

NON-TECHNICAL SUMMARY

Programme of Activities ‘Solar systems for small businesses and households’

Introduction

The number of fossil-fuel generators in the developing world has grown over the last decades as the demand for electricity and the availability of seemingly inexpensive generators outpaces the capabilities of the grid. The energy service of such fossil-fuel generators comes at great financial, health and environmental costs. The International Finance Corporation (IFC) found out in a study in 167 developing countries that the fleet of generators in those countries have a total capacity of 350-500 GW (equivalent to 700-1000 large coal-fired power plants). In Western Africa, for example, the electricity provided by back-up generators is equal to 40% of the electricity generated by the grid. The annual spending on diesel and petrol for generators is \$30-50 billion. Generators are contributing significantly to the emissions of fine particulate matter (PM_{2.5}), sulfur dioxide (SO₂), nitrous oxides (NO_x), carbon dioxide (CO₂) and other pollutants that compromise human health and contribute to climate change. They are often used in close proximity to the homes and businesses they serve, increasing the risk that their emissions are directly inhaled by people living and working nearby. In Sub-Saharan Africa e.g., the NO_x from back-up generators accounts for 15% of all NO_x emitted in the region, and PM_{2.5} emissions are equal to 35% of emissions from all motor vehicles.¹

Purpose and technology of the Programme of Activities (PoA)

The purpose of the proposed Gold Standard (GS) CDM² PoA ‘Solar systems for small businesses and households’ is the dissemination of solar photovoltaic based electricity generation systems across different countries in Africa and Asia (see Table 1 with the list of countries being envisaged to be included under the PoA). The proposed PoA through dissemination of solar photovoltaics-based electricity generation systems will utilize the energy from the sun and convert it into electrical energy, replacing fossil fuel-based generators that would have been used otherwise to meet equivalent energy needs.

The German company ‘Access to Energy Institute’ (A2EI) has developed an appropriately dimensioned and affordable solar energy-based system providing clean renewable energy as a replacement to these fossil fuel generators.

Characteristics of the technology

¹ International Finance Corporation, 2019, The Dirty Footprint of the Broken Grid, The Impacts of Fossil Fuel Back-up Generators in Developing Countries, <https://www.ifc.org/wps/wcm/connect/dfab4f4c-9247-46ed-8f35-b25fa527b636/20190919-Summary-The-Dirty-Footprint-of-the-Broken-Grid.pdf?MOD=AJPERES&CVID=mR9UXpH>

² CDM stands for ‘Clean Development Mechanism’

The technology developed by the A2EI is composed of a battery (lead carbon), solar PV panels and an electronic controller that runs the system and comes with the necessary software. The project system generates real time data regarding their electricity generation making ex-post monitoring simplified. The CO₂ emissions are simply mitigated or avoided when a fossil fuel generator is replaced by a zero-emission renewable solar energy-based electricity generation system.

Every Solar System can be monitored separately and remotely. A complete transparency therefore exists, regarding energy demand and consumption of project systems.

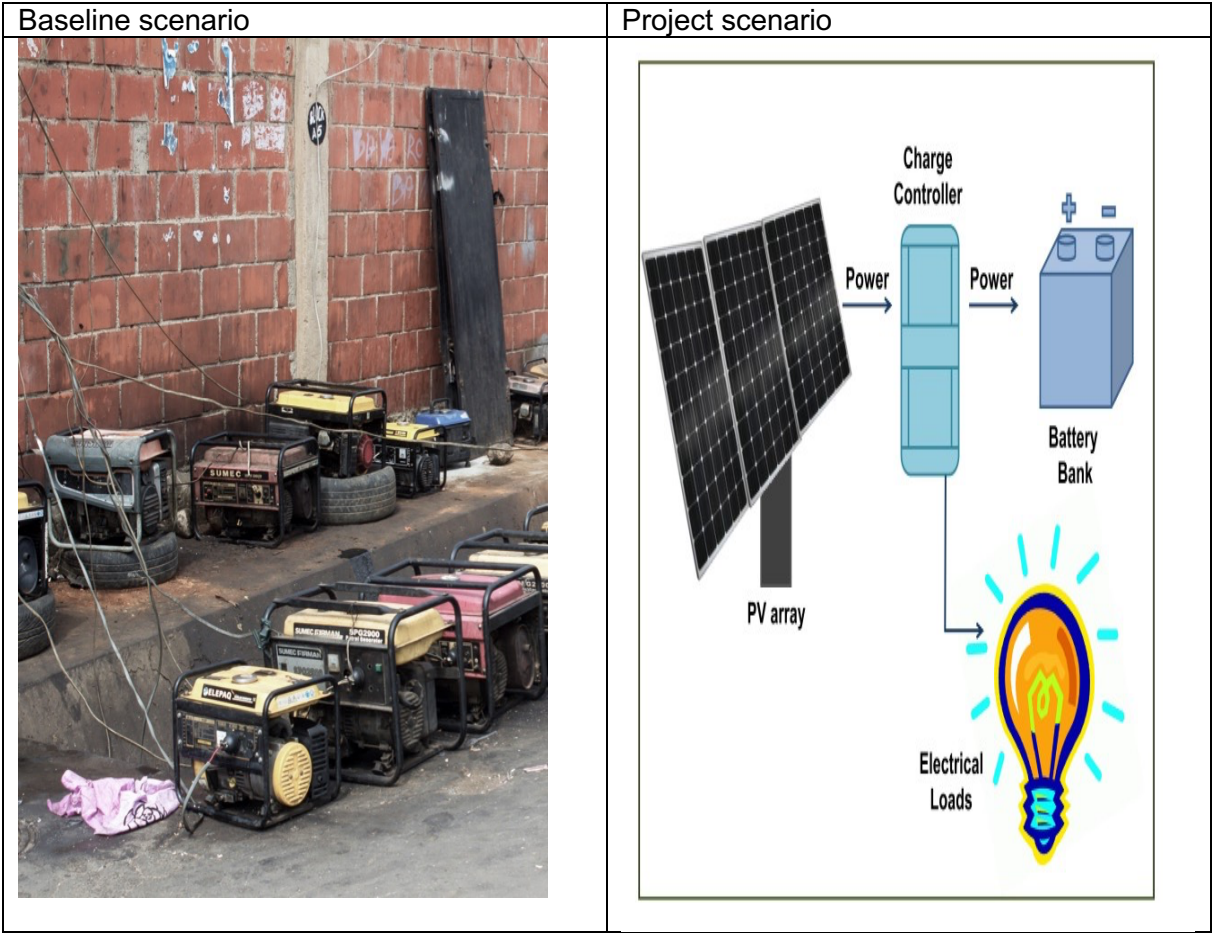


Table 1: List of countries being envisaged to be included under the PoA³

Angola	Benin	Democratic Republic of Congo (DRC)
Ghana	Indonesia	Nigeria
Pakistan	Philippines	Togo

³ The PoA may be extended to other countries later on.



The Coordinating and Managing Entity (CME) of the PoA is A2EI. A2EI is a collaborative and non-for-profit R&D Institute that works towards advancement of the solar revolution in developing countries. A2EI primarily delivers solar powered solutions and appliances specifically for small businesses and smallholder farmers to generate a stable income, generate jobs and create robust local economic networks. The PoA will be certified with the Clean Development Mechanism (CDM) and labelled with the Gold Standard.

Carbon credits

The monetization of the carbon credits is a contribution towards making the solar systems more affordable and lower the price to the customer.

Time-schedule

The PoA is expected to be registered with the CDM and Gold Standard by the end of 2021. The first project activity (so called 'VPA') is expected to be implemented in Nigeria.

Contribution to Sustainable Development

Project activities under the PoA aim to contribute to the following SDGs:

SDG 3 (Good Health and Well Being): Toxic fumes released by fossil fuel generators lead to illness and deaths. The project by eliminating the generators with solar PV will improve the air quality. In addition, the replacement of fossil fuel generators creating heavy noise by solar systems will result in a reduction of noise pollution.

SDG 7 (Affordable and Clean Energy): The project activities offer affordable and reliable electricity access in areas where energy is not available or is scarce/expensive. In addition, replacing fossil fuel generators by solar devices would massively reduce the demand for fuel and reduce the need to import fuel.

SDG 8 (Decent Work and Economic growth): Project activities will give rise to employment opportunities for technicians, assistants, office staff and other related jobs. Thus, project activities will help in generation of skilled and unskilled employment.

SDG 12 (Responsible Consumption and Production): By replacing the fossil fuel generators with the solar PV systems the share of renewable energy will be increased.

SDG 13 (Climate Action): The replacement of fossil fuel generators by renewable solar systems will help in the reduction of GHG emissions and contribute to avoid global warming / climate change.

Joining the PoA

Different organizations/entities may become project implementing partners. A contract between CME and project implementing partner will define all the arrangements between the Parties as well as the terms for joining the PoA. Different fee models are possible and are a matter of negotiation. CME may for example charge an inclusion and/or annual management fee or a certain proportion of the carbon credits or a combination of both.