Access to energy:

Is a common framework for outcome measurement possible?

Lessons learned from the first workshops of the LabODD Energy Group

*In October 2020, CERISE launched the **LabODD** to support impact organizations better **measure outcomes with their beneficiaries, in line with the Sustainable Development Goals (SDGs).** Within the LabODD, an Energy Group was set up in April 2021. Its objective is to explore the challenges and practices of measuring outcomes **in the energy access sector.** The group is composed mainly of impact organizations (social enterprises, impact investors) seeking to improve access to reliable, modern and affordable energy services.*

*Group members expressed the desire to share experiences among peers, and **to define a common framework for measuring, analyzing and reporting outcomes,** using standardized indicators. Their hope is to complement existing frameworks, increase the credibility of their approach, and create a common language for talking about outcomes in this sector.*

*Over the course of a few meetings, however, a question quickly emerged: **is it even possible to align with a common framework for measuring outcomes in a sector as diverse as energy access?** Between May and July 2021, we conducted four workshops around this question. This article presents the main conclusions.*

A common framework for outcome measurement, what for?

The energy access sector is **already well versed in measuring outcomes**. Social enterprises, NGOs, networks, impact investors, donors all seem to be interested in measuring outcomes at the beneficiary level. There are also various initiatives in the sector to promote and harmonize outcome measurement (GIIN, IRIS+, GOGLA, 60 dB, etc.).

But what **motivates these different actors in terms of outcome measurement?** What are they trying to measure, when, how, and why? In the Energy Group, we looked more closely at three actors: energy access social enterprises, impact investors, and donors. After a collective mapping exercise, we concluded that even if these stakeholders often collect a few common indicators (e.g. number of final beneficiaries, number of products sold / kWp installed, CO_2 emissions avoided...), their expectations in terms of measuring outcomes can differ greatly.

For **social enterprises**, it is above all a question of **piloting their activity:** they track indicators related to outreach (number of customers, number of products or kWh sold), product management (number of complaints for defective kits), and customer satisfaction in order to evaluate and adjust their offer. They are also concerned with **communicating** and **reporting** on the changes brought by their products or services for the end-client, in order to justify their raison d'être.

For **impact investors,** outcomes are measured to **evaluate the effectiveness of their approach**. The focus is first on changes at the level of investees (financial performance, job creation, ESG management, etc.), before looking at changes for end-clients.

Conversely, for **donors,** outcome measurement is **focused on the final beneficiaries**: outreach, profile of beneficiaries, changes generated... Donors collect this data in order to **evaluate** and **compare** the programs they support, to see where impact is optimized.

For **investors** and **donors**, monitoring outcomes is, by definition, a collaborative effort. Rarely do they have the resources in the field to do data collection, and so must rely on their social enterprises partners. Data collection **takes time** and is usually done on an annual basis, or at most quarterly. In addition, social enterprises often have their own reporting system, making data **consolidation** more **difficult** for investors and donors**.**

Social enterprises struggle at times to collect the **data requested by donors and investors,** and question the operational utility of certain data points (e.g. age or gender of the different household members whose access to energy has been improved). The **lack of alignment** between donors (in terms of indicators requested) also makes reporting burdensome for social enterprises.

In light of the different needs and expectations of the various stakeholders, the Energy Group concluded there is a need to align on **a common reference framework,** with **standardized** indicators useful **for decision-making,** clear definitions, and precise calculation methods.

For more details, please refer to the minutes of workshop #2 "Needs and expectations of different stakeholders" and the mapping of outcome measurement needs.

Challenge #1 – Aligning on outcomes to be measured

To align on a common framework, we must already agree on the outcomes we are trying to measure. We invited Energy Group members to "forget", for the duration of a workshop, their current practices, and to go back to the source: their impact thesis. By offering energy access products or services (or by supporting social enterprises that offer these products or services), what changes do they expect to generate?

One theory of change... or several theories of change?

We quickly realized that **developing a single, "standard" theory of change is mission impossible in the face of the diversity of energy solutions, their uses, and the contexts in which they are used.** The group members worked on 3 distinct theories of change: for (i) solar solutions for basic household needs (solar lanterns, solar home systems*)*, (ii), solar kiosks or mini-grids, and (iii) cooking solutions. Expected outcomes for each one are very different: a solar lantern is expected to increase the number of hours of lighting per day, while an improved cookstove is expected to reduce biomass consumption. Expected outcomes would have been even more different if we had worked on the theories of change of other types of energy products (biogas digesters, solar pumping, photovoltaics for productive use, etc.). We also found, in the case of mini-grids in particular, that the expected outcomes are not the same depending on the type of customers (households, enterprises, schools, dispensaries, etc.). Similarly, with cooking solutions, expected outcomes in terms of reducing energy costs depend on the type of improved cookstove proposed (wood or gas).

Our conclusion was that we cannot align ourselves on a sole theory of change... but maybe on several theories of change? Shall we then consider a **framework of common standards, operationalized by sub-sets of optional indicators to adapt to different solutions / uses / contexts?**

Expected outcomes... at what level?

The theories of change we worked on focused on expected outcomes for end-beneficiaries during the use phase of the product or service. But if we wanted to go further in the exercise, we could **take into account the entire value chain of products,** from production to the end of life, and reflect on the expected outcomes at each level of the value chain (see The SDG Guide for Companies – SDG Compass – p.12).

Expected outcomes... defined by whom?

When we define our theory of change, we often have a bias: we focus first and foremost on what we identify and consider positive. The **risk** is that we "**cherry pick" the SDGs** and communicate only about our positive contributions, thereby obscuring any **negative externalities.** When trying to measure outcomes, it is important to keep in mind the potential negative impacts, in order mitigate them. In the energy access sector, one of these negative externalities is directly linked to the value chain approach: it is the end-of-life of products (especially solar). Who has ever seen an industry player communicate about the number of obsolete solar kits recovered/repaired/recycled? What is not measured remains invisible. The stakes around the end-of-life of solar kits are nevertheless high, whether in terms of waste management, risk of pollution, or misuse of rare metals.

We then asked ourselves: who defines the outcomes we are trying to measure? And **what are the possible biases in the choice of outcomes to be measured?**

The "lean data" approach, promoted by Acumen and 60_decibels, provides an interesting answer: it proposes **to ask open questions to beneficiaries** and to **listen to what they value, what matters to them**, what according to them helped to improve their quality of life. This is an approach that WeLight, one of the LabODD members, has adopted, through the collection of customer testimonials every semester. Contrary to their expectations, WeLight identified that access to energy had exacerbated social inequalities within certain communities: it was the most advantaged people who had been able to access improved energy services and develop their activities, while the most vulnerable people had remained excluded – a point that WeLight is now much more careful about.

For more details, please refer to the minutes of workshop #1 "Theories of change and SDGs" and the theories of change.

Challenge #2 – Aligning with standardized indicators

The SDGs, an ideal framework?

Once our theories of change were developed, we sought to link each of the expected outcomes with an SDG target. In the energy access sector, the trend is generally to communicate on the contribution to **SDG 7** "Ensure universal access to affordable, reliable, and modern energy services". The exercise carried out by the Group found that **expected outcomes at beneficiary level contribute to several other SDG objectives,** like to sustainable growth (SDG 8), reduction of inequalities (SDG 10), health (SDG 3), education (SDG 4), gender equality (SDG 5), food security (SDG 2), or the preservation of ecosystems (SDG 15).

The SDG framework offers the opportunity to adopt a common language and to come together around shared objectives. However, it has its limitations: the **indicators proposed at the level of each target remain very macro,** and not precise enough to account for energy access projects at the micro level. It is on the basis of this observation that CERISE and its partners had developed the **MetODD-SDG tool:** a selective list of indicators at the microeconomic level, aligned with the targets of the SDGs, and operational for social enterprises.

Catalogues of standard indicators

The GIIN (Global Impact Investing Network) encourages impact investors to align with standardized impact indicators, defined on the basis of research and inputs from thematic/sector experts. These impact indicators are referenced in the **IRIS+ catalogue,** an internationally recognized framework that provides for each indicator a precise formulation, a detailed definition, and a harmonized calculation method. As part of the Navigating Impact project, it is possible to explore these impact indicators by theme or by SDG. Among the proposed themes, we find in particular access to energy, with different strategic axes proposed (improvement of energy solutions for: cooking / health / connectivity / lighting of companies / lighting of households...).

CERISE's MetODD-SDG tool offers indicators aligned with those of the IRIS+ catalogue.

IRIS+ is a very useful repository today. But to date, it does not sufficiently explore the notions of "outcomes" (vs. "outputs") and does not yet cover the full diversity of energy access solutions. IRIS+ is indeed used as a "catalogue", from which each organization picks what looks interesting to them to report their positive effects, from a long list of possible indicators.

In a sector as diverse as access to energy, would it be possible to go further than a "catalogue" approach?

Towards a benchmarking tool?

With the goal in mind of creating a common and potentially benchmarking approach for energy access enterprises, 60 decibels has developed and tested a new tool. The **60 dB Impact Index** focuses on 5 indicators, related to the **profile of customers** (level of poverty), the **contribution** of enterprises in access to new services (first access, no good alternatives), and the perception of customers **regarding change in their quality of life.**

It is not surprising that in a sector as diverse as that of access to energy, the only common indicator retained by 60 dB in terms of outcomes is related to customers' perception of their quality of life. For the Energy Group members, the indicator of perception is appealing, because it involves no assumptions and lets the customers express themselves freely. Moreover, it looks at what ultimately matters: do the customers think that the energy product or service has improved their quality of life?

However, members also felt that this approach was too limited, not allowing to identify the complexity behind a change in quality of life. The indicator of perception is not precise enough to be useful for operational decision-making; the very goal over benchmarking, after all, is to compare in order to improve.

The group therefore proposed to improve this approach, by probing deeper around the perceived changes beyond the quality of life, and **by creating optional modules** to be used according to the proposed energy product / service and desired analysis**.**

For more details, please refer to the minute of workshop #4 "The lean data approach".

Challenge #3 – Simplifying data collection

To define a framework for outcome measurement on which the various stakeholders can align, Energy Group members agreed that data collection must be carried out simply, without generating significant costs or an excessive workload.

Starting from existing data...

The first way to do this, we agreed, was to start with the data already available in social enterprises. The latter often **monitor daily a certain number of indicators related to their production** (nb of kWp installed, nb of customers, nb of products or kWh sold) and the **management of after-sales service** (nb of complaints, nb of defective products replaced).

These indicators already give key information on some outcomes, in terms of **outreach** (e.g. nb of products sold) and **"risk" of non-achievement of outcomes** (e.g. nb of complaints).

Analyzing this data by crossing it **with a simple segmentation** can reveal **operational information useful for decision-making.** For example, by analyzing products by type of customer (gender, age, location, first access...), the company can see if it is reaching its initial target, and take necessary measures to adjust the course (review its communication, adjust its offer / procedures, develop new products ...).

It seems, however, that social enterprises in energy access do not **collect systematically customer-profile data.** It depends a lot on the business model of the company. In the absence of specific reporting constraints, identifying beneficiaries' profiles (gender, poverty level, location) does not seem to be a priority for companies with a sales-based model. Conversely, companies that operate on rental, leasing, pay-as-you-go or consumer billing models, maintain long-term relationships with their customers, and therefore tend to collect more data on profiles, allowing results analysis by segments.

The testimony of different members also made it possible to identify a specificity of the energy sector: **the frequent use of technology to collect data,** whether through **applications** (for payment tracking) or via **connected energy equipment** (for monitoring consumption). These technologies offer simplified data collection possibilities, with significant potential for analysis. One of the Energy Group members, Benoo, plans to use this data to make profit forecasts for enterprises, once equipped with an energy solution. The forecasts will take into account activity, geographical localization and the level of access to energy. This would make it possible to propose an optimal solution for each enterprise and to index rent on predicted revenues.

Using formulas?

The production data already collected by social businesses presents an advantage: it has a strong link to some outcomes. By using formulas, based on average assumptions, it is possible to estimate some changes: for example, the volume of CO_2 emissions avoided, based on the number of solar kits sold.

Some of the members of the Energy Group use the **formulas developed by GOGLA,** the network of players in the off-grid solar sector. Since 2015, GOGLA has been working on the definition of standard **formulas, that use "output"** data (existing transactional data, generally monitored by enterprises, such as the number of kits sold) **in order to estimate the outcomes generated by an activity** (e.g. nb of people with improved access to energy, nb of additional lighting hours, CO_2 emissions avoided, savings on energy expenditure, etc.). These formulas are currently only available for the following products: pico-solar and solar home systems, fans, televisions. They are not yet suitable for solar solutions for productive use, but GOGLA plans to continue its work on the subject.

For Energy Group members, these formulas have the advantage of providing a common language, being easy to use, and thus reducing the burden of reporting to donors and investors. Their biggest limitation is that they are only useful for **communicating** and **reporting:** the average variables used to calculate the changes **do not reveal nuances needed to make operational decisions based on the data.** GOGLA proposes, for example, to apply in these formulas a "loss rate" of 3% (estimating that 3% of solar kits are not used by customers on average, due to defects or other). This rate is certainly based on various studies and scientific data, but it remains an average, which can be very far from the reality on the ground in a specific area. Applied as is, it does not alert the company to possible problems.

For more details, please refer to the <u>*minutes of workshop #3 "Existing data and their use".*</u>

Favoring a lean data approach?

Leveraging existing data to measure outcomes is promising, but calls for regular data collection, in a customer-centric approach. Production or operating data usually collected by social businesses provide information on product use, but needs to be supplemented by user

profiles. Moreover, such data do not provide information on customer satisfaction, changes or perceptions of changes. How do you collect this missing information?

Within the Energy Group, we took a closer look at **the "lean data" approach** formalized and promoted by [Acumen](#) to enable a "fast, reliable, customer-centric impact measurement". The approach is often used to better understand client profiles, assess their level of satisfaction, and measure specific outcomes. It promotes the use of very short questionnaires, focused on the essentials, in a customer-centered approach, with regular data collection to feed decision-making, and the use of low-cost technologies to facilitate data collection (call centers, SMS, IVR[1]...).

Some energy access social businesses already use **call centers to manage their after-sales services**. One of the Group members, WeLight, decided to go through its call center to assess customer satisfaction and collect social impact data.

For Energy Group members, the "lean data" approach has many advantages (speed, simplicity, useful for decision-making, proximity to the customer, etc.). However, we've found that if a company wants quality and depth, the approach is not necessarily that "lean." For WeLight, this even represents a significant cost per month. However, WeLight believes that this brings real added value to the company, as a **decision-making tool allowing** them to adjust their offer, services and strategy with efficiency and agility.

For more details, please refer to the [minute of workshop #4 "The lean data approach".](#)

Testing, sharing and exchanging

The first exchanges of the LabODD Energy Group revealed that it is not so simple to define a common framework for outcome measurement in a multifaceted sector. The energy access sector has the advantage of being a dynamic sector, which questions its impact: there are already many reflections, initiatives, sharing of experiences...

To go further, the Energy Group therefore plans to test different approaches in the field, evaluate them and share its experiences.

If you would like to contribute to this reflection, please contact us!

Find the minutes of the different workshops [here.](#)

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[1] IVR or Interactive Voice Response: computer system capable of interacting with a user by telephone.