



# ENHANCING RENEWABLE ENERGY DEVELOPMENT

**SREP**

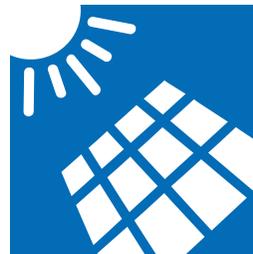
SCALING UP RENEWABLE  
ENERGY IN LOW INCOME  
COUNTRIES PROGRAM

**THE \$750 MILLION SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES PROGRAM (SREP), a funding window of the CIF, is empowering transformation in developing countries by demonstrating the economic, social and environmental viability of renewable energy.**

Channeled through five multilateral development banks (MDBs), SREP financing supports scaled-up deployment of renewable energy solutions to increase energy access and economic opportunities. As of June 30, 2017, \$410 million in SREP funding has been committed to 33 projects. Among them, 25 projects, with \$289 million of SREP resources, are at various stages of implementation, and they expect to mobilize \$1.9 billion in co-financing from other sources.

The SREP employs a programmatic approach that builds of national policies and existing energy initiatives. It is attracting attention from investors, as well as other developing countries by:

- + Covering early-stage risks
- + Enabling investor-friendly environments
- + Expanding markets
- + Encouraging innovation
- + Innovating private sector finance



**\$750  
MILLION**

INCLUDING  
**\$86 MILLION**  
DEDICATED PRIVATE SECTOR  
FUNDING

ENDORSED SREP INVESTMENTS  
EXPECTED TO BENEFIT:

**17.3 MILLION  
PEOPLE**

AND DELIVERING

**6.700 GWh OF ELECTRICITY  
PER YEAR**

– EQUIVALENT TO THE ANNUAL PRODUCTION OF ARMENIA

**27**  
SREP PILOT COUNTRIES

**19**  
INVESTMENT PLANS ENDORSED  
TO DATE



Source: GWU Masters' Students

## CLEAN COOKSTOVES IN HONDURAS

Indoor pollution, like the soot and smoke generated by traditional cookstoves, poses numerous health risks and contribute to as many as 4 million deaths each year, according to WHO. In Honduras over 50% of households still use firewood to meet their energy needs such as cooking. A transition to clean cookstoves can lower considerably lower the amount of soot and ash that households handle on a daily basis.

Since 2014, the Inter-American Development Bank (IDB) has worked with Fundación Vida to provide funding for the installation of clean cookstoves in Honduras through the PROFOGONES project.

The PROFOGONES project uses funding from the SREP to provide 50,000 subsidized clean cookstoves to Honduran households, at a rate of US\$37 subsidy per cookstove, which in most cases is combined with additional subsidies of up to \$62 from other organizations. Overall, that means a significant discount on the market price of about \$110-\$120, with beneficiaries required to contribute the balance of about \$10-\$20, often through labor and local materials, such as sand, bricks and adobe bricks.

## RWANDA RENEWABLE ENERGY FUND

The Government of Rwanda (GoR) has an ambitious target to increase access to electricity to 70 percent by 2018, including 22 percent through off-grid solutions. High cost of reaching rural households through grid, together with low residential electricity consumption levels, have affected financial sustainability of grid-extension investments. In view of this, GoR is promoting off-grid access to electricity, where extending the grid is not financially viable, especially for light electricity users. Reaching off-grid energy access target by 2018 will require unleashing significant private sector investments in off-grid and mini-grid solutions

This project, the largest of SREP portfolio, will be designed to facilitate private sector participation in off-grid electrification through a financial intermediary facility. The facility will address financial barriers to private sector entry, as well as help improve the investment environment for private sector participation in off-grid electricity services. The facility will be a pilot that would eventually be scaled-up to a Rural Electrification Fund. GoR plans to establish the Rural Electrification Fund as the main channel to direct funds and technical assistance to the off-grid market.

## PREPARING OUTER ISLANDS FOR SUSTAINABLE ENERGY DEVELOPMENT PROGRAM

Maldives is a geographically dispersed country with more than 1,000 islands and a population of about 350,000 people. About half the country's population lives in the outer islands. While the Maldives has the unique distinction of being the first and the only country in South Asia with 100% access to electricity, this achievement has come at a cost. The electricity generation is among the most expensive in South Asia, requiring heavy government subsidies and the 100% dependency on imported diesel to produce such electricity has created an unsustainable situation. In addition, the supply is not very reliable, as diesel has to be transported and distributed to each outer island.

These challenges can be addressed by tapping the abundant solar resources available in the country. SREP is supporting Maldives to achieve a more sustainable energy sector through replacing inefficient diesel-based power generation with solar-diesel hybrid mini-grid systems which will substantially reduce the use of diesel in targeted 160 medium and small islands. This will reduce fuel imports and cost of electricity significantly. In parallel, SREP is also helping the government in developing key regulations and capacity building for utilities and regulators to support energy sector objective of creating an effective regulatory environment for the delivery of affordable, reliable and clean energy.

The SREP project in Maldives is directly benefiting the island communities (5,000 households under Phase 1) by improving electricity supply at homes and for other productive energy use, and creating opportunities for women participation such as in public consultations, micro-enterprise development, and capacity development.

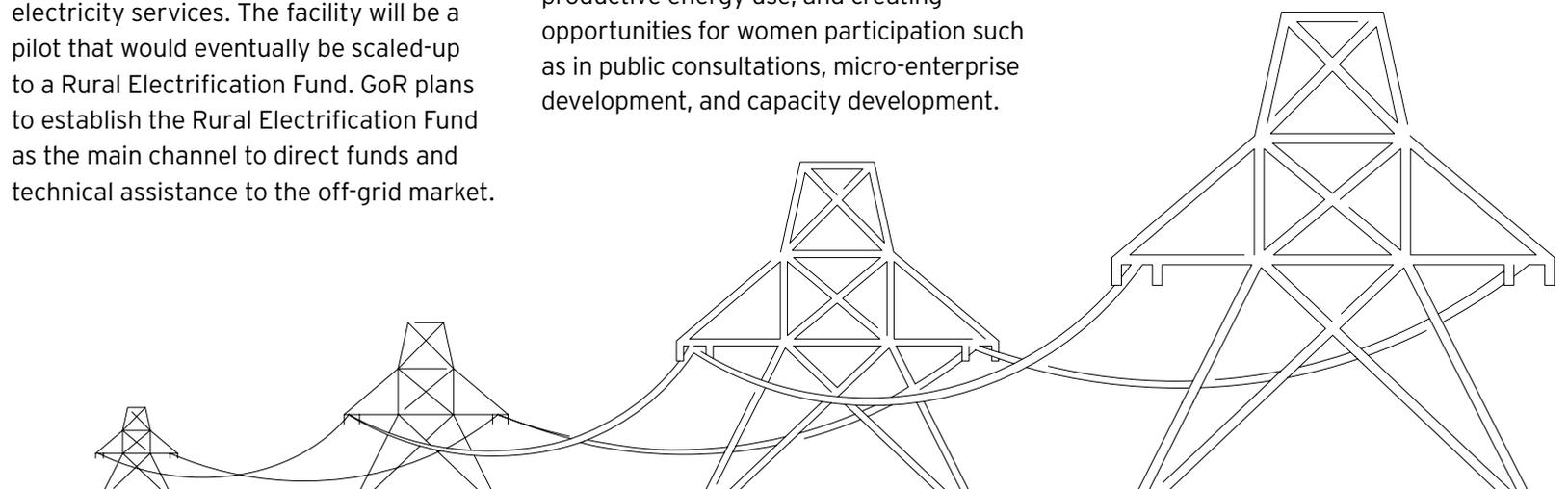
## MENENGAI GEOTHERMAL PROJECT

Kenya has huge geothermal potential, estimated at 7,000 MW of generation capacity. Currently, the country's installed generation capacity is dominated by hydropower. However, as in Tanzania, Uganda, Rwanda and Uganda, climate change symptoms, such as severe droughts, have made hydropower generation unreliable in Kenya. SREP aims to spur transformation that will lead Kenya towards low-GHG-emissions development by harnessing the country's abundant renewable resources.

The Menengai project is the first to be developed by the Geothermal Development Company after Olkaria. This helps meet the country's ambitious targets for increasing its capacity by 2031. That is why SREP's "first-mover" investment for this project is critical - it will accelerate the implementation of the GoK's power generation expansion plan and will facilitate private sector participation.

SREP financing of US\$25 million will support the exploration drilling phase, the riskiest and most critical stage as it aims to prove steam resource availability. Moreover, SREP financing is crucial for mobilizing MDB co-financing of the project.

Geothermal energy will secure part of the needed base load and displace thermal and other expensive sources of energy that are normally called upon to provide base load power in Kenya (after hydropower, which is limited and unreliable). This will lower tariffs and make power more affordable for consumers.



**SREP PORTFOLIO**

**\$811M**

INDICATIVE PIPELINE ALLOCATION

66 projects

\$5 billion expected co-financing

**SREP ALLOCATION & APPROVALS**

**\$811M**

PIPELINE ALLOCATION

**\$410M**

APPROVED BY SUB-COMMITTEE (SC)

**\$289M**

APPROVED BY MULTILATERAL DEVELOPMENT BANKS (MDBS)

**EXPECTED RESULTS (TARGET) FROM ENDORSED SREP INVESTMENT PLANS**

IMPROVED ENERGY ACCESS  
**17.3 million people**

ELECTRICITY TO BE GENERATED ANNUALLY  
**6.700 GWh**

EQUIVALENT TO THE ANNUAL PRODUCTION OF ARMENIA

**EXPECTED RESULTS (TARGET) FROM APPROVED PROJECTS (FROM 24 MDB APPROVED PROJECTS REPORTING)**

IMPROVED ENERGY ACCESS  
**5.7 million people**

ELECTRICITY TO BE GENERATED ANNUALLY  
**3.130 GWh**

**SREP IS SUPPORTING A VARIETY OF ENERGY SOLUTIONS**

Mixed renewable energy

Geothermal

Solar

Hydropower

Waste to energy

Cookstoves

Wind

Approved and under implementation

"Mini grids can offer a promising solution to provide electricity to many rural communities and we are committed to working with these communities to explore their viability."

- Diaretou Gaye  
World Bank Country Director for Kenya

**MINI GRIDS**



**What?** Localized electricity networks – typically harnessing energy from available solar, wind, hydro and biomass – could hasten connectivity for millions of people.



**Where?** Mini grids hold great promise for electrifying remote areas, particularly in regions such as sub-saharan africa and asia.



**Why now?** Innovations and declining costs have made mini grids a viable option for energy access in areas that would otherwise be waiting years for grid connection.



**Financing?** SREP, along with multilateral development banks, is financing initial efforts to scale up mini grids in 14 countries. To date, more than \$200 million has been allocated for these mini grid programs.

**SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES PROGRAM**

More than one billion people live without electricity. In Kenya, the Menengai Geothermal Project aims to meet Kenya's rapidly increasing demand for power. The feasibility studies and drilling of a total of thirty-six wells concluded that the site's actual potential for sustainable production is about 150 MW gross for 25 years. 54 people have been trained on drilling technologies, geoscience, donor procurement, and finance.

**SREP ALLOCATION PER REGION**

**14%**

Latin America & Caribbean

**56.2%**

Africa

**3.4%**

Europe & Central Asia

**26.3%**

Asia

**.1%**

Global Programs

MDB PARTNERS





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**Empowering a Greener Future**



Source: Peter Ndung'u/World Bank