

Piloting Energy Efficiency and Solar Micro Grid for Cambodia's Clean Energy Future

Implemented by: Ministry of Mines and Energy (MME)

Location: Phnom Penh and Kandal

Background

The Ministry of Mines and Energy (MME) is implementing a project entitled "Piloting Energy Efficiency and Solar Micro Grids for Cambodia's Clean Energy Future" funded by the Cambodia Climate Change Alliance - Phase 3 (CCA-3), a multi-donor initiative funded by the European Union, Sweden and UNDP with a comprehensive and innovative approach to address climate change in Cambodia. The project supports the implementation of Cambodia's climate change response, contributing to a greener, low carbon, climate-resilient, equitable, sustainable and knowledge-based society. It is two-year project with addressing the issue of carbon emissions from increasing energy consumption growth in Cambodia. The first project's key element in addressing the energy demand growth is through the promotion of energy efficiency and conservation in public buildings. The other component focuses on the energy access by piloting a new clean energy model through solar DC or AC microgrid for electrification in remote areas of the country.

Objectives

The **overall objective** is to showcase the feasibility of energy efficiency and building energy management in the government building (Phnom Penh) and pilot sustainable operation model of solar micro-grid in one remote village. The specific objective is to contribute to the implementation of the Cambodia Climate Change Strategic Plan 2014-2023.

Outcome:

- Outcome 1: Building Energy Management (BEM) is piloted.
- Outcome 2: Pilot sustainable operation model for Solar Micro-grids
- Outcome 3: Dissemination of results and policy recommendations

Key technologies and approaches introduced

The **qualitative and quantitative** approaches will be used to achieved the project outcome including the pilot energy efficiency in Government building and another is the pilot solar DC or AC microgrid for the remote village.

Qualitative approach:

- Observation
- Interview
- Surveys
- Monitoring
- Secondary research
- Capacity building (Training, workshop, seminar, and etc.)
- Consultations with MME, EAC and other relevant stakeholders

Quantitative approach:

- Walk-through audit
- Designing Solar DC or AC micro-grid
- Installation of a smart energy monitoring system
- Site assessment

Outputs and key activities

NO.	Description
Outcome 1: Building Energy Management is piloted	
Output 1.1	EE measures in government buildings identified
Output 1.2	Implementation of EE measures facilitated and piloted
Output 1.3	BEM guidelines are developed and piloted
Outcome 2: Pilot sustainable operation model for Solar Micro Grids	
Output 2.1	Operation model for Solar Micro Grid developed
Output 2.2	Pilot Solar Micro Grid with new operation model in place
Outcome 3: Dissemination of results and development of recommendations	
Output 3.1	Dissemination of results
Output 3.2	Develop recommendations

Implementation progress



Local stakeholder engagement and field trip to identify the qualified village at three different provinces



Consultative and notify meeting of pilot sustainable operation models of solar microgrid in one remote villages

Vacancy announcement for recruit consultants

Key challenges and lessons learnt

Key challenges:

The most prominent challenges during the project implementation is the Covid-19 pandemic. Local authority strictly implementation the Covid-19 preventive measure in term of gartering people in any meeting or and workshop. Some activities need to conduct by online. It caused delay the project implementation. To overcome this critical situation, the project staff have produce the enabling activities plan as following:

- ✓ Identified the qualified villages for installation of the Solar Micro Grid
- ✓ Organized virtual Kickoff meeting of Committees for steering Management and Implementation of the project
- ✓ Project staffs recruitment
- ✓ Developed TOR for recruit consultants

Lessons learnt

During this hard time, we learnt various lessons such as:

- ✓ A remote village has identified and understand clearly on their livelihood in project target areas
- ✓ The way to live and adapted and work during Covid-19 pandemic
- ✓ Online working approaches