.ec.europa.eu/sites/default/files/2019-11/pol_bref_0807.pdf)).

<sup>(231)</sup> Implementing Decision (EU) 2016/902.

(b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;

(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

(a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(232)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(233)</sup>, scientific peer-reviewed publications and open source<sup>(234)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions<sup>(235)</sup> or rely on blue or green infrastructure<sup>(236)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A

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<sup>(232)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(233)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(234)</sup> Such as Copernicus services managed by the European Commission.

<sup>(235)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(236)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.2. Electricity generation using concentrated solar power (CSP) technology

##### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity using concentrated solar power (CSP) technology.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(237)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(238)</sup>, scientific peer-reviewed publications and open source<sup>(239)</sup> or paying models.

<sup>(237)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(238)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(239)</sup> Such as Copernicus services managed by the European Commission.



4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(240)</sup> or rely on blue or green infrastructure <sup>(241)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.3. Electricity generation from wind power

*Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from wind power.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(240)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(241)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(242)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(243)</sup>, scientific peer-reviewed publications and open source<sup>(244)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(245)</sup> or rely on blue or green infrastructure<sup>(246)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(242)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(243)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(244)</sup> Such as Copernicus services managed by the European Commission.

<sup>(245)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(246)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

Do no significant harm ('DNSH')	
(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	In case of construction of offshore wind, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 11 (Noise/Energy), laid down in Annex I to that Directive and as set out in Decision (EU)2017/848 in relation to the relevant criteria and methodological standards for that descriptor.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex <sup>(247)</sup>.</p> <p>In case of offshore wind, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity) and 6 (seabed integrity), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors.</p>

#### 4.4. Electricity generation from ocean energy technologies

##### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from ocean energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

<sup>(247)</sup> Practical guidance for the implementation of this criterion is contained in the European Commission notice C(2020) 7730 final 'Guidance document on wind energy developments and EU nature legislation' (version of 4.6.2021: [https://ec.europa.eu/environment/nature/natura2000/management/docs/wind\\_farms\\_en.pdf](https://ec.europa.eu/environment/nature/natura2000/management/docs/wind_farms_en.pdf)).

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(248)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(249)</sup>, scientific peer-reviewed publications and open source <sup>(250)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(251)</sup> or rely on blue or green infrastructure <sup>(252)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')	
(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 11 (Noise/Energy), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for that descriptor.

<sup>(248)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(249)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(250)</sup> Such as Copernicus services managed by the European Commission.

<sup>(251)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(252)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.
(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p> <p>The activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptor 1 (biodiversity), laid down in Annex I to that Directive, and as set out in Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for that descriptor.</p>

#### 4.5. Electricity generation from hydropower

##### *Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from hydropower.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(233)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(233)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(254)</sup>, scientific peer-reviewed publications and open source<sup>(255)</sup> or paying models.
4. The adaptation solutions implemented:
  - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions<sup>(256)</sup> or rely on blue or green infrastructure<sup>(257)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	<ol style="list-style-type: none"> <li>1. The activity complies with the provisions of Directive 2000/60/EC, in particular with all the requirements laid down in Article 4 of the Directive.</li> <li>2. For operation of existing hydropower plants, including refurbishment activities to enhance renewable energy or energy storage potential, the activity complies with the following criteria:                     <ol style="list-style-type: none"> <li>2.1. In accordance with Directive 2000/60/EC and in particular Articles 4 and 11 of that Directive, all technically feasible and ecologically relevant mitigation measures have been implemented to reduce adverse impacts on water as well as on protected habitats and species directly dependent on water.</li> <li>2.2. Measures include, where relevant and depending on the ecosystems naturally present in the affected water bodies:                             <ol style="list-style-type: none"> <li>(a) measures to ensure downstream and upstream fish migration (such as fish friendly turbines, fish guidance structures, state-of-the-art fully functional fish passes, measures to stop or minimise operation and discharges during migration or spawning);</li> </ol> </li> </ol> </li> </ol>

<sup>(254)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(255)</sup> Such as Copernicus services managed by the European Commission.

<sup>(256)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(257)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(b) measures to ensure minimum ecological flow (including mitigation of rapid, short-term variations in flow or hydro-peaking operations) and sediment flow;

(c) measures to protect or enhance habitats.

2.3. The effectiveness of those measures is monitored in the context of the authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body.

3. For construction of new hydropower plants, the activity complies with the following criteria:

3.1. In accordance with Article 4 of Directive 2000/60/EC and in particular paragraph 7 of that Article, prior to construction, an impact assessment of the project is carried out to assess all its potential impacts on the status of water bodies within the same river basin and on protected habitats and species directly dependent on water, considering in particular migration corridors, free-flowing rivers or ecosystems close to undisturbed conditions.

The assessment is based on recent, comprehensive and accurate data, including monitoring data on biological quality elements that are specifically sensitive to hydromorphological alterations, and on the expected status of the water body as a result of the new activities, as compared to its current one.

It assesses in particular the cumulated impacts of this new project with other existing or planned infrastructure in the river basin.

3.2. On the basis of that impact assessment, it has been established that the plant is conceived, by design and location and by mitigation measures, so that it complies with one of the following requirements:

(a) the plant does not entail any deterioration nor compromises the achievement of good status or potential of the specific water body it relates to;

(b) where the plant risks to deteriorate or compromise the achievement of good status/potential of the specific water body it relates to, such deterioration is not significant, and is justified by a detailed cost-benefit assessment demonstrating both of the following:

(i) the reasons of overriding public interest or the fact that benefits expected from the planned hydropower plant outweigh the costs from deteriorating the status of water that are accruing to the environment and to society;

(ii) the fact that the overriding public interest or the benefits expected from the plant cannot, for reasons of technical feasibility or disproportionate cost, be achieved by alternative means that would lead to a better environmental outcome (such as refurbishing of existing hydropower plants or use of technologies not disrupting river continuity).



	<p>3.3. All technically feasible and ecologically relevant mitigation measures are implemented to reduce adverse impacts on water as well as on protected habitats and species directly dependent on water.</p> <p>Mitigation measures include, where relevant and depending on the ecosystems naturally present in the affected water bodies:</p> <ul style="list-style-type: none"> <li>(a) measures to ensure downstream and upstream fish migration (such as fish friendly turbines, fish guidance structures, state-of the-art fully functional fish passes, measures to stop or minimise operation and discharges during migration or spawning);</li> <li>(b) measures to ensure minimum ecological flow (including mitigation of rapid, short-term variations in flow or hydro-peaking operations) and sediment flow;</li> <li>(c) measures to protect or enhance habitats.</li> </ul> <p>The effectiveness of those measures is monitored in the context of the authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body.</p> <p>3.4. The plant does not permanently compromise the achievement of good status/potential in any of the water bodies in the same river basin district.</p> <p>3.5. In addition to the mitigation measures referred to above, and where relevant, compensatory measures are implemented to ensure that the project does not increase the fragmentation of water bodies in the same river basin district. This is achieved by restoring continuity within the same river basin district to an extent that compensates the disruption of continuity, which the planned hydropower plant may cause. Compensation starts prior to the execution of the project.</p>
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex <sup>(258)</sup> .

**4.6. Electricity generation from geothermal energy**

*Description of the activity*

Construction or operation of electricity generation facilities that produce electricity from geothermal energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(258)</sup> Practical guidance is contained in Commission notice C/2018/2619 ‘Guidance document on the requirements for hydropower in relation to EU nature legislation’ (OJ C 213, 18.6.2018, p. 1).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(259)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(260)</sup>, scientific peer-reviewed publications and open source<sup>(261)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(262)</sup> or rely on blue or green infrastructure<sup>(263)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

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<sup>(259)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(260)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(261)</sup> Such as Copernicus services managed by the European Commission.

<sup>(262)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(263)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	For the operation of high-enthalpy geothermal energy systems, adequate abatement systems are in place to reduce emission levels in order not to hamper the achievement of air quality limit values set out in Directive 2004/107/EC and Directive 2008/50/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.7. Electricity generation from renewable non-fossil gaseous and liquid fuels

*Description of the activity*

Construction or operation of electricity generation facilities that produce electricity using gaseous and liquid fuels of renewable origin. This activity does not include electricity generation from the exclusive use of biogas and bio-liquid fuels (see Section 4.8 of this Annex).

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(264)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(265)</sup>, scientific peer-reviewed publications and open source<sup>(266)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(267)</sup> or rely on blue or green infrastructure<sup>(268)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A

<sup>(264)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(265)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(266)</sup> Such as Copernicus services managed by the European Commission.

<sup>(267)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(268)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(5) Pollution prevention and control	Emissions are within or lower than the emissions levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(269)</sup> . No significant cross-media effects occur.  For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.8. Electricity generation from bioenergy

##### *Description of the activity*

Construction and operation of electricity generation installations that produce electricity exclusively from biomass, biogas or bioliquids, excluding electricity generation from blending of renewable fuels with biogas or bioliquids (see Section 4.7 of this Annex).

The economic activities in this category could be associated with NACE code D35.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(270)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(269)</sup> Commission Implementing Decision (EU) 2017/1442 of 31 July 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants (OJ L 212, 17.8.2017, p. 1).

<sup>(270)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(271)</sup>, scientific peer-reviewed publications and open source<sup>(272)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(273)</sup> or rely on blue or green infrastructure<sup>(274)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(2) Climate change mitigation	The activity meets the requirements relating to sustainability, greenhouse gas emission savings and efficiency laid down in Article 29 of Directive 2018/2001.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	For installations falling within the scope of Directive 2010/75/EU of the European Parliament and of the Council <sup>(275)</sup> , emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(276)</sup> . No significant cross-media effects occur.

<sup>(271)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(272)</sup> Such as Copernicus services managed by the European Commission.

<sup>(273)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(274)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(275)</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17).

<sup>(276)</sup> Implementing Decision (EU) 2017/1442.

	<p>For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193. For plants in zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, measures are implemented to reduce emission levels taking into account the results of the information exchange<sup>(277)</sup> which are published by the Commission in accordance with Article 6, paragraphs 9 and 10, of Directive (EU) 2015/2193.</p> <p>For anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment<sup>(278)</sup>. No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.9. Transmission and distribution of electricity

##### *Description of the activity*

Construction and operation of transmission systems that transport electricity on the extra high-voltage and high-voltage interconnected system.

Construction and operation of distribution systems that transport electricity on high-voltage, medium-voltage and low-voltage distribution systems.

The economic activities in this category could be associated with several NACE codes, in particular D35.12 and D35.13 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(277)</sup> The final technology report resulting from the exchange of information with Member States, the industries concerned and non-governmental organisations contains technical information on best available technologies used in medium combustion plants to reduce their environmental impacts, and on the emission levels achievable with best available and emerging technologies and the related costs (version of 4.6.2021: <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/9a99a632-9ba8-4cc0-9679-08d929afda59/details>).

<sup>(278)</sup> Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council (OJ L 208, 17.8.2018, p. 38).



2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(279)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(280)</sup>, scientific peer-reviewed publications and open source <sup>(281)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(282)</sup> or rely on blue or green infrastructure <sup>(283)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(279)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(280)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(281)</sup> Such as Copernicus services managed by the European Commission.

<sup>(282)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(283)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

Do no significant harm ('DNSH')

(1) Climate change mitigation	The infrastructure is not dedicated to creating a direct connection, or expanding an existing direct connection to a power production plant where the direct greenhouse gas emissions exceed 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse or recycling at end of life in accordance with the waste hierarchy, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	Overground high voltage lines:  (a) for construction site activities, activities follow the principles of the International Finance Corporation (IFC) General Environmental, Health, and Safety Guidelines <sup>(284)</sup> .  (b) activities respect applicable norms and regulations to limit impact of electromagnetic radiation on human health, including for activities carried out in the Union, the Council recommendation on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) <sup>(285)</sup> and for activities carried out in third countries the 1998 Guidelines of International Commission on Non-Ionizing Radiation Protection (ICNIRP) <sup>(286)</sup> .  Activities do not use PCBs polychlorinated biphenyls.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex <sup>(287)</sup> .

#### 4.10. Storage of electricity

##### *Description of the activity*

Construction and operation of facilities that store electricity and return it at a later time in the form of electricity. The activity includes pumped hydropower storage.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category have no dedicated NACE code as referred to in the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(284)</sup> Environmental, Health, and Safety (EHS) Guidelines of 30 April 2007 (version of 4.6.2021: <https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=jOWim3p>).

<sup>(285)</sup> Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC) (OJ L 199, 30.7.1999, p. 59).

<sup>(286)</sup> ICNIRP 1998 Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 ghz) (version of 4.6.2021: <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>).

<sup>(287)</sup> Practical guidance for the implementation of this criterion is contained in the European Commission notice C(2018)2620 'Energy transmission infrastructure and EU nature legislation' (OJ C 213, 18.6.2018, p. 62).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(288)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(289)</sup>, scientific peer-reviewed publications and open source<sup>(290)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(291)</sup> or rely on blue or green infrastructure<sup>(292)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

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<sup>(288)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(289)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(290)</sup> Such as Copernicus services managed by the European Commission.

<sup>(291)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(292)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	For pumped hydropower storage not connected to a river body, the activity complies with the criteria set out in Appendix B to this Annex.  For hydropower storage connected to a river body, the activity complies with the criteria for DNSH to sustainable use and protection of water and marine resources specified in Section 4.5 (Electricity production from hydropower).
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse or recycling at end of life in accordance with the waste hierarchy, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.11. Storage of thermal energy

##### *Description of the activity*

Construction and operation of facilities that store thermal energy and return it at a later time, in the form of thermal energy or other energy vectors.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category have no dedicated NACE code as referred to in the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

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##### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

<sup>(288)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(293)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(294)</sup>, scientific peer-reviewed publications and open source<sup>(295)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(296)</sup> or rely on blue or green infrastructure<sup>(297)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	For Aquifer Thermal Energy Storage, the activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	N/A

<sup>(293)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(294)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(295)</sup> Such as Copernicus services managed by the European Commission.

<sup>(296)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(297)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.
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#### 4.12. Storage of hydrogen

##### *Description of the activity*

Construction and operation of facilities that store hydrogen and return it at a later time.

The economic activities in this category have no dedicated NACE code in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(298)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(299)</sup>, scientific peer-reviewed publications and open source<sup>(300)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(298)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(299)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(300)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions<sup>(301)</sup> or rely on blue or green infrastructure<sup>(302)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	In the case of storage above five tonnes, the activity complies with Directive 2012/18/EU.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.1.3. Manufacture of biogas and biofuels for use in transport and of bioliquids

*Description of the activity*

Manufacture of biogas or biofuels for use in transport and of bioliquids.

The economic activities in this category could be associated with NACE code D35.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;

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<sup>(301)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(302)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



(b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;

(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

(a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(303)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(304)</sup>, scientific peer-reviewed publications and open source<sup>(305)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions<sup>(306)</sup> or rely on blue or green infrastructure<sup>(307)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity meets the requirements relating to sustainability, greenhouse gas emission savings and efficiency laid down in Article 29 of Directive 2018/2001.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.

<sup>(303)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(304)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(305)</sup> Such as Copernicus services managed by the European Commission.

<sup>(306)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(307)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For biogas production, a gas-tight cover on the digestate storage is applied.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(308)</sup>. No significant cross-media effects occur.</p> <p>In case of anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 for digestate or CMC 3 for compost, as applicable, in Annex II to Regulation EU 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.14. Transmission and distribution networks for renewable and low-carbon gases

##### *Description of the activity*

Conversion, repurposing or retrofit of gas networks for the transmission and distribution of renewable and low-carbon gases.

Construction or operation of transmission and distribution pipelines dedicated to the transport of hydrogen and other low-carbon gases.

The economic activities in this category could be associated with several NACE codes, in particular D35.21, F42.21 and H49.50 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

<sup>(308)</sup> Implementing Decision (EU) 2018/1147.

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(309)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(310)</sup>, scientific peer-reviewed publications and open source<sup>(311)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions<sup>(312)</sup> or rely on blue or green infrastructure<sup>(313)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The repurposing does not increase gas transmission and distribution capacity.  The repurposing does not extend the lifespan of the networks beyond their pre-retrofit projected lifespan, unless the network is dedicated to hydrogen or other low-carbon gases.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Fans, compressors, pumps and other equipment used which is covered by Directive 2009/125/EC comply, where relevant, with the top class requirements of the energy label, and with implementing regulations under that Directive and represent the best available technology.

<sup>(309)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(310)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(311)</sup> Such as Copernicus services managed by the European Commission.

<sup>(312)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(313)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.
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#### 4.15. District heating/cooling distribution

##### *Description of the activity*

Construction, refurbishment and operation of pipelines and associated infrastructure for distribution of heating and cooling, ending at the sub-station or heat exchanger.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(314)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(315)</sup>, scientific peer-reviewed publications and open source<sup>(316)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(314)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(315)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(316)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions<sup>(317)</sup> or rely on blue or green infrastructure<sup>(318)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Fans, compressors, pumps and other equipment used which is covered by Directive 2009/125/EC comply, where relevant, with the top class requirements of the energy label, and otherwise comply with implementing regulations under that Directive and represent the best available technology.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.16. Installation and operation of electric heat pumps

##### *Description of the activity*

Installation and operation of electric heat pumps.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with several NACE codes, in particular D35.30, F43.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

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##### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(317)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(318)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(319)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(320)</sup>, scientific peer-reviewed publications and open source<sup>(321)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(322)</sup> or rely on blue or green infrastructure<sup>(323)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
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<sup>(319)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(320)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(321)</sup> Such as Copernicus services managed by the European Commission.

<sup>(322)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(323)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.  A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.
(5) Pollution prevention and control	For air to air heat pumps with rated capacity of 12kW or below, indoor and outdoor sound power levels are below the threshold set out in Regulation (EU) No 206/2012.
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 4.17. Cogeneration of heat/cool and power from solar energy

##### *Description of the activity*

Construction and operation of a facility co-generating electricity and heat/cool from solar energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(324)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(324)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.



3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(325)</sup>, scientific peer-reviewed publications and open source<sup>(326)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(327)</sup> or rely on blue or green infrastructure<sup>(328)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.18. Cogeneration of heat/cool and power from geothermal energy

*Description of the activity*

Construction and operation of facilities co-generating heat/cool and power from geothermal energy.

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(325)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(326)</sup> Such as Copernicus services managed by the European Commission.

<sup>(327)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(328)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(329)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(330)</sup>, scientific peer-reviewed publications and open source<sup>(331)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(332)</sup> or rely on blue or green infrastructure<sup>(333)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

<sup>(329)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(330)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(331)</sup> Such as Copernicus services managed by the European Commission.

<sup>(332)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(333)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	For the operation of high-enthalpy geothermal energy systems, adequate abatement systems are in place to reduce emission levels in order not to hamper the achievement of air quality limit values set out in Directives 2004/107/EC and 2008/50/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.19. Cogeneration of heat/cool and power from renewable non-fossil gaseous and liquid fuels

*Description of the activity*

Construction and operation of combined heat/cool and power generation facilities using gaseous and liquid fuels of renewable origin. This activity does not include cogeneration of heat/cool and power from the exclusive use of biogas and bio-liquid fuels (see Section 4.20 of this Annex).

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

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<sup>(329)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(334)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(335)</sup>, scientific peer-reviewed publications and open source <sup>(336)</sup> or paying models.
4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(337)</sup> or rely on blue or green infrastructure <sup>(338)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(339)</sup> . No significant cross-media effects occur.

<sup>(334)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(335)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(336)</sup> Such as Copernicus services managed by the European Commission.

<sup>(337)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(338)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(339)</sup> Implementing Decision (EU) 2017/1442.

	For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.20. Cogeneration of heat/cool and power from bioenergy

##### *Description of the activity*

Construction and operation of installations used for cogeneration of heat/cool and power exclusively from biomass, biogas, or bioliquids, excluding cogeneration from blending of renewable fuels with biogas or bioliquids (see Section 4.19 of this Annex).

The economic activities in this category could be associated with several NACE codes, in particular D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(340)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(341)</sup>, scientific peer-reviewed publications and open source<sup>(342)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(340)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(341)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(342)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions<sup>(343)</sup> or rely on blue or green infrastructure<sup>(344)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	The activity meets the requirements relating to sustainability, greenhouse gas emission savings and efficiency laid down in Article 29 of Directive 2018/2001.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For installations falling within the scope of Directive 2010/75/EU, emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants<sup>(345)</sup>, ensuring at the same time that no significant cross-media effects occur.</p> <p>For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.</p> <p>For plants in zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, results of the information exchange<sup>(346)</sup>, which are published by the Commission in accordance with Article 6, paragraphs 9 and 10, of Directive (EU) 2015/2193 are taken into account.</p>

<sup>(343)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(344)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(345)</sup> Implementing Decision (EU) 2017/1442.

<sup>(346)</sup> The final technology report resulting from the exchange of information with Member States, the industries concerned and non-governmental organisations contains technical information on best available technologies used in medium combustion plants to reduce their environmental impacts, and on the emission levels achievable with best available and emerging technologies and the related costs (version of 4.6.2021: <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/9a99a632-9ba8-4cc0-9679-08d929afda59/details>).

	<p>In case of anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(347)</sup>. No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.21. Production of heat/cool from solar thermal heating

##### *Description of the activity*

Construction and operation of facilities producing heat/cool from solar thermal heating technology.

Where an economic activity is an integral element of the 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(348)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(347)</sup> Implementing Decision (EU) 2018/1147.

<sup>(348)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.



3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(349)</sup>, scientific peer-reviewed publications and open source<sup>(350)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(351)</sup> or rely on blue or green infrastructure<sup>(352)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.22. Production of heat/cool from geothermal energy

*Description of the activity*

Construction and operation of facilities that produce heat/cool from geothermal energy.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(349)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(350)</sup> Such as Copernicus services managed by the European Commission.

<sup>(351)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(352)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(353)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(354)</sup>, scientific peer-reviewed publications and open source<sup>(355)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(356)</sup> or rely on blue or green infrastructure<sup>(357)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

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<sup>(353)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(354)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(355)</sup> Such as Copernicus services managed by the European Commission.

<sup>(356)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(357)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	For the operation of high-enthalpy geothermal energy systems, adequate abatement systems are in place to reduce emission levels in order not to hamper the achievement of air quality limit values set out in Directives 2004/107/EC and 2008/50/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.23. Production of heat/cool from renewable non-fossil gaseous and liquid fuels

*Description of the activity*

Construction and operation of heat generation facilities that produce heating/cool using gaseous and liquid fuels of renewable origin. This activity does not include production of heat/cool from the exclusive use of biogas and bio-liquid fuels (see Section 4.24 of this Annex).

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(358)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(359)</sup>, scientific peer-reviewed publications and open source <sup>(360)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions <sup>(361)</sup> or rely on blue or green infrastructure <sup>(362)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO <sub>2</sub> e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(363)</sup> . No significant cross-media effects occur.

<sup>(358)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(359)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(360)</sup> Such as Copernicus services managed by the European Commission.

<sup>(361)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(362)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(363)</sup> Implementing Decision (EU) 2017/1442.

	For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the Emission Limit Values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.24. Production of heat/cool from bioenergy

##### *Description of the activity*

Construction and operation of facilities that produce heat/cool exclusively from biomass, biogas or bioliquids, excluding production of heat/cool from blending of renewable fuels with biogas or bioliquids (see Section 4.23 of this Annex).

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(364)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(365)</sup>, scientific peer-reviewed publications and open source<sup>(366)</sup> or paying models.

<sup>(364)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(365)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(366)</sup> Such as Copernicus services managed by the European Commission.

## 4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(367)</sup> or rely on blue or green infrastructure <sup>(368)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

## Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity meets the requirements relating to sustainability, greenhouse gas emission savings and efficiency laid down in Article 29 of Directive 2018/2001.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For installations falling within the scope of Directive 2010/75/EU, emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants <sup>(369)</sup>, ensuring at the same time that no significant cross-media effects occur.</p> <p>For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.</p> <p>For plants in zones or parts of zones not complying with the air quality limit values laid down in Directive 2008/50/EC, results of the information exchange <sup>(370)</sup>, which are published by the Commission in accordance with Article 6, paragraphs 9 and 10 of Directive (EU) 2015/2193 are taken into account.</p>

<sup>(367)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(368)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(369)</sup> Implementing Decision (EU) 2017/1442.

<sup>(370)</sup> The final technology report resulting from the exchange of information with Member States, the industries concerned and non-governmental organisations contains technical information on best available technologies used in medium combustion plants to reduce their environmental impacts, and on the emission levels achievable with best available and emerging technologies and the related costs (version of 4.6.2021: <https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/9a99a632-9ba8-4cc0-9679-08d929afda59/details>).

	<p>For anaerobic digestion of organic material, where the produced digestate is used as fertiliser or soil improver, either directly or after composting or any other treatment, it meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p> <p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(371)</sup>. No significant cross-media effects occur.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 4.25. Production of heat/cool using waste heat

##### *Description of the activity*

Construction and operation of facilities that produce heat/cool using waste heat.

The economic activities in this category could be associated with NACE code D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(372)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(371)</sup> Implementing Decision (EU) 2018/1147.

<sup>(372)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.



3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(373)</sup>, scientific peer-reviewed publications and open source<sup>(374)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(375)</sup> or rely on blue or green infrastructure<sup>(376)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.
(5) Pollution prevention and control	Pumps and the kind of equipment used, which is covered by Ecodesign and Energy labelling comply, where relevant, with the top class requirements of the energy label laid down in Regulation (EU) 2017/1369, and with implementing regulations under Directive 2009/125/EC and represent the best available technology.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(373)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(374)</sup> Such as Copernicus services managed by the European Commission.

<sup>(375)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services ([https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(376)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

## 5. WATER SUPPLY, SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES

5.1. **Construction, extension and operation of water collection, treatment and supply systems***Description of the activity*

Construction, extension and operation of water collection, treatment and supply systems.

The economic activities in this category could be associated with several NACE codes, in particular E36.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

## Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(377)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(378)</sup>, scientific peer-reviewed publications and open source<sup>(379)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(377)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(378)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(379)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions <sup>(380)</sup> or rely on blue or green infrastructure <sup>(381)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

## 5.2. Renewal of water collection, treatment and supply systems

### *Description of the activity*

Renewal of water collection, treatment and supply systems including renewals to water collection, treatment and distribution infrastructures for domestic and industrial needs. It implies no material changes to the volume of flow collected, treated or supplied.

The economic activities in this category could be associated with several NACE codes, in particular E36.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;

<sup>(380)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(381)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(382)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(383)</sup>, scientific peer-reviewed publications and open source <sup>(384)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(385)</sup> or rely on blue or green infrastructure <sup>(386)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')	
(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(382)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(383)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(384)</sup> Such as Copernicus services managed by the European Commission.

<sup>(385)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(386)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

### 5.3. Construction, extension and operation of waste water collection and treatment

#### *Description of the activity*

Construction, extension and operation of centralised waste water systems including collection (sewer network) and treatment.

The economic activities in this category could be associated with several NACE codes, in particular E37.00 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(387)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(388)</sup>, scientific peer-reviewed publications and open source<sup>(389)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

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<sup>(387)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(388)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(389)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions <sup>(390)</sup> or rely on blue or green infrastructure <sup>(391)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	An assessment of the direct GHG emissions from the centralised waste water system, including collection (sewer network) and treatment, has been performed <sup>(392)</sup> . The results are disclosed to investors and clients on demand.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.  Where the waste water is treated to a level suitable for reuse in agricultural irrigation, the required risk management actions to avoid adverse environmental impacts have been defined and implemented <sup>(393)</sup> .
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Discharges to receiving waters meet the requirements laid down in Directive 91/271/EEC or as required by national provisions stating maximum permissible pollutant levels from discharges to receiving waters.  Appropriate measures have been implemented to avoid and mitigate excessive storm water overflows from the waste water collection system, which may include nature-based solutions, separate storm water collection systems, retention tanks and treatment of the first flush.  Sewage sludge is used in accordance with Directive 86/278/EEC or as required by national law relating to the spreading of sludge on the soil or any other application of sludge on and in the soil.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 5.4. Renewal of waste water collection and treatment

##### *Description of the activity*

Renewal of centralised waste water systems including collection (sewer network) and treatment. It implies no material change related to the load or volume of flow collected or treated in the waste water system.

The economic activities in this category could be associated with NACE code E37.00 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(390)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(391)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(392)</sup> For example, following IPCC guidelines for national GHG inventories for waste water treatment (version of 4.6.2021: [https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5\\_Volume5/19R\\_V5\\_6\\_Ch06\\_Wastewater.pdf](https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5_Volume5/19R_V5_6_Ch06_Wastewater.pdf)).

<sup>(393)</sup> As specified in Annex II of Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(394)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(395)</sup>, scientific peer-reviewed publications and open source<sup>(396)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(397)</sup> or rely on blue or green infrastructure<sup>(398)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

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<sup>(394)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(395)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(396)</sup> Such as Copernicus services managed by the European Commission.

<sup>(397)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(398)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	An assessment of the direct GHG emissions from the centralised waste water system, including collection (sewer network) and treatment, has been performed <sup>(399)</sup> . The results are disclosed to investors and clients on demand.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.  Where the waste water is treated to a level suitable for reuse in agricultural irrigation, the required risk management actions to avoid adverse environmental impacts have been defined and implemented <sup>(400)</sup> .
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Discharges to receiving waters meet the requirements laid down in Directive 91/271/EEC or as required by national provisions stating maximum permissible pollutant levels from discharges to receiving waters.  Appropriate measures have been implemented to avoid and mitigate excessive storm water overflows from the waste water collection system, which may include nature-based solutions, separate storm water collection systems, retention tanks and treatment of the first flush.  Sewage sludge is used in accordance with Directive 86/278/EEC or as required by national law relating to the spreading of sludge on the soil or any other application of sludge on and in the soil.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 5.5. Collection and transport of non-hazardous waste in source segregated fractions

*Description of the activity*

Separate collection and transport of non-hazardous waste in single or comingled fractions <sup>(401)</sup> aimed at preparing for reuse or recycling.

The economic activities in this category could be associated with NACE code E38.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(399)</sup> For example, following IPCC guidelines for national GHG inventories for waste water treatment (version of 4.6.2021: [https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5\\_Volume5/19R\\_V5\\_6\\_Ch06\\_Wastewater.pdf](https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/5_Volume5/19R_V5_6_Ch06_Wastewater.pdf)).

<sup>(400)</sup> As specified in Annex II to Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse (OJ L 177, 5.6.2020, p. 32).

<sup>(401)</sup> In the Union, the activity is in line with Article 10(3) of Directive 2008/98/EC and the national legislation and waste management plans.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(402)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(403)</sup>, scientific peer-reviewed publications and open source<sup>(404)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(405)</sup> or rely on blue or green infrastructure<sup>(406)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A

<sup>(402)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(403)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(404)</sup> Such as Copernicus services managed by the European Commission.

<sup>(405)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(406)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	Separately collected waste fractions are not mixed in waste storage and transfer facilities with other waste or materials with different properties.
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 5.6. Anaerobic digestion of sewage sludge

##### *Description of the activity*

Construction and operation of facilities for the treatment of sewage sludge by anaerobic digestion with the resulting production and utilisation of biogas or chemicals.

The economic activities in this category could be associated with several NACE codes, in particular E37.00 and F42.00 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(407)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(408)</sup>, scientific peer-reviewed publications and open source<sup>(409)</sup> or paying models.

<sup>(407)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(408)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(409)</sup> Such as Copernicus services managed by the European Commission.

## 4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(410)</sup> or rely on blue or green infrastructure <sup>(411)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

## Do no significant harm ('DNSH')

(1) Climate change mitigation	A monitoring plan is in place for methane leakage at the facility.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Emissions are within or lower than the emission levels associated with the best available technique (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(412)</sup> . No significant cross-media effects occur.  Where the resulting digestate is intended for use as fertiliser or soil improver, its nitrogen content (with tolerance level $\pm 25\%$ ) is communicated to the buyer or the entity in charge of taking off the digestate.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

## 5.7. Anaerobic digestion of bio-waste

*Description of the activity*

Construction or operation of dedicated facilities for the treatment of separately collected bio-waste <sup>(413)</sup> through anaerobic digestion with the resulting production and utilisation of biogas and digestate or chemicals.

The economic activities in this category could be associated with several NACE codes, in particular E38.21 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(410)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(411)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(412)</sup> Implementing Decision (EU) 2018/1147.

<sup>(413)</sup> As defined in Article 3, point 4, of Directive 2008/98/EC.

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(414)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(415)</sup>, scientific peer-reviewed publications and open source<sup>(416)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(417)</sup> or rely on blue or green infrastructure<sup>(418)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

<sup>(414)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(415)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(416)</sup> Such as Copernicus services managed by the European Commission.

<sup>(417)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(418)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	A monitoring and contingency plan is in place in order to minimise methane leakage at the facility.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	<p>For anaerobic digestion plants treating over 100 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available technique (BAT-AEL) ranges set for anaerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(419)</sup>. No significant cross-media effects occur.</p> <p>The produced digestate meets the requirements for fertilising materials set out in Component Material Categories (CMC) 4 and 5 for digestate or CMC 3 for compost, as applicable, in Annex II to Regulation (EU) 2019/1009, or national rules on fertilisers or soil improvers for agricultural use.</p> <p>The Nitrogen content (with tolerance level <math>\pm 25\%</math>) of the digestate used as fertiliser or soil improver is communicated to the buyer or the entity in charge of taking off the digestate.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 5.8. Composting of bio-waste

*Description of the activity*

Construction or operation of dedicated facilities for the treatment of separately collected bio-waste through composting (aerobic digestion) with the resulting production and utilisation of compost <sup>(420)</sup>.

The economic activities in this category could be associated with several NACE codes, in particular E38.21 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;

<sup>(419)</sup> Implementing Decision (EU) 2018/1147.

<sup>(420)</sup> Bio-waste is defined in Article 3, point 4, of Directive 2008/98/EC.

- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(421)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(422)</sup>, scientific peer-reviewed publications and open source <sup>(423)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(424)</sup> or rely on blue or green infrastructure <sup>(425)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A

<sup>(421)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(422)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(423)</sup> Such as Copernicus services managed by the European Commission.

<sup>(424)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(425)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



(5) Pollution prevention and control	<p>For composting plants treating over 75 tonnes per day, emissions to air and water are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out for aerobic treatment of waste in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for waste treatment <sup>(426)</sup>. No significant cross-media effects occur.</p> <p>The site has a system in place that prevents leachate reaching groundwater.</p> <p>The compost produced meets the requirements for fertilising materials set out in Component Material Category 3 in Annex II to Regulation (EU) 2019/1009 or national rules on fertilisers or soil improvers for agricultural use.</p>
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 5.9. Material recovery from non-hazardous waste

#### *Description of the activity*

Construction and operation of facilities for the sorting and processing of separately collected non-hazardous waste streams into secondary raw materials involving mechanical reprocessing, except for backfilling purposes.

The economic activities in this category could be associated with several NACE codes, in particular E38.32 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(427)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(426)</sup> Implementing Decision (EU) 2018/1147.

<sup>(427)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(428)</sup>, scientific peer-reviewed publications and open source<sup>(429)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(430)</sup> or rely on blue or green infrastructure<sup>(431)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 5.10. Landfill gas capture and utilisation

*Description of the activity*

Installation and operation of infrastructure for landfill<sup>(432)</sup> gas capture and utilisation in permanently closed landfills or landfill cells using new or supplementary dedicated technical facilities and equipment installed during or post landfill or landfill cell closure.

The economic activities in this category could be associated with NACE code E38.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(428)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(429)</sup> Such as Copernicus services managed by the European Commission.

<sup>(430)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(431)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(432)</sup> 'Landfill' is defined in Article 2, point g, of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(433)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(434)</sup>, scientific peer-reviewed publications and open source<sup>(435)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(436)</sup> or rely on blue or green infrastructure<sup>(437)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
    - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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<sup>(433)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(434)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(435)</sup> Such as Copernicus services managed by the European Commission.

<sup>(436)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(437)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

Do no significant harm ('DNSH')	
(1) Climate change mitigation	A monitoring plan is in place for methane leakage at the facility.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The permanent closure and remediation as well as the after-care of old landfills, where the landfill gas capture system is installed, are carried out in accordance with the following rules:  (a) general requirements set out in Annex I to Directive 1999/31/EC;  (b) control and monitoring procedures set out in Annex III to that Directive.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 5.11. Transport of CO<sub>2</sub>

#### *Description of the activity*

Transport of captured CO<sub>2</sub> via all modes, construction and operation of CO<sub>2</sub> pipelines and retrofit of gas networks where the main purpose is the integration of captured CO<sub>2</sub> and where:

- (a) the CO<sub>2</sub> transported from the installation where it is captured to the injection point does not lead to CO<sub>2</sub> leakages above 0.5 % of the mass of CO<sub>2</sub> transported;
- (b) the CO<sub>2</sub> is delivered to a permanent CO<sub>2</sub> storage site that meets the criteria for underground geological storage of CO<sub>2</sub> set out in section 5.12 of this Annex; or to other transport modalities, which lead to permanent CO<sub>2</sub> storage site that meet those criteria;
- (c) appropriate leak detection systems are applied and a monitoring plan is in place, with the report verified by an independent third party;
- (d) the activity may include the installation of assets that increase the flexibility and improve the management of an existing network.

The activity could be associated with several NACE codes, in particular F42.21 and H49.50 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;

- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(438)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(439)</sup>, scientific peer-reviewed publications and open source<sup>(440)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(441)</sup> or rely on blue or green infrastructure<sup>(442)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	A monitoring plan is in place for CO <sub>2</sub> leakages.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

<sup>(438)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(439)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(440)</sup> Such as Copernicus services managed by the European Commission.

<sup>(441)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(442)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

### 5.12. Underground permanent geological storage of CO<sub>2</sub>

#### *Description of the activity*

Permanent storage of captured CO<sub>2</sub> in appropriate underground geological formations.

The economic activities in this category could be associated with NACE code E39.00 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(443)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(444)</sup>, scientific peer-reviewed publications and open source<sup>(445)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(446)</sup> or rely on blue or green infrastructure<sup>(447)</sup> to the extent possible;

<sup>(443)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(444)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(445)</sup> Such as Copernicus services managed by the European Commission.

<sup>(446)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(447)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	A monitoring plan is in place for CO <sub>2</sub> leakages.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with Directive 2009/31/EC.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

6. TRANSPORT

6.1. **Passenger interurban rail transport**

*Description of the activity*

Purchase, financing, rental, leasing and operation of passenger transport using railway rolling stock on mainline networks, spread over an extensive geographic area, passenger transport by interurban railways and operation of sleeping cars or dining cars as an integrated operation of railway companies.

The economic activities in this category could be associated with several NACE codes, in particular H49.10, N77.39 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;



(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(448)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(449)</sup>, scientific peer-reviewed publications and open source<sup>(450)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions<sup>(451)</sup> or rely on blue or green infrastructure<sup>(452)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste, in accordance with the waste hierarchy, in particular during maintenance.
(5) Pollution prevention and control	Engines for the propulsion of railway locomotives (RLL) and engines for the propulsion of railcars (RLR) comply with emission limits set out in Annex II to Regulation (EU) 2016/1628.
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 6.2. Freight rail transport

### *Description of the activity*

Purchase, financing, leasing, rental and operation of freight transport on mainline rail networks as well as short line freight railroads.

The economic activities in this category could be associated with several NACE codes, in particular H49.20 and N77.39 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(448)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(449)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(450)</sup> Such as Copernicus services managed by the European Commission.

<sup>(451)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(452)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(453)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(454)</sup>, scientific peer-reviewed publications and open source<sup>(455)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(456)</sup> or rely on blue or green infrastructure<sup>(457)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
    - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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<sup>(453)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(454)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(455)</sup> Such as Copernicus services managed by the European Commission.

<sup>(456)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(457)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The trains and wagons are not dedicated to the transport of fossil fuels.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste in accordance with the waste hierarchy, in particular during maintenance.
(5) Pollution prevention and control	Engines for the propulsion of railway locomotives (RLL) and engines for the propulsion of railcars (RLR) comply with emission limits set out in Annex II to Regulation (EU) 2016/1628.
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 6.3. Urban and suburban transport, road passenger transport

*Description of the activity*

Purchase, financing, leasing, rental and operation of urban and suburban transport vehicles for passengers and road passenger transport.

For motor vehicles, it includes operation of vehicles designated as category M2 or M3, in accordance with Article 4(1) of Regulation (EU) 2018/858, for the provision of passenger transport.

The economic activities in this category may include operation of different modes of land transport, such as by motor bus, tram, streetcar, trolley bus, underground and elevated railways. This also includes town-to-airport or town-to-station lines and operation of funicular railways and aerial cableways where part of urban or suburban transit systems.

The economic activities in this category also includes scheduled long-distance bus services, charters, excursions and other occasional coach services, airport shuttles (including within airports), operation of school buses and buses for the transport.

The economic activities in this category could be associated with several NACE codes, in particular H49.31, H49.3.9, N77.39 and N77.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(458)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(459)</sup>, scientific peer-reviewed publications and open source<sup>(460)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(461)</sup> or rely on blue or green infrastructure<sup>(462)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A <sup>(463)</sup>
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste, in accordance with the waste hierarchy, both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein).

<sup>(458)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(459)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(460)</sup> Such as Copernicus services managed by the European Commission.

<sup>(461)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(462)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(463)</sup> Vehicles are required to comply with the criteria for DNSH to pollution prevention and control specified in this section, including as regards CO<sub>2</sub> emission levels.

(5) Pollution prevention and control	<p>For road vehicles of categories M, tyres comply with external rolling noise requirements in the highest populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 and as can be verified from the European Product Registry for Energy Labelling (EPREL).</p> <p>Where applicable, vehicles comply with the requirements of the most recent applicable stage of the Euro VI heavy duty emission type-approval set out in accordance with Regulation (EC) No 595/2009.</p>
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 6.4. Operation of personal mobility devices, cycle logistics

##### *Description of the activity*

Selling, purchasing, leasing, renting and operation of personal mobility or transport devices where the propulsion comes from the physical activity of the user, from a zero-emissions motor, or a mix of zero-emissions motor and physical activity. This includes the provision of freight transport services by (cargo) bicycles.

The economic activities in this category could be associated with several NACE codes, in particular N77.11 and N77.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(464)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(465)</sup>, scientific peer-reviewed publications and open source<sup>(466)</sup> or paying models.

<sup>(464)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(465)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(466)</sup> Such as Copernicus services managed by the European Commission.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(467)</sup> or rely on blue or green infrastructure <sup>(468)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	Measures are in place to manage waste, in accordance with the waste hierarchy, both in the use phase (maintenance) and the end-of-life including through reuse and recycling of batteries and electronics (in particular critical raw materials therein).
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

6.5. **Transport by motorbikes, passenger cars and commercial vehicles**

*Description of the activity*

Purchase, financing, leasing and operation of vehicles designated as category M1 <sup>(469)</sup>, N1 <sup>(470)</sup> both falling under the scope of Regulation (EC) No 715/2007, or L (2- and 3-wheel vehicles and quadricycles) <sup>(471)</sup>.

The economic activities in this category could be associated with several NACE codes, in particular H49.32, H49.39 and N77.11 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(467)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(468)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(469)</sup> As referred to in Article 4(1), point (a)(i), of Regulation (EU) 2018/858.

<sup>(470)</sup> As referred to in Article 4(1), point (b)(i), of Regulation (EU) 2018/858.

<sup>(471)</sup> As referred to in Article 4(1) of Regulation (EU) 2018/858.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(472)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(473)</sup>, scientific peer-reviewed publications and open source<sup>(474)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(475)</sup> or rely on blue or green infrastructure<sup>(476)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(472)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(473)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(474)</sup> Such as Copernicus services managed by the European Commission.

<sup>(475)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(476)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



Do no significant harm ('DNSH')	
(1) Climate change mitigation	<p>For vehicles of categories M1 and N1, specific emissions of CO<sub>2</sub> defined in Article 3(1), point (h), of Regulation (EU) 2019/631 are not higher than the fleet-wide CO<sub>2</sub> emissions targets <sup>(477)</sup>.</p> <p>The fleet-wide CO<sub>2</sub> emissions target values to be considered are:</p> <p>(a) until 31 December 2024:</p> <p>(i) for NEDC values, the target values as specified in Article 1, paragraphs 2-3 of Regulation (EU) 2019/631: 95 g CO<sub>2</sub>/km for vehicles of category M1 and 147 g CO<sub>2</sub>/km for vehicles of category N1;</p> <p>(ii) for WLTP values, the EU fleet-wide target 2021, as specified in Annex I to Regulation (EU) 2019/631, in Part A, point 6.0 for vehicles of category M1 and in Part B, point 6.0 for vehicles of category N1. Until the respective EU fleet-wide target 2021 is published, those vehicles of category M1 and N1 whose CO<sub>2</sub> emissions are only expressed according to WLTP test procedure will be applied a conversion factor of 1.21 and 1.24 respectively in order to account for the transition from NEDC to WLTP, resulting in the corresponding WLTP values of 115 g CO<sub>2</sub>/km for vehicles of category M1 and 182 g CO<sub>2</sub>/km for vehicles of category N1;</p> <p>(b) from 1 January 2025, the target values as specified in Article 1, paragraph 4 of Regulation (EU) 2019/631.</p>
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	<p>Vehicles of categories M1 and N1 are both of the following:</p> <p>(a) reusable or recyclable to a minimum of 85 % by weight;</p> <p>(b) reusable or recoverable to a minimum of 95 % by weight <sup>(478)</sup>.</p> <p>Measures are in place to manage waste both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein), in accordance with the waste hierarchy.</p>
(5) Pollution prevention and control	<p>Vehicles comply with requirements of the most recent applicable stage of the Euro 6 light-duty emission type-approval <sup>(479)</sup> set out in accordance with Regulation (EC) No. 715/2007.</p> <p>Vehicles comply with the emission thresholds for clean light-duty vehicles set out in Table 2 of the Annex to Directive 2009/33/EC.</p> <p>For road vehicles of categories M and N, tyres comply with external rolling noise requirements in the highest populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 and as can be verified from the European Product Registry for Energy Labelling (EPREL).</p> <p>Vehicles comply with Regulation (EU) No 540/2014.</p>

<sup>(477)</sup> Vehicles are required to comply with the criteria for DNSH to pollution prevention and control specified in this section, including as regards CO<sub>2</sub> emission levels.

<sup>(478)</sup> As set out in Annex I of Directive 2005/64/EC.

<sup>(479)</sup> Commission Regulation (EU) 2018/1832.

(6) Protection and restoration of biodiversity and ecosystems	N/A
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#### 6.6. Freight transport services by road

##### *Description of the activity*

Purchase, financing, leasing, rental and operation of vehicles designated as category N1, N2 <sup>(480)</sup> or N3 <sup>(481)</sup> falling under the scope of EURO VI <sup>(482)</sup>, step E or its successor for freight transport services by road.

The economic activities in this category could be associated with several NACE codes, in particular H49.4.1, H53.10, H53.20 and N77.12 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(483)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(484)</sup>, scientific peer-reviewed publications and open source <sup>(485)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

<sup>(480)</sup> As referred to in Article 4(1), point (b)(ii), of Regulation (EU) 2018/858.

<sup>(481)</sup> As referred to in Article 4(1), point (b)(iii), of Regulation (EU) 2018/858.

<sup>(482)</sup> As set out in Regulation (EC) No 595/2009.

<sup>(483)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(484)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(485)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions <sup>(486)</sup> or rely on blue or green infrastructure <sup>(487)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	<p>1. The vehicles are not dedicated to the transport of fossil fuels.</p> <p>2. For vehicles of category N2 and N3 falling under the scope of Regulation (EU) 2019/1242, specific direct CO<sub>2</sub> emissions are equal to or lower than the reference CO<sub>2</sub> emissions of all vehicles in the same subgroup, as defined in Article 3 of that Regulation <sup>(488)</sup>.</p>
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	<p>Vehicles of category N1, N2 and N3 are both of the following:</p> <p>(a) reusable or recyclable to a minimum of 85 % by weight;</p> <p>(b) reusable or recoverable to a minimum of 95 % by weight <sup>(489)</sup>.</p> <p>Measures are in place to manage waste both in the use phase (maintenance) and the end-of-life of the fleet, including through reuse and recycling of batteries and electronics (in particular critical raw materials therein), in accordance with the waste hierarchy.</p>
(5) Pollution prevention and control	<p>For road vehicles of categories M and N, tyres comply with external rolling noise requirements in the highest populated class and with Rolling Resistance Coefficient (influencing the vehicle energy efficiency) in the two highest populated classes as set out in Regulation (EU) 2020/740 and as can be verified from the European Product Registry for Energy Labelling (EPREL).</p> <p>Vehicles comply with the requirements of the most recent applicable stage of the Euro VI heavy duty emission type-approval <sup>(490)</sup> set out in accordance with Regulation (EC) No 595/2009.</p> <p>Vehicles comply with Regulation (EU) No 540/2014.</p>
(6) Protection and restoration of biodiversity and ecosystems	N/A

<sup>(486)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(487)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(488)</sup> All vehicles are required to comply with the criteria for DNSH to pollution prevention and control specified in this section, including as regards CO<sub>2</sub> emission levels.

<sup>(489)</sup> As specified in Annex I to Directive 2005/64/EC.

<sup>(490)</sup> Commission Regulation (EU) No 582/2011 of 25 May 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI) and amending Annexes I and III to Directive 2007/46/EC of the European Parliament and of the Council (OJ L 167, 25.6.2011, p. 1).

## 6.7. Inland passenger water transport

### *Description of the activity*

Purchase, financing, leasing, rental and operation of passenger vessels on inland waters, involving vessels that are not suitable for sea transport.

The economic activities in this category could be associated with several NACE codes, in particular H50.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(491)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(492)</sup>, scientific peer-reviewed publications and open source<sup>(493)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(494)</sup> or rely on blue or green infrastructure<sup>(495)</sup> to the extent possible;

<sup>(491)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(492)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(493)</sup> Such as Copernicus services managed by the European Commission.

<sup>(494)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(495)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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**Do no significant harm ('DNSH')**


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(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and the end-of-life of the vessel, in accordance with the waste hierarchy, including the control and management of hazardous materials on board of ships and ensuring their safe recycling.  For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.
(5) Pollution prevention and control	Engines in vessels comply with the emission limits set out in Annex II to Regulation (EU) 2016/1628 (including vessels meeting those limits without type-approved solutions such as through after-treatment).
(6) Protection and restoration of biodiversity and ecosystems	N/A

**6.8. Inland freight water transport**
*Description of the activity*

Purchase, financing, leasing, rental and operation of freight vessels on inland waters, involving vessels that are not suitable for sea transport.

The economic activities in this category could be associated with several NACE codes, in particular H50.4 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*


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**Substantial contribution to climate change adaptation**


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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(496)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(497)</sup>, scientific peer-reviewed publications and open source <sup>(498)</sup> or paying models.
4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions <sup>(499)</sup> or rely on blue or green infrastructure <sup>(500)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The vessels are not dedicated to the transport of fossil fuels.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and the end-of-life of the vessel, in accordance with the waste hierarchy, including the control and management of hazardous materials on board of ships and ensuring their safe recycling.  For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.
(5) Pollution prevention and control	Vessels comply with the emission limits of Annex II to Regulation (EU) 2016/1628 (including vessels meeting those limits without type-approved solutions such as through after-treatment).
(6) Protection and restoration of biodiversity and ecosystems	N/A

<sup>(496)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(497)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(498)</sup> Such as Copernicus services managed by the European Commission.

<sup>(499)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(500)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

## 6.9. Retrofitting of inland water passenger and freight transport

### *Description of the activity*

Retrofit and upgrade of vessels for transport of freight or passengers on inland waters, involving vessels that are not suitable for sea transport.

The economic activities in this category could be associated with several NACE codes, in particular H50.4, H50.30 and C33.15 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(501)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(502)</sup>, scientific peer-reviewed publications and open source<sup>(503)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(504)</sup> or rely on blue or green infrastructure<sup>(505)</sup> to the extent possible;

<sup>(501)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(502)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(503)</sup> Such as Copernicus services managed by the European Commission.

<sup>(504)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(505)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The vessels are not dedicated to the transport of fossil fuels.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and the end-of-life of the vessel, in accordance with the waste hierarchy, including the control and management of hazardous materials on board of ships and ensuring their safe recycling.
(5) Pollution prevention and control	Vessels comply with the emission limits of Annex II to Regulation (EU) 2016/1628 (including vessels meeting those limits without type-approved solutions such as through after-treatment).
(6) Protection and restoration of biodiversity and ecosystems	N/A

#### 6.10. Sea and coastal freight water transport, vessels for port operations and auxiliary activities

*Description of the activity*

Purchase, financing, chartering (with or without crew) and operation of vessels designed and equipped for transport of freight or for the combined transport of freight and passengers on sea or coastal waters, whether scheduled or not. Purchase, financing, renting and operation of vessels required for port operations and auxiliary activities, such as tugboats, mooring vessels, pilot vessels, salvage vessels and ice-breakers.

The economic activities in this category could be associated with several NACE codes, in particular H50.2, H52.22 and N77.34 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(506)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(507)</sup>, scientific peer-reviewed publications and open source<sup>(508)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(509)</sup> or rely on blue or green infrastructure<sup>(510)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The vessels are not dedicated to the transport of fossil fuels.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy.  For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.  For existing ships above 500 gross tonnage and the new-built ones replacing them, the activity complies with the requirements of Regulation (EU) No 1257/2013 relating to the inventory of hazardous materials on board. The scrap ships are recycled in facilities included on the European List of ship recycling facilities as laid down in Commission Decision 2016/2323.

<sup>(506)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(507)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(508)</sup> Such as Copernicus services managed by the European Commission.

<sup>(509)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(510)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

	<p>The activity complies with Directive (EU) 2019/883 as regards the protection of the marine environment against the negative effects from discharges of waste from ships.</p> <p>The ship is operated in accordance with Annex V to the IMO MARPOL Convention, in particular with a view to producing reduced quantities of waste and to reducing legal discharges, by managing its waste in a sustainable and environmentally sound manner.</p>
(5) Pollution prevention and control	<p>As regards the reduction of sulphur oxides emissions and particulate matters, vessels comply with Directive (EU) 2016/802 and with Regulation 14<sup>(511)</sup> of Annex VI to the IMO MARPOL Convention. Sulphur in fuel content does not exceed 0,5 % in mass (the global sulphur limit) and 0,1 % in mass in emission control area (ECA) designated in the North and Baltic Seas by the IMO<sup>(512)</sup>.</p> <p>As regards nitrogen oxides (NO<sub>x</sub>) emissions, vessels comply with Regulation 13<sup>(513)</sup> of Annex VI to the IMO MARPOL Convention. Tier II NO<sub>x</sub> requirement applies to ships constructed after 2011. Only while operating in NO<sub>x</sub> emission control areas established under IMO rules, ships constructed after 1 January 2016 comply with stricter engine requirements (Tier III) reducing NO<sub>x</sub> emissions<sup>(514)</sup>.</p> <p>Discharges of black and grey water comply with Annex IV to the IMO MARPOL Convention.</p> <p>Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>Releases of ballast water containing non-indigenous species are prevented in line with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).</p> <p>Measures are in place to prevent the introduction of non-indigenous species by biofouling of hull and niche areas of ships taking into account the IMO Biofouling Guidelines<sup>(515)</sup>.</p> <p>Noise and vibrations are limited by using noise reducing propellers, hull design or on-board machinery in line with the guidance given in the IMO Guidelines for the Reduction of Underwater Noise<sup>(516)</sup>.</p> <p>In the Union, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity), 2 (non-indigenous species), 6 (seabed integrity), 8 (contaminants), 10 (marine litter), 11 (Noise/Energy) and as set out in Commission Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors, as applicable.</p>

<sup>(511)</sup> (Version of 4.6.2021: [http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Sulphur-oxides-\(SO<sub>x</sub>\)-%E2%80%93-Regulation-14.aspx](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Sulphur-oxides-(SO<sub>x</sub>)-%E2%80%93-Regulation-14.aspx)).

<sup>(512)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

<sup>(513)</sup> (version of 4.6.2021: [http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Nitrogen-oxides-\(NO<sub>x</sub>\)-Regulation-13.aspx](http://www.imo.org/en/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Nitrogen-oxides-(NO<sub>x</sub>)-Regulation-13.aspx)).

<sup>(514)</sup> In Union seas, the requirement is applicable as of 2021 in the Baltic and North Seas.

<sup>(515)</sup> IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species, resolution MEPC.207(62).

<sup>(516)</sup> IMO Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, (MEPC.1/Circ.833).

### 6.11. Sea and coastal passenger water transport

#### *Description of the activity*

Purchase, financing, chartering (with or without crew) and operation of vessels designed and equipped for performing passenger transport, on sea or coastal waters, whether scheduled or not. The economic activities in this category include operation of ferries, water taxis and excursions, cruise or sightseeing boats.

The economic activities in this category could be associated with several NACE codes, in particular H50.10, N77.21 and N77.34 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(517)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(518)</sup>, scientific peer-reviewed publications and open source<sup>(519)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(520)</sup> or rely on blue or green infrastructure<sup>(521)</sup> to the extent possible;

<sup>(517)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(518)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(519)</sup> Such as Copernicus services managed by the European Commission.

<sup>(520)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services 5version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/).

<sup>(521)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy.</p> <p>For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.</p> <p>For existing ships above 500 gross tonnage and the new-built ones replacing them, the activity complies with the requirement of Regulation (EU) No 1257/2013 relating to the inventory of hazardous materials. The scrap ships are recycled in facilities included on the European List of ship recycling facilities as laid down in Commission Decision 2016/2323.</p> <p>The activity complies with Directive (EU) 2019/883 as regards the protection of the marine environment against the negative effects from discharges of waste from ships</p> <p>The ship is operated in accordance with Annex V to the IMO MARPOL Convention, in particular with a view to producing reduced quantities of waste and to reducing legal discharges, by managing its waste in a sustainable and environmentally sound manner.</p>
(5) Pollution prevention and control	<p>As regards the reduction of sulphur oxides emissions and particulate matters, vessels comply with Directive (EU) 2016/802 and with Regulation 14 of Annex VI to the IMO MARPOL Convention. Sulphur in fuel content does not exceed 0,5 % in mass (the global sulphur limit) and 0,1 % in mass in emission control area (ECA) designated in the North and Baltic Seas by the IMO <sup>(522)</sup>.</p> <p>As regards nitrogen oxides (NO<sub>x</sub>) emissions, vessels comply with Regulation 13 of Annex VI to the IMO MARPOL Convention. Tier II NO<sub>x</sub> requirement applies to ships constructed after 2011. Only while operating in NO<sub>x</sub> emission control areas established under IMO rules, ships constructed after 1 January 2016 comply with stricter engine requirements (Tier III) reducing NO<sub>x</sub> emissions <sup>(523)</sup>.</p> <p>Discharges of black and grey water comply with Annex IV to the IMO MARPOL Convention.</p> <p>Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.</p>

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<sup>(522)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

<sup>(523)</sup> In Union seas, the requirement is applicable as of 2021 in the Baltic and North Seas.

(6) Protection and restoration of biodiversity and ecosystems	<p>Releases of ballast water containing non-indigenous species are prevented in line with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).</p> <p>Measures are in place to prevent the introduction of non-indigenous species by biofouling of hull and niche areas of ships taking into account the IMO Biofouling Guidelines <sup>(524)</sup>.</p> <p>Noise and vibrations are limited by using noise reducing propellers, hull design or on-board machinery in line with the guidance given in the IMO Guidelines for the Reduction of Underwater Noise <sup>(525)</sup>.</p> <p>In the Union, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity), 2 (non-indigenous species), 6 (seabed integrity), 8 (contaminants), 10 (marine litter), 11 (Noise/Energy) and as set out in Commission Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors, as applicable.</p>
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#### 6.12. Retrofitting of sea and coastal freight and passenger water transport

##### *Description of the activity*

Retrofit and upgrade of vessels designed and equipped for the transport of freight or passengers on sea or coastal waters, and of vessels required for port operations and auxiliary activities, such as tugboats, mooring vessels, pilot vessels, salvage vessels and ice-breakers.

The economic activities in this category could be associated with NACE codes H50.10, H50.2, H52.22, C33.15, N77.21 and N.77.34 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change mitigation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(526)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(524)</sup> IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species resolution MEPC.207(62).

<sup>(525)</sup> IMO Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, (MEPC.1/Circ.833).

<sup>(526)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.



3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(527)</sup>, scientific peer-reviewed publications and open source <sup>(528)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(529)</sup> or rely on blue or green infrastructure <sup>(530)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(2) Climate change adaptation	The vessels are not dedicated to the transport of fossil fuels.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>Measures are in place to manage waste, both in the use phase and in the end-of-life of the vessel, in accordance with the waste hierarchy.</p> <p>For battery-operated vessels, those measures include reuse and recycling of batteries and electronics, including critical raw materials therein.</p> <p>For existing ships above 500 gross tonnage and the new-built ones replacing them, the activity complies with the requirements of Regulation (EU) No 1257/2013 relating to the inventory of hazardous materials. The scrap ships are recycled in facilities included on the European List of ship recycling facilities as laid down in Commission Decision 2016/2323.</p> <p>The activity complies with Directive (EU) 2019/883 as regards the protection of the marine environment against the negative effects from discharges of waste from ships.</p> <p>The ship is operated in accordance with Annex V to the IMO MARPOL Convention, in particular with a view to producing reduced quantities of waste and to reducing legal discharges, by managing its waste in a sustainable and environmentally sound manner.</p>

<sup>(527)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(528)</sup> Such as Copernicus services managed by the European Commission.

<sup>(529)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(530)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



(5) Pollution prevention and control	<p>As regards the reduction of sulphur oxides emissions and particulate matters, vessels comply with Directive (EU) 2016/802 and with Regulation 14 of Annex VI to the IMO MARPOL Convention. Sulphur in fuel content does not exceed 0,5 % in mass (the global sulphur limit) and 0,1 % in mass in emission control area (ECA) designated in the North and Baltic Seas by the IMO <sup>(531)</sup>.</p> <p>As regards nitrogen oxides (NO<sub>x</sub>) emissions, vessels comply with Regulation 13 of Annex VI to the IMO MARPOL Convention. Tier II NO<sub>x</sub> requirement applies to ships constructed after 2011. Only while operating in NO<sub>x</sub> emission control areas established under IMO rules, ships constructed after 1 January 2016 comply with stricter engine requirements (Tier III) reducing NO<sub>x</sub> emissions <sup>(532)</sup>.</p> <p>Discharges of black and grey water comply with Annex IV to the IMO MARPOL Convention.</p> <p>Measures are in place to minimise toxicity of anti-fouling paint and biocides as laid down in Regulation (EU) No 528/2012, which implements in Union law the International Convention on the Control of Harmful Anti-fouling Systems on Ships adopted on 5 October 2001.</p>
(6) Protection and restoration of biodiversity and ecosystems	<p>Releases of ballast water containing non-indigenous species are prevented in line with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM).</p> <p>Measures are in place to prevent the introduction of non-indigenous species by biofouling of hull and niche areas of ships taking into account the IMO Biofouling Guidelines <sup>(533)</sup>.</p> <p>Noise and vibrations are limited by using noise reducing propellers, hull design or on-board machinery in line with the guidance given in the IMO Guidelines for the Reduction of Underwater Noise <sup>(534)</sup>.</p> <p>In the Union, the activity does not hamper the achievement of good environmental status, as set out in Directive 2008/56/EC, requiring that the appropriate measures are taken to prevent or mitigate impacts in relation to that Directive's Descriptors 1 (biodiversity), 2 (non-indigenous species), 6 (seabed integrity), 8 (contaminants), 10 (marine litter), 11 (Noise/Energy) and as set out in Commission Decision (EU) 2017/848 in relation to the relevant criteria and methodological standards for those descriptors, as applicable.</p>

### 6.13. Infrastructure for personal mobility, cycle logistics

#### *Description of the activity*

Construction, modernisation, maintenance and operation of infrastructure for personal mobility, including the construction of roads, motorways bridges and tunnels and other infrastructure that are dedicated to pedestrians and bicycles, with or without electric assist.

The economic activities in this category could be associated with several NACE codes, in particular F42.11, F42.12, F42.13, F43.21, F711 and F71.20 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(531)</sup> As regards the extension of the requirements applying in Emission Control Area to other Union seas, countries bordering the Mediterranean Sea are discussing the creation of relevant ECA under the legal framework of the Barcelona Convention.

<sup>(532)</sup> In Union seas, the requirement is applicable as of 2021 in the Baltic and North Seas.

<sup>(533)</sup> IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species resolution MEPC.207(62).

<sup>(534)</sup> IMO Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, (MEPC.1/Circ.833).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(535)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(536)</sup>, scientific peer-reviewed publications and open source<sup>(537)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(538)</sup> or rely on blue or green infrastructure<sup>(539)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
    - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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<sup>(535)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(536)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(537)</sup> Such as Copernicus services managed by the European Commission.

<sup>(538)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(539)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

Do no significant harm ('DNSH')	
(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(540)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 6.14. Infrastructure for rail transport

##### *Description of the activity*

Construction, modernisation, operation and maintenance of railways and subways as well as bridges and tunnels, stations, terminals, rail service facilities<sup>(541)</sup>, safety and traffic management systems including the provision of architectural services, engineering services, drafting services, building inspection services and surveying and mapping services and the like as well as the performance of physical, chemical and other analytical testing of all types of materials and products.

The economic activities in this category could be associated with several NACE codes, in particular F42.12, F42.13, M71.12, M71.20, F43.21, and H52.21 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;

<sup>(540)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

<sup>(541)</sup> In accordance with Article 3, point (11) of Directive 34/2012/EU.

(c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(542)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(543)</sup>, scientific peer-reviewed publications and open source<sup>(544)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(545)</sup> or rely on blue or green infrastructure<sup>(546)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	<p>The infrastructure is not dedicated to transportation or storage of fossil fuels.</p> <p>In case of new infrastructure or major renovation, the infrastructure has been climate proofed in accordance with the appropriate climate proofing practice that includes carbon footprinting and clearly defined shadow cost of carbon. Such carbon footprinting covers scope 1-3 emissions, and demonstrates that the infrastructure does not lead to additional relative greenhouse gas emissions, calculated on the basis of conservative assumptions, values and procedures.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>

<sup>(542)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(543)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(544)</sup> Such as Copernicus services managed by the European Commission.

<sup>(545)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(546)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(547)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Where appropriate, given the sensitivity of the area affected, in particular in terms of the size of population affected, noise and vibrations from use of infrastructure are mitigated by introducing open trenches, wall barriers or other measures and comply with Directive 2002/49/EC.  Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

#### 6.15. Infrastructure enabling road transport and public transport

##### *Description of the activity*

Construction, modernisation, maintenance and operation of motorways, streets, roads, other vehicular and pedestrian ways, surface work on streets, roads, highways, bridges or tunnels and construction of airfield runways, including the provision of architectural services, engineering services, drafting services, building inspection services and surveying and mapping services and the like as well as the performance of physical, chemical and other analytical testing of all types of materials and products, and excludes the installation of street lighting and electrical signals.

The economic activities in this category could be classified under several NACE codes, in particular F42.11, F42.13, F71.1 and F71.20 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

<sup>(547)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(548)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(549)</sup>, scientific peer-reviewed publications and open source<sup>(550)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(551)</sup> or rely on blue or green infrastructure<sup>(552)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	<p>The infrastructure is not dedicated to transportation or storage of fossil fuels.</p> <p>In case of new infrastructure or major renovation, the infrastructure has been climate proofed in accordance with the appropriate climate proofing practice that includes carbon footprinting and clearly defined shadow cost of carbon. Such carbon footprinting covers scope 1-3 emissions, and demonstrates that the infrastructure does not lead to additional relative greenhouse gas emissions, calculated on the basis of conservative assumptions, values and procedures.</p>
(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the criteria set out in Appendix B to this Annex.</p>

<sup>(548)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(549)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(550)</sup> Such as Copernicus services managed by the European Commission.

<sup>(551)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(552)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(553)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Where relevant, noise and vibrations from use of infrastructure are mitigated by introducing open trenches, wall barriers or other measures and comply with the Directive 2002/49/EC.  Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.  Where relevant, maintenance of vegetation along road transport infrastructure ensures invasive species do not spread.  Mitigation measures have been implemented to avoid wildlife collisions.

#### 6.16. Infrastructure for water transport

##### *Description of the activity*

Construction, modernisation and operation of waterways, harbour and rivers works, pleasure ports, locks, dams and dykes and other, including the provision of architectural services, engineering services, drafting services, building inspection services and surveying and mapping services and the like as well as the performance of physical, chemical and other analytical testing of all types of materials and products and excludes project management activities related to civil engineering works.

The economic activities in this category exclude dredging of waterways.

The economic activities in this category could be associated with several NACE codes, in particular F42.91, F71.1 or F71.20 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;

<sup>(553)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).



- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(554)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(555)</sup>, scientific peer-reviewed publications and open source<sup>(556)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(557)</sup> or rely on blue or green infrastructure<sup>(558)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	<p>The infrastructure is not dedicated to transportation or storage of fossil fuels.</p> <p>In case of new infrastructure or major renovation, the infrastructure has been climate proofed in accordance with the appropriate climate proofing practice that includes carbon footprinting and clearly defined shadow cost of carbon. Such carbon footprinting covers scope 1-3 emissions, and demonstrates that the infrastructure does not lead to additional relative greenhouse gas emissions, calculated on the basis of conservative assumptions, values and procedures.</p>
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<sup>(554)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(555)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(556)</sup> Such as Copernicus services managed by the European Commission.

<sup>(557)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(558)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(3) Sustainable use and protection of water and marine resources	<p>The activity complies with the provisions of Directive 2000/60/EC, in particular with all the requirements laid down in Article 4 of the Directive. In accordance with Article 4 of Directive 2000/60/EC and in particular paragraph 7 of that Article, prior to refurbishment/construction, an impact assessment of the project is carried out to assess all its potential impacts on the status of water bodies within the same river basin and on protected habitats and species directly dependent on water, considering in particular migration corridors, free-flowing rivers or ecosystems close to undisturbed conditions.</p> <p>The assessment is based on recent, comprehensive and accurate data, including monitoring data on biological quality elements that are specifically sensitive to hydromorphological alterations, and on the expected status of the water body as a result of the new activities, as compared to its current one.</p> <p>It assesses, in particular, the cumulated impacts of this new project with other existing or planned infrastructure in the river basin.</p> <p>On the basis of that impact assessment, it has been established that the project is conceived, by design and location and by mitigation measures, so that it complies with one of the following requirements:</p> <ul style="list-style-type: none"><li>(a) the project does not entail any deterioration nor compromises the achievement of good status or potential of the specific water body it relates to,</li><li>(b) where the project risks to deteriorate or compromise the achievement of good status/potential of the specific water body it relates to, such deterioration is not significant, and is justified by a detailed cost-benefit assessment demonstrating both of the following:<ul style="list-style-type: none"><li>(i) the overriding reasons in the public interest or the fact that the benefits expected from the planned navigation infrastructure project in terms of benefits to climate change mitigation/adaptation outweigh the costs from deteriorating the status of water that are accruing to the environment and to society</li><li>(ii) the fact that the overriding public interest or the benefits expected from the activity cannot, for reasons of technical feasibility or disproportionate cost, be achieved by alternative means that would lead to a better environmental outcome (such as nature based solution, alternative location, rehabilitation/refurbishment of existing infrastructures, or use of technologies not disrupting river continuity).</li></ul></li></ul> <p>All technically feasible and ecologically relevant mitigation measures are implemented to reduce adverse impacts on water as well as on protected habitats and species directly dependent on water.</p> <p>Mitigation measures include, where relevant and depending on the ecosystems naturally present in the affected water bodies:</p> <ul style="list-style-type: none"><li>(a) measures to ensure conditions as close as possible to undisturbed continuity (including measures to ensure longitudinal and lateral continuity, minimum ecological flow and sediment flow);</li></ul>
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	<p>(b) measures to protect or enhance morphological conditions and habitats for aquatic species;</p> <p>(c) measures to reduce adverse impacts of eutrophication.</p> <p>The effectiveness of those measures is monitored in the context of the authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body.</p> <p>The project does not permanently compromise the achievement of good status/potential in any of the water bodies in the same river basin district.</p> <p>In addition to the mitigation measures referred to above, and where relevant, compensatory measures are implemented to ensure that the project does not result in overall deterioration of status of water bodies in the same river basin district. This is achieved by restoring (longitudinal or lateral) continuity within the same river basin district to an extent that compensates the disruption of continuity, which the planned navigation infrastructure project may cause. Compensation starts prior to the execution of the project.</p>
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(559)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Measures are taken to reduce noise, vibration, dust and pollutant emissions during construction maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

### 6.17. Airport infrastructure

#### *Description of the activity*

Construction, modernisation and operation of infrastructure that is required for zero tailpipe CO<sub>2</sub> operation of aircraft or the airport's own operations, as well as for provision of fixed electrical ground power and pre-conditioned air to stationary aircraft.

The economic activities in this category could be classified under several NACE codes, in particular F41.20 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(559)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(560)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(561)</sup>, scientific peer-reviewed publications and open source<sup>(562)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(563)</sup> or rely on blue or green infrastructure<sup>(564)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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#### Do no significant harm ('DNSH')

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(1) Climate change mitigation	<p>The infrastructure is not dedicated to transportation or storage of fossil fuels.</p> <p>In case of new infrastructure or major renovation, the infrastructure has been climate proofed in accordance with the appropriate climate proofing practice that includes carbon footprinting and clearly defined shadow cost of carbon. Such carbon footprinting covers scope 1-3 emissions, and demonstrates that the infrastructure does not lead to additional relative greenhouse gas emissions, calculated on the basis of conservative assumptions, values and procedures.</p>
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<sup>(560)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(561)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(562)</sup> Such as Copernicus services managed by the European Commission.

<sup>(563)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(564)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material defined in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol <sup>(565)</sup> . Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.
(5) Pollution prevention and control	Measures are taken to reduce noise, vibration, dust and pollutant emissions during construction maintenance works.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

## 7. CONSTRUCTION AND REAL ESTATE

### 7.1. Construction of new buildings

#### *Description of the activity*

Development of building projects for residential and non-residential buildings by bringing together financial, technical and physical means to realise the building projects for later sale as well as the construction of complete residential or non-residential buildings, on own account for sale or on a fee or contract basis.

The economic activities in this category could be associated with several NACE codes, in particular F41.1 and F41.2, including also activities under F43, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

<sup>(565)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(566)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(567)</sup>, scientific peer-reviewed publications and open source<sup>(568)</sup> or paying models.
4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(569)</sup> or rely on blue or green infrastructure<sup>(570)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	<p>The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.</p> <p>The Primary Energy Demand (PED)<sup>(571)</sup> setting out the energy performance of the building resulting from the construction does not exceed the threshold set for the nearly zero-energy building (NZEB) requirements in national regulation implementing Directive 2010/31/EU. The energy performance is certified using an as built Energy Performance Certificate (EPC).</p>
(3) Sustainable use and protection of water and marine resources	<p>Where installed, except for installations in residential building units, the specified water use for the following water appliances are attested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications laid down in Appendix E to Annex I to this Regulation:</p> <p>(a) wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</p> <p>(b) showers have a maximum water flow of 8 litres/min;</p>

<sup>(566)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(567)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(568)</sup> Such as Copernicus services managed by the European Commission.

<sup>(569)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(570)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(571)</sup> The calculated amount of energy needed to meet the energy demand associated with the typical uses of a building expressed by a numeric indicator of total primary energy use in kWh/m<sub>2</sub> per year and based on the relevant national calculation methodology and as displayed on the Energy Performance Certificate (EPC).



	<p>(c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres;</p> <p>(d) urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</p> <p>To avoid impact from the construction site, the activity complies with the criteria set out in Appendix B to this Annex.</p>
(4) Transition to a circular economy	<p>At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol<sup>(572)</sup>. Operators limit waste generation in processes related to construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.</p> <p>Building designs and construction techniques support circularity and in particular demonstrate, with reference to ISO 20887<sup>(573)</sup> or other standards for assessing the disassembly or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</p>
(5) Pollution prevention and control	<p>Building components and materials used in the construction comply with the criteria set out in Appendix C to this Annex.</p> <p>Building components and materials used in the construction that may come into contact with occupiers<sup>(574)</sup> emit less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or component upon testing in accordance with the conditions specified in Annex XVII to Regulation (EC) No 1907/2006 and less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component, upon testing in accordance with CEN/EN 16516<sup>(575)</sup> or ISO 16000-3<sup>(576)</sup> or other equivalent standardised test conditions and determination methods<sup>(577)</sup>.</p> <p>Where the new construction is located on a potentially contaminated site (brownfield site), the site has been subject to an investigation for potential contaminants, for example using standard ISO 18400<sup>(578)</sup>.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>

<sup>(572)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

<sup>(573)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).

<sup>(574)</sup> Applying to paints and varnishes, ceiling tiles, floor coverings, including associated adhesives and sealants, internal insulation and interior surface treatments, such as those to treat damp and mold.

<sup>(575)</sup> CEN/TS 16516: 2013, Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air.

<sup>(576)</sup> ISO 16000-3:2011, Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method.

<sup>(577)</sup> The emissions thresholds for carcinogenic volatile organic compounds relate to a 28-day test period.

<sup>(578)</sup> ISO 18400 series on Soil quality — Sampling



(6) Protection and restoration of biodiversity and ecosystems	<p>The activity complies with the criteria set out in Appendix D to this Annex.</p> <p>The new construction is not built on one of the following:</p> <ul style="list-style-type: none"> <li>(a) arable land and crop land with a moderate to high level of soil fertility and below ground biodiversity as referred to in the EU LUCAS survey <sup>(579)</sup>;</li> <li>(b) greenfield land of recognised high biodiversity value and land that serves as habitat of endangered species (flora and fauna) listed on the European Red List <sup>(580)</sup> or the IUCN Red List <sup>(581)</sup>;</li> <li>(c) land matching the definition of forest as set out in national law used in the national greenhouse gas inventory, or where not available, is in accordance with the FAO definition of forest <sup>(582)</sup>.</li> </ul>
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## 7.2. Renovation of existing buildings

### *Description of the activity*

Construction and civil engineering works or preparation thereof.

The economic activities in this category could be associated with several NACE codes, in particular F41 and F43 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(583)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(579)</sup> JRC ESDCA, LUCAS: Land Use and Coverage Area frame Survey (version of 4.6.2021: <https://esdac.jrc.ec.europa.eu/projects/lucas>).

<sup>(580)</sup> IUCN, *The IUCN European Red List of Threatened Species* (version of 4.6.2021: <https://www.iucn.org/regions/europe/our-work/biodiversity-conservation/european-red-list-threatened-species>).

<sup>(581)</sup> IUCN, *The IUCN Red List of Threatened Species* (version of 4.6.2021: <https://www.iucnredlist.org>).

<sup>(582)</sup> Land spanning more than 0,5 hectares with trees higher than five meters and a canopy cover of more than 10 %, or trees able to reach those thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use.

<sup>(583)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(584)</sup>, scientific peer-reviewed publications and open source<sup>(585)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(586)</sup> or rely on blue or green infrastructure<sup>(587)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

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(1) Climate change mitigation	The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.
(3) Sustainable use and protection of water and marine resources	<p>Where installed as part of the renovation works, except for renovation works in residential building units, the specified water use for the following water appliances is attested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications laid down in Appendix E to Annex I to this Regulation:</p> <ul style="list-style-type: none"> <li>(a) wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min;</li> <li>(b) showers have a maximum water flow of 8 litres/min;</li> <li>(c) WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres;</li> <li>(d) urinals use a maximum of 2 litres/bowl/hour. Flushing urinals have a maximum full flush volume of 1 litre.</li> </ul>

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<sup>(584)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(585)</sup> Such as Copernicus services managed by the European Commission.

<sup>(586)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(587)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	<p>At least 70 % (by weight) of the non-hazardous construction and demolition waste (excluding naturally occurring material referred to in category 17 05 04 in the European List of Waste established by Decision 2000/532/EC) generated on the construction site is prepared for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other materials, in accordance with the waste hierarchy and the EU Construction and Demolition Waste Management Protocol<sup>(588)</sup>. Operators limit waste generation in processes related construction and demolition, in accordance with the EU Construction and Demolition Waste Management Protocol and taking into account best available techniques and using selective demolition to enable removal and safe handling of hazardous substances and facilitate reuse and high-quality recycling by selective removal of materials, using available sorting systems for construction and demolition waste.</p> <p>Building designs and construction techniques support circularity and in particular demonstrate, with reference to ISO 20887<sup>(589)</sup> or other standards for assessing the disassembly or adaptability of buildings, how they are designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.</p>
(5) Pollution prevention and control	<p>Building components and materials used in the construction complies with the criteria set out in Appendix C to this Annex.</p> <p>Building components and materials used in the building renovation that may come into contact with occupiers<sup>(590)</sup> emit less than 0,06 mg of formaldehyde per m<sup>3</sup> of material or component upon testing in accordance with the conditions specified in Annex XVII to Regulation (EC) No 1907/2006 and less than 0,001 mg of other categories 1A and 1B carcinogenic volatile organic compounds per m<sup>3</sup> of material or component, upon testing in accordance with CEN/EN 16516 or ISO 16000-3:2011<sup>(591)</sup> or other equivalent standardised test conditions and determination methods.</p> <p>Measures are taken to reduce noise, dust and pollutant emissions during construction or maintenance works.</p>
(6) Protection and restoration of biodiversity and ecosystems	N/A.

### 7.3. Installation, maintenance and repair of energy efficiency equipment

#### *Description of the activity*

Individual renovation measures consisting in installation, maintenance or repair of energy efficiency equipment. The economic activities in this category consist in one of the following individual measures, provided that they comply with minimum requirements set for individual components and systems in the applicable national measures implementing Directive 2010/31/EU and, where applicable, are rated in the highest two populated classes of energy efficiency in accordance with Regulation (EU) 2017/1369 and delegated acts adopted under that Regulation:

- (a) addition of insulation to existing envelope components, such as external walls (including green walls), roofs (including green roofs), lofts, basements and ground floors (including measures to ensure air-tightness, measures to reduce the effects of thermal bridges and scaffolding) and products for the application of the insulation to the building envelope (including mechanical fixings and adhesive);

<sup>(588)</sup> EU Construction and Demolition Waste Protocol (version of 4.6.2021: [https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0\\_en](https://ec.europa.eu/growth/content/eu-construction-and-demolition-waste-protocol-0_en)).

<sup>(589)</sup> ISO 20887:2020, Sustainability in buildings and civil engineering works - Design for disassembly and adaptability - Principles, requirements and guidance (version of 4.6.2021: <https://www.iso.org/standard/69370.html>).

<sup>(590)</sup> Applying to paints and varnishes, ceiling tiles, floor coverings (including associated adhesives and sealants), internal insulation and interior surface treatments (such as to treat damp and mould).

<sup>(591)</sup> ISO 16000-3:2011, Indoor air — Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air — Active sampling method (version of 4.6.2021: <https://www.iso.org/standard/51812.html>).

- (b) replacement of existing windows with new energy efficient windows;
- (c) replacement of existing external doors with new energy efficient doors;
- (d) installation and replacement of energy efficient light sources;
- (e) installation, replacement, maintenance and repair of heating, ventilation and air-conditioning (HVAC) and water heating systems, including equipment related to district heating services, with highly efficient technologies;
- (f) installation of low water and energy using kitchen and sanitary water fittings which comply with technical specifications set out in Appendix A to Annex I to this Regulation and in case of shower solutions, mixer showers, shower outlets and taps have a max water flow of 6 L/min or less attested by an existing label in the Union market.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27, C28, S95.21, S95.22, C33.12 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(592)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(593)</sup>, scientific peer-reviewed publications and open source<sup>(594)</sup> or paying models.

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<sup>(592)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(593)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(594)</sup> Such as Copernicus services managed by the European Commission.

## 4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(595)</sup> or rely on blue or green infrastructure <sup>(596)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

## Do no significant harm ('DNSH')

(2) Climate change mitigation	The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	Building components and materials comply with the criteria set out in Appendix C to this Annex.  In case of addition of thermal insulation to an existing building envelope, a building survey is carried out in accordance with national law by a competent specialist with training in asbestos surveying. Any stripping of lagging that contains or is likely to contain asbestos, breaking or mechanical drilling or screwing or removal of insulation board, tiles and other asbestos containing materials is carried out by appropriately trained personnel, with health monitoring before, during and after the works, in accordance with national law.
(6) Protection and restoration of biodiversity and ecosystems	N/A

7.4. **Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)***Description of the activity*

Installation, maintenance and repair of charging stations for electric vehicles in buildings and parking spaces attached to buildings.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27 or C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

<sup>(595)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(596)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

*Technical screening criteria*

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**Substantial contribution to climate change adaptation**

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(597)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(598)</sup>, scientific peer-reviewed publications and open source<sup>(599)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(600)</sup> or rely on blue or green infrastructure<sup>(601)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
    - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

<sup>(597)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(598)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(599)</sup> Such as Copernicus services managed by the European Commission.

<sup>(600)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(601)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

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Do no significant harm ('DNSH')

(2) Climate change mitigation	The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

**7.5. Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings**

*Description of the activity*

Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings, consisting in one of the following measures:

- (a) installation, maintenance and repair of zoned thermostats, smart thermostat systems and sensing equipment, including motion and day light control;
- (b) installation, maintenance and repair of building automation and control systems, building energy management systems (BEMS), lighting control systems and energy management systems (EMS);
- (c) installation, maintenance and repair of smart meters for gas, heat, cool and electricity;
- (d) installation, maintenance and repair of façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, and C16, C17, C22, C23, C25, C27, C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.



The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(602)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(603)</sup>, scientific peer-reviewed publications and open source <sup>(604)</sup> or paying models.
4. The adaptation solutions implemented:
- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
  - (b) favour nature-based solutions <sup>(605)</sup> or rely on blue or green infrastructure <sup>(606)</sup> to the extent possible;
  - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
  - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
  - (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

Do no significant harm ('DNSH')

(2) Climate change mitigation	The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 7.6. Installation, maintenance and repair of renewable energy technologies

*Description of the activity*

Installation, maintenance and repair of renewable energy technologies, on-site, consisting in one of the following individual measures, if installed on-site as technical building systems:

- (a) installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment;
- (b) installation, maintenance and repair of solar hot water panels and the ancillary technical equipment;

<sup>(602)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(603)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(604)</sup> Such as Copernicus services managed by the European Commission.

<sup>(605)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(606)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (c) installation, maintenance, repair and upgrade of heat pumps contributing to the targets for renewable energy in heat and cool in accordance with Directive (EU) 2018/2001 and the ancillary technical equipment;
- (d) installation, maintenance and repair of wind turbines and the ancillary technical equipment;
- (e) installation, maintenance and repair of solar transpired collectors and the ancillary technical equipment;
- (f) installation, maintenance and repair of thermal or electric energy storage units and the ancillary technical equipment;
- (g) installation, maintenance and repair of high efficiency micro CHP (combined heat and power) plant;
- (h) installation, maintenance and repair of heat exchanger/recovery systems.

The economic activities in this category could be associated with several NACE codes, in particular F42, F43, M71, C16, C17, C22, C23, C25, C27 or C28, in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(607)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(608)</sup>, scientific peer-reviewed publications and open source<sup>(609)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

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<sup>(607)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(608)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(609)</sup> Such as Copernicus services managed by the European Commission.

- (b) favour nature-based solutions <sup>(610)</sup> or rely on blue or green infrastructure <sup>(611)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(2) Climate change mitigation	The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 7.7. Acquisition and ownership of buildings

*Description of the activity*

Buying real estate and exercising ownership of that real estate.

The economic activities in this category could be associated with NACE code L68 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

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<sup>(610)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(611)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(612)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(613)</sup>, scientific peer-reviewed publications and open source <sup>(614)</sup> or paying models.

4. The adaptation solutions implemented:

(a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;

(b) favour nature-based solutions <sup>(615)</sup> or rely on blue or green infrastructure <sup>(616)</sup> to the extent possible;

(c) are consistent with local, sectoral, regional or national adaptation plans and strategies;

(d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation

The building is not dedicated to extraction, storage, transport or manufacture of fossil fuels.

For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class C. As an alternative, the building is within the top 30 % of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.

For buildings built after 31 December 2020, the Primary Energy Demand (PED) <sup>(617)</sup> defining the energy performance of the building resulting from the construction does not exceed the threshold set for the nearly zero-energy building (NZEB) requirements in national regulation implementing Directive 2010/31/EU. The energy performance is certified using an as built Energy Performance Certificate (EPC).

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<sup>(612)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(613)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(614)</sup> Such as Copernicus services managed by the European Commission.

<sup>(615)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(616)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(617)</sup> The calculated amount of energy needed to meet the energy demand associated with the typical uses of a building expressed by a numeric indicator of total primary energy use in kWh/m<sup>2</sup> per year and based on the relevant national calculation methodology and as displayed on the Energy Performance Certificate (EPC).

(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 8. INFORMATION AND COMMUNICATION

### 8.1. Data processing, hosting and related activities

#### *Description of the activity*

Storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of diversity of data through data centres <sup>(618)</sup>, including edge computing.

The economic activities in this category could be associated with NACE code J63.1.1 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios <sup>(619)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports <sup>(620)</sup>, scientific peer-reviewed publications and open source <sup>(621)</sup> or paying models.

<sup>(618)</sup> Data centres include the following equipment: ICT equipment and services; cooling; data centre power equipment; data centre power distribution equipment; data centre building; monitoring systems.

<sup>(619)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(620)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(621)</sup> Such as Copernicus services managed by the European Commission.

## 4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(622)</sup> or rely on blue or green infrastructure <sup>(623)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

## Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity has demonstrated best efforts to implement the relevant practices listed as 'expected practices' in the most recent version of the European Code of Conduct on Data Centre Energy Efficiency <sup>(624)</sup> , or in CEN-CENELEC document CLC TR50600-99-1 'Data centre facilities and infrastructures - Part 99-1: Recommended practices for energy management' <sup>(625)</sup> and has implemented all expected practices that have been assigned the maximum value of 5 according to the most recent version of the European Code of Conduct on Data Centre Energy Efficiency.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	<p>The equipment used meets the requirements laid down in Directive 2009/125/EC for servers and data storage products.</p> <p>The equipment used does not contain the restricted substances listed in Annex II to Directive 2011/65/EU, except where the concentration values by weight in homogeneous materials do not exceed the maximum values listed in that Annex.</p> <p>A waste management plan is in place and ensures maximal recycling at end of life of electrical and electronic equipment, including through contractual agreements with recycling partners, reflection in financial projections or official project documentation.</p> <p>At its end of life, the equipment undergoes preparation for re-use, recovery or recycling operations, or proper treatment, including the removal of all fluids and a selective treatment in accordance with Annex VII to Directive 2012/19/EU.</p>
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

<sup>(622)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(623)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

<sup>(624)</sup> The most recent version of the European Code of Conduct on Data Centre Energy Efficiency is the latest version published at the Joint Research Centre European Energy Efficiency Platform (E3P) website, <https://e3p.jrc.ec.europa.eu/communities/data-centres-code-conduct>, with a transition period of six months starting from the day of its publication (the 2021 version is available at <https://e3p.jrc.ec.europa.eu/publications/2021-best-practice-guidelines-eu-code-conduct-data-centre-energy-efficiency>).

<sup>(625)</sup> Issued on 1 July 2019 by the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC), (version of 4.6.2021: [https://www.cenelec.eu/dyn/www/?p=104:110:508227404055501:::FSP\\_ORG\\_ID,FSP\\_PROJECT,FSP\\_LANG\\_ID:1258297,65095,25](https://www.cenelec.eu/dyn/www/?p=104:110:508227404055501:::FSP_ORG_ID,FSP_PROJECT,FSP_LANG_ID:1258297,65095,25)).



## 8.2. Computer programming, consultancy and related activities

### *Description of the activity*

Providing expertise in the field of information technologies: writing, modifying, testing and supporting software; planning and designing computer systems that integrate computer hardware, software and communication technologies; on-site management and operation of clients' computer systems or data processing facilities; and other professional and technical computer-related activities.

The economic activities in this category could be associated with NACE code J62 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(626)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(627)</sup>, scientific peer-reviewed publications and open source<sup>(628)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(629)</sup> or rely on blue or green infrastructure<sup>(630)</sup> to the extent possible;

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<sup>(626)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(627)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(628)</sup> Such as Copernicus services managed by the European Commission.

<sup>(629)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(630)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 8.3. Programming and broadcasting activities

#### *Description of the activity*

Programming and broadcasting activities include creating content or acquiring the right to distribute content and subsequently broadcasting that content, such as radio, television and data programs of entertainment, news, talk, and the like, including data broadcasting, typically integrated with radio or TV broadcasting. The broadcasting can be performed using different technologies, over-the-air, via satellite, via a cable network or via Internet. This also includes the production of programs that are typically narrowcast in nature (limited format, such as news, sports, education, and youth-oriented programming) on a subscription or fee basis, to a third party, for subsequent broadcasting to the public.

The economic activities in this category could be associated with NACE code J60 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

#### *Technical screening criteria*

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##### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(631)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(632)</sup>, scientific peer-reviewed publications and open source<sup>(633)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(634)</sup> or rely on blue or green infrastructure<sup>(635)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A

<sup>(631)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(632)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(633)</sup> Such as Copernicus services managed by the European Commission.

<sup>(634)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(635)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 9. PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES

### 9.1. **Engineering activities and related technical consultancy dedicated to adaptation to climate change**

#### *Description of the activity*

Engineering activities and related technical consultancy dedicated to adaptation to climate change.

The economic activities in this category could be associated with NACE code M71.12 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/20061.

An economic activity in this category is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852 where it meets the technical screening criteria specified this section

#### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

The economic activity is predominantly aimed at the provision of consultancy that helps one or more economic activities for which the technical screening criteria have been set out in this Annex to meet those respective criteria for substantial contribution to climate change adaptation, while respecting the relevant criteria for doing no significant harm to other environmental objectives.

The economic activity complies with one the following criteria:

- (a) it uses state-of-the-art modelling techniques that:
  - (i) properly reflect climate change risks;
  - (ii) do not rely only on historical trends;
  - (iii) integrate forward-looking scenarios;
- (b) it develops climate models and projections, services and assessment of impacts, the best available science for vulnerability and risk analysis and related methodologies line with the most recent Intergovernmental Panel on Climate Change reports and scientific peer-reviewed publications.

The economic activity removes information, financial, technological and capacity barriers to adaptation.

The potential to reduce material impacts due to climate risks is mapped through a robust climate risk assessment in the target economic activity.

Activities in architectural design take into account climate proofing guidelines, climate-related hazards modelling and enable the adaptation of construction and infrastructure, including building codes and integrated management systems.

The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(636)</sup> or rely on blue or green infrastructure <sup>(637)</sup> to the extent possible;

<sup>(636)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(637)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity is not undertaken for the purposes of fossil fuel extraction or fossil fuel transport.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 9.2. Close to market research, development and innovation

### *Description of the activity*

Research, applied research and experimental development of solutions, processes, technologies, business models and other products dedicated to climate change adaptation.

The economic activities in this category could be associated with NACE code M72 or for research that is an integral part of those economic activities for which technical screening criteria are specified in this Annex the NACE codes set out in other Sections of this Annex in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852 where it meets the technical screening criteria set out in this Section.

### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

1. The economic activity researches, innovates or develops solutions, technologies, products, processes or business models, including nature based and nature inspired solutions<sup>(638)</sup>, dedicated to enable one or more activities for which the technical screening criteria have been specified in this Annex to meet the respective criteria for substantial contribution to climate change adaptation to increase their climate-resilience, while respecting the relevant criteria for doing no significant harm to other environmental objectives.
2. Where the researched, developed or innovated technology, product or other solution already enables an activity or several activities addressed in this Annex to meet their technical screening criteria for substantial contribution, the research, development and innovation activity focuses on the delivery of technologies, products or other solutions with new significant advantages, such as better performance or lower cost.
3. The economic activity removes information, financial, technological and capacity barriers to adaptation through new or improved solutions, technologies, products, processes or business models, including nature based solutions.

<sup>(638)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

4. The economic activity has the potential to reduce material impacts due to climate risks identified through a robust climate risk assessment in another economic activity through the development, research, or innovation of solutions, technologies, products, processes or business models, the risk reduction potential of which has at least been demonstrated in an operational environment <sup>(639)</sup> at pre-commercial scale and are further substantiated through at least one of the following elements:

- (a) the first use of a patent not older than 10 years associated with the solution, technology, product, process or business model;
- (b) other forms of intellectual property rights associated with the solution, technology, product, process or business model, such as trade secrets, trademarks or copyrights;
- (c) a permit obtained from a competent authority for operating the demonstration site associated with the solution, technology, product, process or business model for the duration of the demonstration project.

5. The economic activity uses state-of-art climate projections and assessment of impacts, the best available science for vulnerability and risk analysis and related methodologies in accordance with the most recent Intergovernmental Panel on Climate Change reports and scientific peer-reviewed publications as a benchmark for the solutions, technologies, products, processes or business models it develops.

Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity is not undertaken for the purposes of fossil fuel extraction, transport or use.  The projected life-cycle GHG emissions from the researched technology, product or other solution do not undermine GHG mitigation objectives under the Paris Agreement or hinder the deployment of climate mitigation solutions.
(3) Sustainable use and protection of water and marine resources	Any potential risks to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters from the researched technology, product or other solution are evaluated and addressed.
(4) Transition to a circular economy	Any potential risks to the circular economy objectives from the researched technology, product or other solution are evaluated and addressed, by considering the types of potential significant harm as set out in Article 17(1), point (d), of Regulation (EU) 2020/852.
(5) Pollution prevention and control	Any potential risks to generate a significant increase in the emissions of pollutants to air, water or land from the researched technology, product or other solution are evaluated and addressed.
(6) Protection and restoration of biodiversity and ecosystems	Any potential risks to the good condition or resilience of ecosystems or to the conservation status of habitats and species, including those of Union interest, from the researched technology, product or other solution are evaluated and addressed.

<sup>(639)</sup> Corresponding to at least Technology Readiness Level TRL 7 in accordance with Annex G of the General Annexes of HORIZON 2020 WORK PROGRAMME 2016– 2017, p. 29, satisfying at least the criteria for substantial contribution to climate change adaptation for the targeted activities.

## 10. FINANCIAL AND INSURANCE ACTIVITIES

10.1. **Non-life insurance: underwriting of climate-related perils***Description of the activity*

Provision of the following insurance services (other than life insurance) as defined in Annex I of Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 <sup>(640)</sup> related to the underwriting of climate related perils set out in Appendix A to this Annex:

- (a) medical expense insurance;
- (b) income protection insurance;
- (c) workers' compensation insurance;
- (d) motor vehicle liability insurance;
- (e) other motor insurance;
- (f) marine, aviation and transport insurance;
- (g) fire and other damage to property insurance;
- (h) assistance.

The economic activities in this category could be associated with NACE code K65.12 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852 where it meets the technical screening criteria set out in this section.

*Technical screening criteria*


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 Substantial contribution to climate change adaptation
 

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1. *Leadership in modelling and pricing of climate risks:*

1.1. The insurance activity uses state-of-the-art modelling techniques that:

- (a) properly reflect climate change risks;
- (b) do not only rely on historical trend;
- (c) integrate forward-looking scenarios.

1.2. The insurer publicly discloses how the climate change risks are considered in the insurance activity.

1.3. With the exception of legal restrictions on contractual conditions and insurance premiums, the insurance activity provides incentives for risk reduction by setting out the (pre)-conditions for the insurance coverage of risk and by acting as a price signal of risk. For the purpose of this point, reduced premiums or deductibles, possibly based on supportive information on existing/possible actions, to policyholders who protect an asset or activity against natural catastrophes damages may be considered an incentive for risk reduction.

1.4. After a climate risk event, the insurer provides information on the conditions under which coverage under the insurance activity could be renewed or maintained and in particular the benefits of building better in that context.

2. *Product design:*

2.1. Insurance products sold under the insurance activity offer risk-based rewards for preventive actions taken by policyholders.

For the purpose of this point, where a policyholder has invested in adaptation measures, lower premiums may be considered as a risk-based reward for preventive actions taken by policyholders.

<sup>(640)</sup> Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II), (OJ L 12, 17.1.2015, p. 1).

By way of derogation from this point, where legal restrictions on contractual conditions and insurance premiums prevent the insurance or reinsurance company from providing risk-based rewards, insurance products may instead provide to customers measures in relation to an asset, an activity, or people that prevent or protect against natural catastrophes. Such measures may be provided as information or advice to customers on climate risks and preventive measures that customers could take.

2.2. The distribution strategy for such products covers measures to ensure that policyholders are informed on the relevance of preventive measures that they could take, for the terms and conditions of the insurance coverage, including any impact of such measures on the insurance coverage or the premium level.

3. *Innovative insurance coverage solutions:*

3.1. Insurance products sold under the insurance activity offer coverage for the climate-related perils <sup>(641)</sup> where the demands and needs of policyholders require so.

3.2. Depending on the demands and needs of individual customers, products may include specific risk transfer solutions such as protection against business interruption, contingent business interruption, other non-physical damage-related loss factors, cascading effects and interdependencies of hazards (secondary perils), cascading impacts of interacting natural and technological hazards, critical infrastructure failures.

4. *Data sharing:*

4.1. With due regard to Regulation (EU) 2016/679 of the European Parliament and of the Council <sup>(642)</sup>, a significant share of loss data related to insurer's activity is made available, free of charge, to one or several public authorities for the purpose of analytical research. Those public authorities declare to use the data for purposes of enhancing adaptation to climate change by the society in a region, country or internationally and the insurer provides the data at a level of granularity sufficient for the use declared by the respective public authorities.

4.2. Where the insurer is not yet sharing such data with a public authority for the aforementioned purpose, it has declared the intention to make its data available, free of charge, to interested third parties and has indicated under which conditions such data can be shared. That declaration of intention to share available data is easily accessible, including on the insurer's website, for relevant public authorities.

5. *High level of service in post-disaster situation:*

Claims under insurance activity, both ongoing and those from large-scale loss events resulting from climate risks, are processed fairly with respect to customers, in accordance with high handling standards for claims and in timely fashion in line with applicable law and there has been no failure to do so in the context of recent large-scale loss events. Information as regards procedures on additional measures in case of large-scale loss events is publicly available.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	The activity does not include insurance of the extraction, storage, transport or manufacture of fossil fuels or insurance of vehicles, property or other assets dedicated to such purposes.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A

<sup>(641)</sup> See Appendix A.

<sup>(642)</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), (OJ L 119, 4.5.2016, p. 1).



(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 10.2. Reinsurance

### *Description of the activity*

Coverage of risks stemming from climate-related perils set out in Appendix A to this Annex ceded by the insurer to the reinsurer. The coverage is set out in an agreement between insurer and reinsurer specifying the insurers' products ('underlying product') from which the ceded risks originate. A reinsurance intermediary<sup>(643)</sup> may be involved in the preparation or conclusion of the contractual agreement between the insurer and the reinsurer.

The economic activities in this category could be associated with NACE code K65.20 in accordance with to the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is an enabling activity as referred to in Article 11(1) point (b) of Regulation (EU) 2020/852 where it meets the technical screening criteria set out this section.

### *Technical screening criteria*

#### Substantial contribution to climate change adaptation

##### 1. *Leadership in modelling and pricing of climate risks:*

###### 1.1. The reinsurance activity uses state-of-the-art modelling techniques that:

- (a) are used to properly reflect in the premium level the exposure, hazard and vulnerability to climate change risks as well as actions taken by the policyholder of the insurer to protect the insured asset or activity against those risks, where such information is provided by the insurer to the reinsurer;
- (b) do not only rely on historical trends;
- (c) integrate forward-looking scenarios.

###### 1.2. The reinsurer discloses publicly how the risks stemming from climate-related perils are considered in the reinsurance activity.

##### 2. *Supporting development and supply of enabling non-life reinsurance products:*

###### 2.1. The reinsurance activity's underlying products cover risks stemming from climate-related perils and reward, in a risk-based manner and without prejudice to legal restrictions on contractual conditions and insurance premiums, preventive actions taken by the insurer's policyholders.

###### 2.2. The reinsurance activity complies with one or more of the following criteria:

- (a) where desired by the insurer, the reinsurer engages with the insurer, either directly or via a reinsurance intermediary, during the development of the underlying product by:
  - (i) discussing possible reinsurance solutions that the reinsurer is willing to offer in relation to that product. The final product is brought to market using one of the reinsurance solutions that were discussed with the reinsurer during the product development phase;
  - (ii) providing data or other technical advice enabling the insurer to price the coverage for risks stemming from climate-related perils as well as risk-based rewards for preventive actions taken by the insurer's policyholders;
- (b) the insurer would likely reduce or discontinue its coverage under the underlying product without the reinsurance agreement or a comparable reinsurance agreement in place;

<sup>(643)</sup> As defined in Art. 2, point (5), of Directive (EU) 2016/97 of the European Parliament and of the Council of 20 January 2016 on insurance distribution, (OJ L 26, 2.2.2016, p. 19).

(c) the reinsurer provides, as part of the business relationship with the insurer or the reinsurance intermediary, data or other technical advice or both enabling the insurer to offer coverage of risks stemming from climate-related perils and the coverage allows for risk-based rewards for preventive actions taken by the insurer's policyholders.

2.3. Where a reinsurance product applies at the level of a portfolio of underlying products, only a share of the reinsurance activity's underlying products may cover risks stemming from climate-related perils and reward, in a risk-based manner, preventive actions taken by the insurer's policyholders for the purpose of point 2.1. In that case, the reinsurer is able to identify the share of reinsurance premiums that relate to those underlying products.

### 3. Innovative reinsurance coverage solutions:

3.1. Reinsurance products sold under the reinsurance activity offer coverage for risks stemming from climate-related perils where the demands and needs of the insurer's clients, based on the underlying products, require so. Such insurance products appropriately reflect risk-based rewards for preventive actions taken by the insurer's policyholders.

3.2. Depending on the demands and needs of the individual customers of the insurer, reinsurance products may include specific risk transfer solutions which may include protection against business interruption, contingent business interruption, other non-physical damage-related loss factors, cascading effects and interdependencies of hazards (secondary perils), cascading impacts of interacting natural and technological hazards or critical infrastructure failures.

### 4. Data sharing:

4.1. With due regard to Regulation (EU) 2016/679, a significant share of loss data related to the reinsurer's activity is made available, free of charge, to one or several public authorities for the purpose of analytical research. The public authorities declare to use the data for purposes of enhancing adaptation to climate change by the society in a region, country or internationally and the reinsurer provides the data at a level of granularity sufficient for the use declared by the respective public authorities.

4.2. Where the reinsurer is not yet sharing such data with a public authority for the aforementioned purpose, it has declared the intention to make its data available, free of charge, to interested third parties and has indicated under which conditions such data can be shared. That declaration of intention to share available data is easily accessible, including on the reinsurer's website, for relevant public authorities.

### 5. High level of service in post-disaster situation:

Claims under the reinsurance activity, both ongoing and those from large-scale loss events resulting from risks stemming from climate-related perils, are processed fairly with respect to customers, in accordance with high handling standards for claims and in timely fashion in line with applicable law and there has been no failure to do so in the context of recent large-scale loss events. Where appropriate, the reinsurer supports the insurer or the reinsurance intermediary in assessing the claims from the underlying product. Information as regards procedures on additional measures by the reinsurer in case of large-scale loss events is publicly available.

### Do no significant harm ('DNSH')

(1) Climate change mitigation	The reinsurance activity does not cover cession of insurance of the extraction, storage, transport or manufacture of fossil fuels or the cession of insurance of vehicles, property or other assets dedicated to such purposes.
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A

(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 11. EDUCATION

*Description of the activity*

Public or private education at any level or for any profession. The instructions may be oral or written and may be provided by radio, television, internet or via correspondence. It includes education by the different institutions in the regular school system at its different levels as well as adult education and literacy programmes, including military schools, academies and prison schools at their respective levels.

The economic activities in this category could be associated with NACE code P85 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this section.

*Technical screening criteria*

## Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(644)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(645)</sup>, scientific peer-reviewed publications and open source<sup>(646)</sup> or paying models.

<sup>(644)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(645)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(646)</sup> Such as Copernicus services managed by the European Commission.

## 4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions <sup>(647)</sup> or rely on blue or green infrastructure <sup>(648)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

## Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## 12. HUMAN HEALTH AND SOCIAL WORK ACTIVITIES

## 12.1. Residential care activities

*Description of the activity*

Provision of residential care combined with either nursing, supervisory or other types of care as required by the residents. Facilities are a significant part of the production process and the care provided is a mix of health and social services with the health services being largely some level of nursing services.

The economic activities in this category could be associated with NACE code Q87 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

*Technical screening criteria*

## Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

<sup>(647)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(648)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(649)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(650)</sup>, scientific peer-reviewed publications and open source<sup>(651)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(652)</sup> or rely on blue or green infrastructure<sup>(653)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A

<sup>(649)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(650)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(651)</sup> Such as Copernicus services managed by the European Commission.

<sup>(652)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(653)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	A waste management plan is in place and ensures (1) the safe and environmentally-sound handling of hazardous waste (in particular toxic or infectious waste) and pharmaceuticals and (2) maximal re-use or recycling of non-hazardous waste, including through contractual agreements with waste management partners.
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 13. ARTS, ENTERTAINMENT AND RECREATION

#### 13.1. Creative, arts and entertainment activities

##### *Description of the activity*

Creating, arts and entertainment activities include the provision of services to meet the cultural and entertainment interests of their customers. This includes the production and promotion of, and participation in, live performances, events or exhibits intended for public viewing and the provision of artistic, creative or technical skills for the production of artistic products and live performances. These activities exclude the operation of museums of all kinds, botanical and zoological gardens, the preservation of historical sites and nature reserves activities, gambling and betting activities as well as sports and amusement and recreation activities.

The economic activities in this category could be associated with NACE code R90 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

##### *Technical screening criteria*

##### Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(654)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

<sup>(654)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(655)</sup>, scientific peer-reviewed publications and open source<sup>(656)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(657)</sup> or rely on blue or green infrastructure<sup>(658)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

### 13.2. Libraries, archives, museums and cultural activities

#### *Description of the activity*

Libraries, archives, museums and cultural activities includes the activities of libraries and archives, the operation of museums of all kinds, botanical and zoological gardens, the operation of historical sites and nature reserves activities. These activities also include the preservation and exhibition of objects, sites and natural wonders of historical, cultural or educational interest, including world heritage sites. These activities exclude sports and amusement and recreation activities such as the operation of bathing beaches and recreation parks.

<sup>(655)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(656)</sup> Such as Copernicus services managed by the European Commission.

<sup>(657)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(658)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).



The economic activities in this category could be associated with NACE code R91 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

#### *Technical screening criteria*

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#### Substantial contribution to climate change adaptation

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1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
  - (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
  - (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
  - (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
  - (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(659)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(660)</sup>, scientific peer-reviewed publications and open source<sup>(661)</sup> or paying models.
  4. The adaptation solutions implemented:
    - (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
    - (b) favour nature-based solutions<sup>(662)</sup> or rely on blue or green infrastructure<sup>(663)</sup> to the extent possible;
    - (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
    - (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;

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<sup>(659)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(660)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(661)</sup> Such as Copernicus services managed by the European Commission.

<sup>(662)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en)).

<sup>(663)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

(e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with one of the following primary objectives:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

**13.3. Motion picture, video and television programme production, sound recording and music publishing activities**

*Description of the activity*

Motion picture, video and television programme production, sound recording and music publishing activities include the production of theatrical and non-theatrical motion pictures whether on film, video tape or disc for direct projection in theatres or for broadcasting on television, supporting activities such as film editing, cutting or dubbing, distribution of motion pictures and other film productions to other industries as well as motion picture or other film productions projection. Buying and selling of motion picture or other film productions distribution rights is also included. These activities also include the sound recording activities, including the production of original sound master recordings, releasing, promoting and distributing them, publishing of music as well as sound recording service activities in a studio or elsewhere.

The economic activities in this category could be associated with NACE code J59 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Where an economic activity in this category complies with the substantial contribution criterion specified in point 5, the activity is an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, provided that it meets the technical screening criteria set out in this Section.

*Technical screening criteria*

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Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.

2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:

- (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
- (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
- (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:

- (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios<sup>(664)</sup> consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.

3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports<sup>(665)</sup>, scientific peer-reviewed publications and open source<sup>(666)</sup> or paying models.

4. The adaptation solutions implemented:

- (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- (b) favour nature-based solutions<sup>(667)</sup> or rely on blue or green infrastructure<sup>(668)</sup> to the extent possible;
- (c) are consistent with local, sectoral, regional or national adaptation plans and strategies;
- (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

5. In order for an activity to be considered as an enabling activity as referred to in Article 11(1), point (b), of Regulation (EU) 2020/852, the economic operator demonstrates, through an assessment of current and future climate risks, including uncertainty and based on robust data, that the activity provides a technology, product, service, information, or practice, or promotes their uses with the primary objectives of:

- (a) increasing the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; or
- (b) contributing to adaptation efforts of other people, of nature, of cultural heritage, of assets and of other economic activities.

<sup>(664)</sup> Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

<sup>(665)</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>(666)</sup> Such as Copernicus services managed by the European Commission.

<sup>(667)</sup> Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of 4.6.2021: [https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions\\_en/](https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/)).

<sup>(668)</sup> See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM/2013/0249 final).

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Do no significant harm ('DNSH')

(1) Climate change mitigation	N/A
(3) Sustainable use and protection of water and marine resources	N/A
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	N/A
(6) Protection and restoration of biodiversity and ecosystems	N/A

## Appendix A

CLASSIFICATION OF CLIMATE-RELATED HAZARDS <sup>(1)</sup>

	Temperature-related	Wind-related	Water-related	Solid mass-related
<b>Chronic</b>	Changing temperature (air, freshwater, marine water)	Changing wind patterns	Changing precipitation patterns and types (rain, hail, snow/ice)	Coastal erosion
	Heat stress		Precipitation or hydrological variability	Soil degradation
	Temperature variability		Ocean acidification	Soil erosion
	Permafrost thawing		Saline intrusion	Solifluction
			Sea level rise	
			Water stress	
<b>Acute</b>	Heat wave	Cyclone, hurricane, typhoon	Drought	Avalanche
	Cold wave/frost	Storm (including blizzards, dust and sandstorms)	Heavy precipitation (rain, hail, snow/ice)	Landslide
	Wildfire	Tornado	Flood (coastal, fluvial, pluvial, ground water)	Subsidence
			Glacial lake outburst	

<sup>(1)</sup> The list of climate-related hazards in this table is non-exhaustive, and constitutes only an indicative list of most widespread hazards that are to be taken into account as a minimum in the climate risk and vulnerability assessment.

*Appendix B***GENERIC CRITERIA FOR DNSH TO SUSTAINABLE USE AND PROTECTION OF WATER AND MARINE RESOURCES**

Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential as defined in Article 2, points (22) and (23), of Regulation (EU) 2020/852, in accordance with Directive 2000/60/EC <sup>(1)</sup> and a water use and protection management plan, developed thereunder for the potentially affected water body or bodies, in consultation with relevant stakeholders.

Where an Environmental Impact Assessment is carried out in accordance with Directive 2011/92/EU and includes an assessment of the impact on water in accordance with Directive 2000/60/EC, no additional assessment of impact on water is required, provided the risks identified have been addressed.

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<sup>(1)</sup> For activities in third countries, in accordance with applicable national law or international standards which pursue equivalent objectives of good water status and good ecological potential, through equivalent procedural and substantive rules, i.e. a water use and protection management plan developed in consultation with relevant stakeholders which ensures that 1) the impact of the activities on the identified status or ecological potential of potentially affected water body or bodies is assessed and 2) deterioration or prevention of good status/ecological potential is avoided or, where this is not possible, 3) justified by the lack of better environmental alternatives which are not disproportionately costly/technically unfeasible, and all practicable steps are taken to mitigate the adverse impact on the status of the body of water.

*Appendix C***GENERIC CRITERIA FOR DNSH TO POLLUTION PREVENTION AND CONTROL REGARDING USE AND PRESENCE OF CHEMICALS**

The activity does not lead to the manufacture, placing on the market or use of:

- (a) substances, whether on their own, in mixtures or in articles, listed in Annexes I or II to Regulation (EU) 2019/1021, except in the case of substances present as an unintentional trace contaminant;
- (b) mercury and mercury compounds, their mixtures and mercury-added products as defined in Article 2 of Regulation (EU) 2017/852;
- (c) substances, whether on their own, in mixture or in articles, listed in Annex I or II to Regulation (EC) No 1005/2009;
- (d) substances, whether on their own, in mixtures or in an articles, listed in Annex II to Directive 2011/65/EU, except where there is full compliance with Article 4(1) of that Directive;
- (e) substances, whether on their own, in mixtures or in an article, listed in Annex XVII to Regulation (EC) 1907/2006, except where there is full compliance with the conditions specified in that Annex;
- (f) substances, whether on their own, in mixtures or in an article, meeting the criteria laid down in Article 57 of Regulation (EC) 1907/2006 and identified in accordance with Article 59(1) of that Regulation, except where their use has been proven to be essential for the society;
- (g) other substances, whether on their own, in mixtures or in an article, that meet the criteria laid down in Article 57 of Regulation (EC) 1907/2006, except where their use has been proven to be essential for the society.



*Appendix D***GENERIC CRITERIA FOR DNSH TO PROTECTION AND RESTORATION OF BIODIVERSITY AND ECOSYSTEMS**

An Environmental Impact Assessment (EIA) or screening <sup>(1)</sup> has been completed in accordance with Directive 2011/92/EU <sup>(2)</sup>.

Where an EIA has been carried out, the required mitigation and compensation measures for protecting the environment are implemented.

For sites/operations located in or near biodiversity-sensitive areas (including the Natura 2000 network of protected areas, UNESCO World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment <sup>(3)</sup>, where applicable, has been conducted and based on its conclusions the necessary mitigation measures <sup>(4)</sup> are implemented.

<sup>(1)</sup> The procedure through which the competent authority determines whether projects listed in Annex II to Directive 2011/92/EU is to be made subject to an environmental impact assessment (as referred to in Article 4(2) of that Directive).

<sup>(2)</sup> For activities in third countries, in accordance with equivalent applicable national law or international standards requiring the completion of an EIA or screening, for example, IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks.

<sup>(3)</sup> In accordance with Directives 2009/147/EC and 92/43/EEC. For activities located in third countries, in accordance with equivalent applicable national law or international standards, that aim at the conservation of natural habitats, wild fauna and wild flora, and that require to carry out (1) a screening procedure to determine whether, for a given activity, an appropriate assessment of the possible impacts on protected habitats and species is needed; (2) such an appropriate assessment where the screening determines that it is needed, for example IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

<sup>(4)</sup> Those measures have been identified to ensure that the project, plan or activity will not have any significant effects on the conservation objectives of the protected area.