

Peeling the Onion: Monitoring and Evaluation and other Acronyms for Assessment and Learning in Energy Access

DISCUSSING VARIOUS APPROACHES FOR MONITORING AND EVALUATION WITHIN ENERGY ACCESS

Jun 16, 2022 | Webinar | Anamika Dutt and Vandita Sahay

INTRODUCTION

Last-mile energy access continues to be a challenge. This lack of access to energy gives an opportunity to clean energy practitioners to cater to the energy needs of vulnerable communities in far-flung regions, often with support from donor, governments, philanthropic organizations, and the private sector. Access to energy provides social, economic, and environmental benefits to local communities in developing countries. However, it is also imperative to track and measure these benefits and other changes these communities experience. In this space, monitoring and evaluation (M&E) systems for tracking and measuring developmental outcomes are essential (ESMAP n.d.). These systems ensure that the interventions are carefully constructed, and the lessons learned are replicable, and that different needs and on-the-ground realities are understood (Raitzer et al. 2019; O’Cathain et al. 2019). Moreover, a standardized M&E process helps understand these benefits irrespective of the location of a program. It covers methods that ensure equity-focused implementation, creates ethical protocols for intervention strategies, and measures evidence, all of which must be accessible to all stakeholders.

In this context, World Resources Institute (WRI) organized a webinar at the Asia Clean Energy Forum (ACEF) 2022 to understand the different components of M&E within the energy access program. M&E exercises aim to measure the progress, success, and impact of energy access based on identified indicators such as socioeconomic indicators, household characteristics, consumer knowledge/awareness, and financial linkages.

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These indicators, which could be qualitative or quantitative, depict the current situation and indicate the degree of change. In M&E processes, these indicators are measured throughout the lifeline of the project, and many are at times measured even after the project has ended.

M&E not only caters to donor reporting and impact assessment but also encompasses various aspects of a whole intervention. Although M&E is important for measuring change in social interventions, it is still a growing field. M&E processes and systems are used interchangeably depending on the stakeholders who create them. Within this spectrum, components of learning, data monitoring, evaluation of changes and goals, and an understanding of needs and realities can create an environment that helps build better interventions for clean energy or energy access. To reap sustainable benefits, it is important for energy access projects to consider the local socioeconomic contexts, which play a role in the successes and learnings of the interventions.

Within energy access, one needs to look at the components of various levels of impact, including a recognition of the various activities and interventions that attribute changes in livelihoods, health, and education to program activities. Further, community needs assessment is a crucial component of M&E in energy access programs, along with identifying the components of equity and diversity. Other components include energy assessment, energy aspirations, analytical services, energy system sizing, scoping exercises, and an M&E plan. The M&E process starts at the input stage and ends with an impact assessment after the energy project is completed. The input stage includes the budget, technical expertise, technical equipment, and other aspects related to all the stakeholders involved in the project. The activities stage involves engaging with communities, installing mini-grids, conducting training and workshops for the local communities, and so on. The next stage is the output stage, in which the project delivers the produced goods and services, such as clean energy services to the village and using energy to run solar water pumps and rice hullers for improving the productivity of the end user. The outcome stage is the result achieved from the output of the energy project. Examples of such results are the time saved by women in collecting firewood and improved health services and vaccination programs in hospitals due to cold refrigeration enabled by energy access. The impact stage, for many projects, contributes to various overarching goals such as national development goals or Sustainable Development Goals (SDGs), for example, greater gender equality, improved standard of living leading to economic well-being, and improved health for women and children due to reduced indoor pollution from fuelwood cooking. All these stages play a key role in the M&E process, and it is important to understand them in greater detail. It is also critical to note that the process is not linear; similar to any developmental process, it is a complex chain.

Although these processes may seem familiar to many practitioners, at the Asia Clean Energy Forum (ACEF) 2022, the WRI team sat down with a few M&E experts from around the world to understand the M&E spectrum in detail and to improve the understanding of M&E processes, especially with reference to energy access. Each expert spoke about the importance of a component of the M&E processes.

WORKING WITH COMMUNITIES FOR ENERGY ACCESS

Marlistya Citraningrum, Programme Manager for Sustainable Energy Access, Institute for Essential Services Reform (IESR)

In Indonesia, energy access for electricity is measured using the electricity ratio, which is defined as the ratio of the number of households connected to lighting sources to the total number of households in the country. Apart from this, there are no separate definitions for the productive uses of electricity. Any household connected to lighting sources is considered electrified. Hence, M&E in Indonesia for energy access is challenging because the only indicator is the electricity ratio. It is necessary to analyze both the mode of energy use and the quality of the energy supply, especially for pro-poor energy delivery systems.

It is also necessary to incorporate energy development models that would inform all the energy access needs of communities.

To address the need for providing inclusive energy access, we, together with Catholic Agency for Overseas Development (CAFOD) and International Institute for Environment & Development (IIED), have designed a six-step **energy delivery model**:

STEP 1: The starting point is to identify the right questions to ask the community, government, and stakeholders.

STEP 2: Be inclusive, as this is a bottom-up approach that aims to include all the relevant stakeholders and consider the needs of the communities.

STEP 3: Build understanding. Explore the needs of the target end users in greater depth. Understand their priority needs and the energy and non-energy gaps that are preventing their needs from being met. Develop a value proposition.

STEP 4: Design and test the process; that is, model and test run the process.

STEP 5: Optimize and review the process by thinking about the financial, social, and environmental risks and how they could be alleviated.

STEP 6: Implement the project, and evaluate it as it progresses.

Since 2016, we have been piloting the model in a remote village, located in the eastern part of Indonesia, that was not connected to the grid until last year. However, although the village itself was connected to the grid, only a few households in it were connected to the grid. Most of the villagers are farmers who grow cocoa, coffee, and candlenuts. The energy needs of the community were assessed together with different groups, and the renewable energy available within and around the village was factored in. The scoping revealed energy needs beyond basic services; that is, agricultural processes and educational facilities needed to be improved. This enabled us to engage with the stakeholders and better understand the resources needed by the community. These engagements helped us create a Theory of Change (ToC) that worked for the beneficiaries and not just for the implementers, and, by extension, a better M&E design to measure how energy access benefits the community.

INCLUDING COMPONENTS OF RESILIENCE WITHIN M&E SYSTEMS

Ms. Namrata Ginoya, Senior Programme Manager - Resilience and Energy, WRI India

In 2019, India declared itself 100 percent electrified, but this was from the perspective of households. There is lack of energy access in institutions such as health and educational centers. When we speak of energy access solutions, the primary focus needs to be on climate resilience. The Intergovernmental Panel on Climate Change (IPCC) definition of resilience states that by building resilience one can reduce exposure to climate change events and improve coping mechanisms such as access to finance, response to emergency services, access to development services, and access to information.

If the infrastructure is not resilient, then any energy access intervention gets wasted. Any distributed renewable energy (DRE) system that is installed as a source of reliable energy is affected by climate change/extreme climactic conditions. Hence, we need to design these systems with thorough design planning, develop community planning, look at finance mechanisms, develop operations and maintenance (O&M), and finally formulate the M&E framework accordingly. For M&E, when building resilience indicators, one needs to look at how the indicators are defined and what they are designed to address within the intervention. Moreover, during the M&E design phase, the focus needs to be on looking at outcomes rather than on arriving at indicators. The challenge with M&E is also to understand the components of attribution for a particular intervention and their contribution to an overarching change.

The characteristics of the required indicators need to be understood beyond just the Specific, Measurable, Achievable, Relevant and Time-bound (SMART) characteristics. The indicators should also have the following characteristics:

- **Efficient:** If the indicators are not efficient under all weather and geographical conditions, they would not cater to all the contexts of resilience measurement.
- **Fair:** Resilience indicators should take equity and fairness into account.
- **Transformational:** The number of beneficiaries is the most common indicator. The extent to which the project can change lives and impact lives should also be considered while creating change indicators.
- **Comprehensive:** Risks beyond the project-level indicators should be identified.
- **Robust:** Extreme weather conditions such as the impact of extreme heat should be considered. The project should be able to deliver development-related benefits.

We as a community of practitioners need to understand that donors have to be more supportive of assessments and various M&E processes. As spoken about before, we also need to involve communities and understand their experiences of the project and try to address their resilience needs, which often go beyond the project boundaries.

ROLE OF DONORS IN FACILITATING A NUANCED M&E ECOSYSTEM

Ms. Shishusri Pradhan, Director of Evidence, Measurement and Evaluation (Climate) at Children's Investment Fund Foundation (CIFF)

At CIFF, we work on a range of climate investments across sectors and regions. Setting up M&E systems in climate programs is complex and intimidating, and requires the program partners to devote additional budget and time to the task. Evidence and data tracking are key components at CIFF, and hence CIFF actively invests in setting up M&E systems across its climate programs.

Within M&E systems, there is scope for understanding the innovative ways in which one can measure changes/effects in the climate space. In developing M&E systems, we are keen to move away from activity- and output-level results and instead focus on the outcomes achieved and track the pathways of change. In our evaluation methodology, we are keen to focus on contribution instead of attribution. Additionally, the design of these systems requires active engagement with stakeholders to address decision-making.

We recognize that partners need support in setting up M&E systems and reporting against results, and we fully support our partners in developing these systems. We fund partners to hire M&E staff, or we hire consultants who work with the partners to develop their M&E systems. We believe in collaborating with partners by setting up systems with them and not imposing systems on them; that is, M&E should be set up in collaboration with partners and should not be imposed on them.

We are keen on adaptive M&E where we have space for course correction so that we can assess a project or program while it is on the ground and make real-time changes. The adaptive role enables both the partners and funders to learn and apply the learnings obtained from all stakeholders.

We focus on a wide range of indicators by tracking them across the types of investments and the thematic and regional foci of the work we do. We are aware that in the climate field it is difficult to get data across a range of indicators, especially against higher-level (outcome and impact) indicators versus activity- and output-level data. Thus, the building of M&E systems to collect data against the outcomes and key performance indicators is a work in progress as the project proceeds. Additionally, one-size-fits-all M&E is not suitable for all interventions and/or projects although the portfolio may be the same, for example, renewable energy and/

or energy access. We try to ensure that we understand the needs of our partners, support them in designing M&E systems that can capture data to be shared with a range of stakeholders, and provide the information necessary for implementing real-time course correction during the term of the program.

SETTING UP M&E FOR ENERGY ACCESS

Mr. Penias Chabwela, Lead Consultant, M&E and PSD, Dial Direct Zambia Limited

The objective of the energy sector is to create conditions that ensure availability of an adequate energy supply. In Zambia, the M&E practice rapidly established itself across ministries in 2019. Earlier, all the departments had been working in silos. Therefore, the Ministry of Energy of Zambia, working with the EU delegation in Zambia, developed an energy sector M&E plan.

After extensive consultations with internal and external stakeholders and a very detailed analysis of the key indicators, a draft of the M&E plan was developed. The structure of the plan covered the objectives, the Results Based Framework, the M&E matrix, data collection and processing, and the plan for M&E. The plans also spelled out the various institutional arrangements, responsibility flow, priorities, resource mobilization, data flow and the reporting plan, reflective learning, and communication.

Additionally, learning and communication was considered and should be an important part of M&E. It took us (in Zambia) two and a half years to reach this stage. Any implementation plan for M&E needs to include operationalization and timelines, which are thought out by the stakeholders. Moreover, these activities should also include capacity building of stakeholders as an integral element.

Finally, an operationalization strategy consists of stakeholder capacity assessment, stakeholder capacity building, a comprehensive indicator manual, development and implementation of a user-friendly management information system, and development and integration of a performance monitoring system, all of which make a complex M&E system a reality.

THE IMPORTANCE OF SETTING UP OF M&E SYSTEMS AT THE BEGINNING OF THE PROGRAM FOR ORGANIZATIONS TO ASSESS THEIR IMPACT

Anna Amato, Planning, Monitoring, Evaluation and Learning Manager, Managing for Results (MfR), World Resources Institute (WRI)

A ToC should be developed during the design phase of a project to ensure that the project stakeholders have a clear understanding of the project results, activities, and assumptions.

Using a ToC process helps us avoid the tendency to start with solutions we are good at offering but that may not be appropriate to the context or for the driver of the issue. A ToC is both a process and a product. Creating and applying a ToC can help us systematically approach the problem of how to address targeted issues through causal linkages that reflect how and why the strategy will lead to outputs, outcomes, and impacts.

It is important to outline key evaluation decisions at the start of any project. These include setting down tentative evaluation objectives, questions, audiences, the approach, timing, scope, and budget. These decisions should be specific enough to provide direction but remain flexible enough to adapt to changing needs as the project progresses. The decisions will be reviewed and altered as needed.

There are various kinds of evaluations, and the ones presented here do not constitute an exhaustive list, but this can be one of the ways to characterize project and program evaluation.

1. Process evaluation measures the effectiveness of the program's procedures. The data it generates are useful for identifying inefficiencies and streamlining processes. It can help determine:

- a. whether the program's goals and strategies are working as they should, and
- b. whether the program is reaching its targeted beneficiaries and what they think about it.

This form of evaluation allows program administrators to determine how well the program is working. It is done by reviewing internal reports, surveying program managers, and interviewing a sample of the target population. .

2. Outcome evaluation (also known as objective-based evaluation) generates data on the program's outcomes and to what degree those outcomes are attributable to the program itself. It is useful in measuring how effective the program has been and helps make it more effective in delivering the intended benefits.

It helps the program administrators know whether a program is meeting its objectives. Insights from outcome-focused feedback can help increase program effectiveness.

3. Economic evaluation (also known as cost analysis, cost-effectiveness evaluation, cost-benefit analysis, and cost-utility analysis) seeks to measure the benefits of the programs against their costs. This exercise generates useful quantitative data that help measure the efficiency of the program. These data are like an audit, and provide useful information to sponsors and backers, who often want to see how their money would benefit the target population.

This form of evaluation helps determine how resources are being spent and at what point these costs are translating into outcomes. It can help program managers and funders justify costs. It also helps determine how the program can be modified to deliver more results at lower costs.

4. Impact evaluation studies the program from the beginning to the end. It seeks to quantify the successes of the program. Impact evaluation focuses on the long-term impact and is useful for measuring the sustained changes brought about by the program.

This form of evaluation shows proof of impact by comparing the beneficiaries with control groups, and both the groups are monitored rigorously throughout. It is often implemented as a randomized control trial and econometric analysis

5. Summative evaluation is conducted after the program's completion or at the end of a program cycle. It generates data about how well the project delivered benefits to the target population. It is useful for program administrators to show what they have achieved, and helps them lobby for project continuation or expansion. **Goals-based evaluation** is similar and is usually done toward the end of the program or at previously agreed-upon intervals. It focuses on indicators and goals, assessing how the program has performed on the initial metrics and evaluating whether it has met its initial benchmarks or achieved its intended goals.

NEXT STEPS

The webinar's key objective was to discuss the various components of M&E processes in the energy access space and their importance. Understanding the importance of these processes helps understand technical interventions better and incorporate elements of equity more holistically. M&E methods and processes are still being standardized for multi-sectoral/multi-thematic work. WRI India's work will continue to engage with such practitioners to understand these complex spaces of measuring evidence and work toward the following:

- Engaging with a diverse set of practitioners to understand best practices within the field of evidence measurement.
- Understanding the importance of including equity in projects, especially projects involving work with vulnerable populations.
- Understanding the importance of including various communities and community organizations in co-creating community-owned energy access interventions.
- Innovating various methods for understanding the impact of energy access for communities.
- Developing capacity at the national and subnational levels with the relevant stakeholders to engage in knowledge dissemination of the ways in which M&E processes should be approached.

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ACKNOWLEDGMENTS

The authors would like to thank all those who helped shape this conference proceedings document. We are especially thankful to all the participants who gave their time and valuable inputs during the webinar. We are grateful to Namrata Ginoya, Harsha Meenawat and Bharath Jairaj for their feedback on the proceeding document. The authors appreciate the support provided by copyeditor Santhosh Matthew Paul. This webinar was made possible thanks to the extensive support of the IKEA Foundation.

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ABOUT WRI INDIA

WRI India is a research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.

Our challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our approach

COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring

SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.



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