Private Finance Advisory Network – Asia Successfully Measures Impacts of Clean Energy Projects Using the CLEER Tool

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The RALI Series is a collection of papers developed by the RALI project to share examples of low emission development in practice. The series features case studies, tools, and innovative new approaches in this space, highlighting user benefits and lessons learned. To learn more about the RALI project, visit https://www.climatelinks.org/projects/rali.

Developing measurable metrics for success is vital for evaluating the efficacy of international development efforts. For international development in the clean energy space, two key metrics for measurement are the energy and greenhouse gas (GHG) benefits associated with clean energy interventions, as these metrics can help to evaluate the financial and environmental impacts of an intervention. In this paper, the RALI team describes how the CLEER Tool was successfully used by the U.S. Agency for International Development (USAID) Private Financing Advisory Network-Asia (PFAN-Asia) to accomplish this objective, and how others can similarly benefit from the tool.

> With the CLEER Tool, PFAN-Asia was able to calculate emission reductions of more than 300,000 tCO_2e in 2016 as a result of the generation of over 400,000 MWh of clean energy from nine projects. Through 2030, cumulative emission reductions from clean energy interventions may exceed 15 million tCO_2e.

THE CASE OF PFAN-ASIA

PFAN-Asia is a regional program that assists businesses, governments, and others in Asia's developing countries to mobilize and scale up investments in clean energy. The program is working to mobilize at least $700 million in funds directly or indirectly for clean energy investments covering renewable energy, energy efficiency and clean transport with an aim to reduce GHG emissions. To date, USAID PFAN-Asia has assisted 42 companies to mobilize clean energy financing worth a total of $530 million. The program is also helping to create self-sustaining, regional operating platforms.

Assembling solar photovoltaic systems to provide energy access to homes in Cambodia
Credit: NRG Solutions Inc.

As a USAID program working in clean energy development, PFAN-Asia is required to report on annual GHG emission reductions, as well as projected GHG emission reductions through the year 2030. Tracking, estimating, and reporting on this information allows both PFAN-Asia and USAID to assess the effectiveness of the clean energy actions conducted, and creates an opportunity for planning and prioritization based on the estimated GHG and energy outcomes.

The Need for a Tool

It is necessary for implementers to estimate GHG and energy impacts in order to plan, prioritize, and assess the effectiveness of clean energy interventions. However, it can be difficult for the teams implementing these efforts to estimate these benefits accurately, using a standardized methodology and format. These difficulties can arise for a variety of reasons, including a lack of experience and a lack of default data, among others. To help implementers with this issue, RALI developed the Clean Energy Emission Reduction (CLEER) Tool to provide a standardized methodology and format for estimating GHG and energy impacts.

The CLEER Tool is a user-friendly calculator based on internationally-accepted methodologies, enabling users to calculate emissions reduced or avoided from clean energy actions. The tool helps users:

- estimate, track, and report GHGs reduced or avoided from clean energy interventions,
- estimate and project the amount of energy generated or saved from clean energy actions,
- evaluate the emissions reduction potential of planned actions and possible alternatives,
- estimate projected GHG emissions reduced or avoided through 2030,
- allows users to identify high impact actions with cost-effective GHG reductions, and
- collaborate with peers on estimations within the tool.

The Tool currently contains calculation methodologies for 16 unique technology types (see Figure 1), and provides standardized methodologies that enable users to calculate and compare energy and emission impacts across varied program portfolios. The Tool gives users the option to estimate impacts using a small number of

Figure 1: Technology types available in the CLEER Tool

Green indicates technology calculators that require energy or fuel data inputs, and blue indicates technology calculators that allow technology-specification data inputs (such as MW installed)

data inputs and country-specific default data, or estimations can be customized if users have more detailed data available. This easy to use design makes the Tool accessible to all users, regardless of a user's experience level with emission reduction calculations.

How PFAN-Asia Used the CLEER Tool

The CLEER Tool provided PFAN-Asia with a simple solution for their GHG emission reduction requirement needs. Additionally, PFAN-Asia's diverse portfolio aligned well with the range of technology types provided by the CLEER Tool.

PFAN-Asia's Chief of Party coordinated the program's use of the CLEER Tool. The Chief of Party was trained in the use of the tool through an annual CLEER Tool training webinar, as well as through direct engagement with the RALI team. The Chief of Party gathered data from PFAN-Asia clean energy implementers, and input these data into the CLEER Tool to calculate GHG emission reductions. As a result of PFAN-Asia's diverse portfolio of clean energy actions, the program made use of 9 of the CLEER Tool technologies: Appliance and Equipment Efficiency, Biomass Energy, Building Energy Efficiency, Fuel Switching, General Energy Efficiency, General Renewable Energy, Hydroelectric, Wind Turbines, and Solar Photovoltaic.

Tool Limitations

Part of PFAN-Asia's portfolio related to clean transportation actions did not match directly with the available technology types in the CLEER Tool. Where possible in this situation, PFAN-Asia worked with RALI to determine how the emission impacts of these clean transportation interventions could be calculated by transforming the project data into inputs that aligned with CLEER Tool capabilities, including the the Fuel Switching technology type. Ultimately, the Tool was able to calculate energy and GHG benefits associated with 29 of PFAN-Asia's 33 CE interventions.
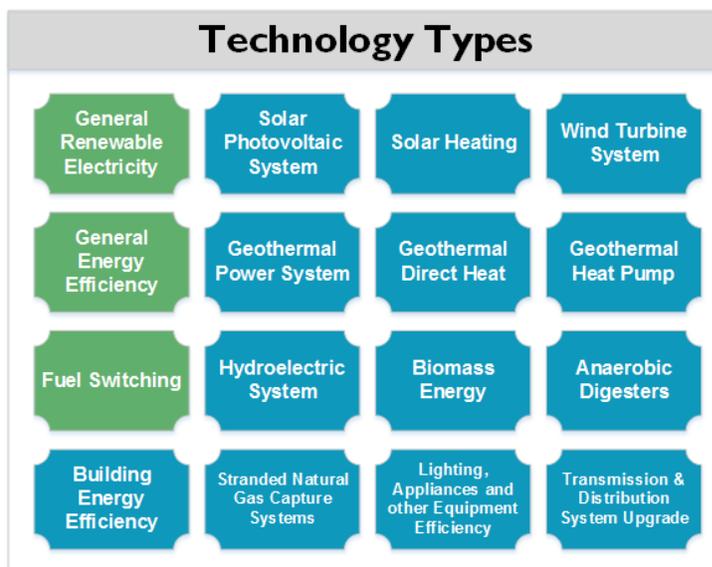
GHG and Energy Outcomes

With the CLEER Tool, PFAN-Asia was able to calculate reductions of more than 300,000 metric tons of carbon dioxide equivalent (tCO_2e) in 2016 as a result of the generation of over 400,000 MWh of clean energy from 9 interventions. Additionally, PFAN-Asia was able to estimate that the cumuluative emission reductions from clean energy inverventions through the year 2030 may exceed 15 million tCO_2e. These totals were reported to USAID. Furthermore, the emission estimates for each individual intervention allows PFAN-Asia to assess the effectiveness of each intervention, assisting with future planning and prioritization. PFAN-Asia noted that the CLEER Tool was "very helpful" in calculating emission and energy impacts for their interventions.
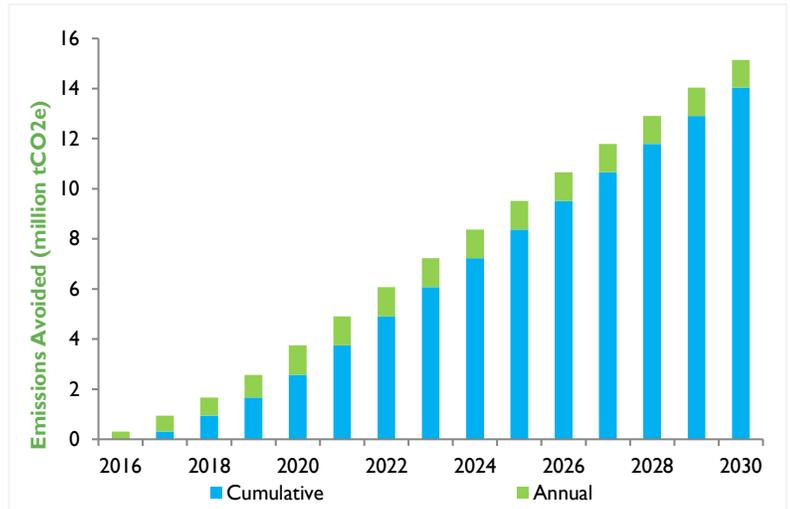

Figure 2: Projected GHG Mitigation through 2030

Future Use

Moving forward, PFAN-Asia will continue to use the CLEER Tool to calculate annual emission and energy impacts from their clean energy interventions. As data are added to the Tool for new reporting years, PFAN-Asia will have measured impacts that can be used internally to plan and prioritize, as well as shared externally to demonstrate benefits of the interventions.

Accessing the Tool

The CLEER Tool is available online for free at the following website: www.cleertool.org

A recorded webinar training on the use of the CLEER Tool is also available at the above link.

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