

Danish support to the Global Facility on Mini-Grids

Development engagement document

Introduction

The present development engagement document details the objectives and management arrangements for the development cooperation concerning the Energy Sector Management Assistance Program (ESMAP) activities on the Global Facility on Mini-grids Support for 2017-2020 as agreed between the parties specified below.

The development engagement document is annexed to the Bilateral Agreement with Implementing Partner and constitutes an integrated part hereof together with the documentation specified below. The Danish support to the Global Facility on Mini-grids is provided under the Danish Climate Change Envelope within the framework of the guiding principles for the Danish Climate Envelope from February 2016. The Danish support complement Danish support to ESMAP.

Parties

The Energy Sector Management Assistance Program (ESMAP) of the World Bank and the Danish Ministry of Foreign Affairs.

Documentation

“The Documentation” refers to the partner documentation for the supported intervention, which is developed under the green Mini-Grids program activities of the ESMAP FY17-20 Business Plan.

Background

About 1.2 billion people currently lack access to electricity. If the pace of new connections made during 2000–10 continues for the next 15 years, and population growth is taken into account, the Independent Evaluation Group of the World Bank estimates that the number of people without access to electricity in low-access countries would rise by an additional 40% by 2030 unless new action is taken.

To turn this trend around and to meet the Sustainable Development Goal 7 and the Sustainable Energy for All (SE4All)¹ goal of universal access to clean and affordable modern energy by 2030, including reaching the targets of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix, low carbon mini-grids are expected to play a critical role. While mini-grids have a long history and were an integral part of the power sector development of many of the current high-income countries, they are only now emerging as a scalable option for meeting the energy demand in Sub-Saharan Africa, South and East Asia, and Small Island Developing States. In these areas, mini-grids are a least-cost and timely option for more than 120,000 villages and towns.

In the past, acceleration of mini-grids in low-income countries as a widespread credible option was constrained by a number of factors: (i) limited proven business models that are viable for replication; (ii) gaps in policies and regulations; and (iii) absence of long-term financing. However, recent technological and

¹ The global initiative Sustainable Energy for All (SE4All) guides the Danish support to energy sector development

institutional innovation, combined with an overall cost reduction have made them an attractive alternative. In rural areas, green mini-grids now have the potential to provide high quality and low carbon energy for productive uses to communities that otherwise might be waiting for years for grid connections. And as decentralized generation, electrical storage systems, smart meters, and efficient appliances continue to come down in price, independent power producers will find innovative ways to bring electricity services to new customers at affordable costs. For example, in Tanzania, small power producers are now able to sell to customers without going through a lengthy licensing process. In India, remote mobile phone towers, which would otherwise be powered by stand-alone diesel generators, are serving as 'anchor customers' for new clean energy mini-grids.

The renewable energy based (RE) mini-grids not only provide electricity access but also many environmental, climate and health co-benefits. Mini-grid installations in Africa alone are expected to benefit around 1.3m people by 2018, while reducing carbon emissions by around 260,000 Tons. It is highly desirable to have mini-grids based on solar, micro-hydro or wind with battery storage to fully reap the environmental and climate benefits. Sometimes the renewable energy based mini-grids are not feasible given the local context and in such cases the most desirable option is renewable based mini-grids with diesel back-up.

However, a lack of knowledge and exposure to proven practices available around the world continues to create regulatory, commercial, and implementation barriers that hold back the expansion of sustainable green mini-grids. In response, the Energy Sector Management Assistance Program (ESMAP) initiated a Global Facility on Mini-Grids to accelerate the pace of low carbon electrification to large groups of people by upscaling low carbon and least cost mini-grids into World Bank Group operations, as well as develop the knowledge associated to achieve this. The program focuses on Sub-Saharan Africa, South and East Asia, and Small Island Developing States.

Development Engagement Objective

The objective(s) of the development cooperation among the parties is to support green mini-grids implementation, up scaling in the World Bank client countries and to create knowledge products on various facets of green mini-grids deployment such as policy and regulation, technical standards, subsidies and tariffs, etc. under the ESMAP Global Facility on Mini-Grids Program. The program aims at achieving this objective by providing operational support, technical assistance, policy development support, capacity building and knowledge products for the implementation and upscaling of green mini-grids as a timely and least cost option in client countries to achieve equitable and clean energy access. The Global Facility on Green Mini-Grids has two main focus areas: 1) Operational Upscaling and Learning by Doing; 2) Global Knowledge Development and Learning.

Pillar 1: Operational Upscaling and Learning by Doing

Under this pillar, the facility supports activities to mainstream low carbon and least-cost mini-grids into World Bank Group operations. These mini-grids will be powered by renewable energy or if not feasible with renewable energy only through hybrid systems combining renewable and fossil fuel. In all cases focus will be on clean, least costs solutions. Starting initially in two to three countries, and expanding as demand and resources grow, this component includes:

a) Pre-investment activities based on operational and client demand

For example, market intelligence (geospatial planning); business plans / (pre-) feasibility studies / investment plans; community mobilization / awareness raising; productive load promotions and gender integration; preparation of bid documents; standard designs of equipment.

b) Technical assistance and operational support to project identification and preparation

An initial pipeline includes potential new operations in Rwanda, Ghana, Liberia, Congo DRC, Mali, Myanmar, Nepal, and India.

c) Support to supervision of projects under implementation

Technical advice to project teams—an initial pipeline includes operations in Tanzania, Kenya, and Mali.

Pillar 2: Global Knowledge Development and Learning

Under pillar 2, the facility supports activities to develop the required knowledge to support the operational upscaling. This pillar will look at the experience of mini-grid projects worldwide and dissemination proven practices through partnerships, including the Clean Energy Mini-Grids High Impact Opportunity of the SE4All initiative. Specific activities include:

a) Knowledge development in (i) policy (e.g., standardized regulations; e-governance; integrated planning); (ii) finance (e.g., commercial financing; guarantees; performance based grants; technical assistance); and (iii) technical assistance (e.g., benchmarking; minimum technical specifications and quality assurance framework).

b) Case studies: Building lessons from project implementation in countries such as Cambodia, Bangladesh, Mali and others.

c) Technical notes: The technical issues such as grid integration, technical standards for the mini-grids workable regulations etc. and other on topics to be defined as needs are identified during the course of program.

The outlined activities are within the framework of the Theory of Change for the Danish Climate Envelope as they contribute to scaling up climate relevant technologies, infrastructure and markets as well as strengthened community level framework. The interventions have the potential to contribute to transformative changes in terms of improving access to electricity in remote areas.

Synergy

Several Danish investment funds aim to upscale clean and environmentally friendly investments in energy projects. The facility will seek to coordinate activities with these investment funds. For example, the facility will reach out to the Danish Climate Investment Fund and IFU to participate in investment matching events organised by the facility.

Performance Framework

Project title		Global Facility on Mini-grids	
Project objective		To support green mini-grids (GMG) as a least cost and timely solution for quality energy access by providing implementation and technical support in the World Bank client countries and to create knowledge products on various facets of mini-grids deployment such as policy and regulation, technical standards, subsidies and tariffs under the ESMAP Global Facility on Mini-grids Program.	
Impact Indicator		Contribute to the improved clean energy access rates for the respective targeted countries in Sub Saharan Africa and East and South Asia region	
Baseline	Year	2014	<ul style="list-style-type: none"> National electrification rate Kenya 2014: 20% National electrification rate Tanzania 2014: 24% National electrification rate Myanmar 2014: 33% National electrification rate Nepal 2014: 70%
Target	Year	2020	<ul style="list-style-type: none"> National electrification rate Kenya: 50% National electrification rate Tanzania: 50% National electrification rate Myanmar: 50% National electrification rate Nepal: 80%
Outcome		Accelerated deployment of green mini-grids in a number of countries in Africa and Asia supporting universal access to modern and clean energy for households and businesses / productive users, supporting economic growth and reducing or abating greenhouse gas emissions.	
Outcome indicator		<ul style="list-style-type: none"> Number of households and businesses with increased and improved access Number of mini-grids with renewable energy component (climate change benefits) 	
Target	Year	2020	<p>Contributed to new access to energy for 250,000 households and businesses.</p> <p>Contributed to deployment of 500 renewable energy based mini-grids in energy access deficit countries</p> <p>Contributed to reducing or abating 200,000 tonnes of carbon dioxide</p>
Output A		Market research and gathering of market intelligence to advance mini-grid deployment	
Output indicator		<ul style="list-style-type: none"> Number of countries with surveys of mini-grid operators Number of countries with geo-spatial mapping to explore existing mini-grids and potential scale-up Global knowledge products 	
Target	Year	2017	Survey of mini-grids in 1 country
Target	Year	2018	Survey of mini-grids in 2 countries Geo-spatial mapping in 2 countries
Target	Year	2019	Completion of surveys and mapping in 3 target countries
Target	Year	2020	Two analysis-and-synthesis reports based on surveys and mapping

Output B		Mainstreaming renewable energy based mini-grids in the World Bank countries	
Output indicator		<ul style="list-style-type: none"> • Number of countries with mini-grid investment component • Development financing leveraged (US\$) 	
Target	Year	2017	-
Target	Year	2018	One country with a mini-grid component US\$20 million in development financing leveraged
Target	Year	2019	Two countries with mini-grid components US\$50 million in development financing leveraged
Target	Year	2020	Three countries with mini-grid components US\$100 million in development financing leveraged

Output C		Country specific issues addressed through knowledge exchanges and knowledge products prepared addressing country specific mini-grid barriers	
Output indicator		<ul style="list-style-type: none"> • Number of south-south exchanges conducted • Number of knowledge products produced such as Livewire notes and Case studies (3) 	
Target	Year	2017	One south-south exchanges conducted One knowledge products produced
Target	Year	2018	Two south-south exchanges conducted Two knowledge products produced
Target	Year	2019	Three south-south exchanges conducted Four knowledge products produced
Target	Year	2020	Three south-south exchanges conducted Five knowledge products produced

Output D		Develop global knowledge products and organize annual learning events	
Output indicator		<ul style="list-style-type: none"> • Number of annual learning events • Number of global knowledge products produced 	
Target	Year	2017	One annual learning event One global knowledge products (regulations)
Target	Year	2018	One annual learning event
Target	Year	2019	One annual learning event One global knowledge products
Target	Year	2020	One annual learning event

Risk Management

Risk management measures will be carried out in accordance with the overall risk assessment and mitigation of the Mini-Grids Program risk management framework.

Risk 1: Outputs from the research work and knowledge exchange do not lead to adequate actions / follow up from developing country governments and/or WB regional energy teams.

Mitigation - In order to ensure linkages with operations, the task team composition includes staff from IFC and the Africa energy team. The project team will work closely with regional/country team leaders right from the beginning to ensure regular participation and identification of specific project opportunities. As part of the activity, a min-grids specialist will be recruited to link the learning agenda with WB Group teams and clients and provide the necessary technical expertise on mini-grids deployment and financing.

Risk 2 - Multiplicity of program partners and diverging interests result in implementation problems

Mitigation - An Action Learning Group (ALG), with representation of partners, is proposed as the principal institutional mechanism for program coordination and consensus-building.

Inputs/budget

The total budget contribution of the Danish Ministry of Foreign Affairs to the above outlined activities is 14 DKK, app 2.1 million US dollars, for FY17-20. ESMAP will match the contribution at an output level for specific activities.

Output level	DANIDA Funding		DFID Funding	ESMAP	World Bank
	DKK	kUS\$	kUS\$	kUS\$	kUS\$
Market intelligence, mainstreaming, learning by doing		300	500	650	-
Mainstreaming in WBG operations		1,350	1510	260	440
Country/operational knowledge		150	900	900	-
Global knowledge development and learning		250	3225	2150	200
Staff and overhead		75	850	525	
Total		2,125	6,985	4,485	640

Management arrangement

The parties have agreed to the following management arrangement with the aim to ensure adequate dialogue and timely decisions in regard to this development engagement:

The Energy Sector Management Assistance Program (ESMAP) of the World Bank will be responsible for the management of the Global Facility on Mini-grids Support programme. The Ministry of Foreign Affairs will be overall responsible for the Danish contribution. As part of Denmark's core contribution to ESMAP, Denmark participates in ESMAP's Consultative Group (CG), which has overall oversight of ESMAP's programs and

budget and is the formal channel for reporting, monitoring and evaluation of ESMAP's activities. A Technical Advisory Group (TAG) of international experts appointed by the CG provides informed, independent opinions to the CG about the purpose, strategic direction, and priorities of ESMAP. The TAG also provides advice and suggestions to the CG on current and emerging global energy sector issues likely to impact ESMAP's client countries.

Financial Management

Both parties will strive for alignment of the Danish support to the World Bank's rules and procedures. Accounting, auditing and reporting will be undertaken by the World Bank in accordance with Administration Agreement between The Energy Sector Management Assistance Program (ESMAP) of the World Bank and the Danish Ministry of Foreign Affairs.

Monitoring and Evaluation

The ESMAP will follow a Results Based Monitoring system with a virtual platform to enable monitoring and evaluation of data for activities supported by ESMAP. The portal enables the identification and description of the linkages between ESMAP inputs (functions/budget allocation) to ESMAP themes, the projects delivered under these themes and the outputs and outcomes of those projects, as well as the linkages between the ESMAP activities and the high-level development goals. It also aims at identifying the risks and mitigation measures for each activity as well as the systematic tracking of outputs, financial costs and the expected outcomes under each activity.

The Danish Ministry of Foreign Affairs will base the actual support on progress attained in the implementation of the engagement as described in the documentation. Progress will be measured through the ESMAP's monitoring framework, and in addition through a yearly report on the specific Performance Framework outlined above, summarising progress against the indicators and targets defined therein. Further, ESMAP will include a table that shows annual disbursements against the output based budget as outlined above. The climate change indicators have been included where appropriate according to the Guideline for monitoring of the DK Climate Change Envelope providing the funding.

The progress report should be delivered by the end of the calendar year, if no other agreement is in place. At the completion of the intervention, the indicators should likewise be reported upon.

The Danish Ministry of Foreign Affairs shall have the right to carry out any technical or financial mission that is considered necessary to monitor the implementation of the programme.

After the termination of the programme support the Danish Ministry of Foreign Affairs reserves the right to carry out evaluation in accordance with this article.

Prerequisites

The proposed support does not have specific prerequisites as it complements established cooperation structures and mechanisms.

Signatures

Partner/ Danish Ministry of Foreign Affairs