

CLIMATE INVESTMENT FUNDS

SREP/SC.10/Inf.2
October 9, 2013

Meeting of the SREP Sub-Committee
Washington, D.C.
October 31, 2013

**UPDATES FROM SREP PILOT AND RESERVE COUNTRIES
(MAY 2013)**



SREP Pilot and Reserve Country Updates October 2012 – May 2013

| | |
|--|----|
| SREP PILOT COUNTRIES | 2 |
| ETHIOPIA | 3 |
| HONDURAS | 6 |
| KENYA | 9 |
| LIBERIA..... | 13 |
| MALDIVES..... | 17 |
| MALI | 21 |
| NEPAL..... | 24 |
| TANZANIA..... | 26 |
| COUNTRIES ON THE SREP RESERVE LIST | 29 |
| ARMENIA | 30 |
| MONGOLIA..... | 35 |
| SOLOMON ISLANDS (PACIFIC REGION)..... | 39 |
| VANUATU (PACIFIC REGION)..... | 42 |
| YEMEN | 47 |

SREP PILOT COUNTRIES

ETHIOPIA

| <i>Please provide brief descriptions under each of the areas below for a fast-moving project and slow-moving project, in terms of preparation and implementation</i> | |
|--|--|
| <i>Fast-moving project: Geothermal Development and Long Term Strategy</i> | |
| Recent developments | <ul style="list-style-type: none"> • To drill additional 20 wells in addition to the currently drilled four wells and two older wells that can be used for reinjection. Increase the Generation Capacity to 70 MW in Aluto Langanu • The project is financed by WB/IDA (150 M), JICA, 55 Million, Gov't of Iceland and Ethiopia in kind. • Procurement of drilling consumables 100 % completed Procurement of Gas Oil and Lubricants 65% completed from the initial 12.5 M IDA finance. • Procurement of Consultancy Services, Cementing Unit, Scientific equipment's, administration tools, and laboratory equipments 80% completed from JICA finance. • SREP allocation 24.5 M will be used to purchase 50% of drilling consumables. • ESIA/RAP study under final stage. • Project concept note reviewed. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Finalize and publicly disclose the ESIA, RAP August 15/2013 • Test drilling will start in July, 2013 • Appraisal of the project Sept. 15 2013 • Negotiation of the grant and credit October 15 2013-05-27 • Presentation of the Board of executive Directors Dec. 15/2013 |
| Factors contributing to project progress | Commitment from the Ethiopian Government and MDB's and CIF. |
| Barriers to project progress / reasons for delay | Badly damaging of cementing unit due to road accident during transporting by the contractor. The project office has tried to find a rental cementing unit from different companies inside the country and outside. Based on our request, a Kenyan Geothermal Development Company, GDC has replied to rent their unit and they submitted their price offer. |
| <i>Slow-moving project: 100 MW Assela wind Development through technical transfer</i> | |
| Recent developments | 41 consulting firms submitted their EOI and 6 consulting firms were selected. Because of the need of project expansion the selection process was delayed. Now process has finalized and submitted to AFDB for approval |
| Goals for the next 12 months | Start and finalize the feasibility study. |

| | |
|---|---|
| Barriers to project progress/ reasons for delay | <p>Delay in assigning the project coordinator, and in starting consultant firm selection process.</p> <p>The Ministry want to expand the scope of Assela wind farm feasibility to cover the whole corridor to allow phased development. And AfDB agreed to finance Assela from ADF XIII resources for expanded study.</p> |
|---|---|

Please provide any additional information you wish to share on impacts or lessons learned from the preparation or implementation of your SREP Investment Plan.

- Close cooperation and collaboration with MDB's and private sector.
- Strong commitment from the Government in implementing RE projects guided by long term strategy

Monitoring energy access:

| | |
|--|---|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | <p>Indicators: Access coverage and number of house hold connection, and institutions through Universal Electric Access Program. No. of households with energy efficient cook stoves and Solar home systems and biogas digesters.</p> <p>Monitoring: quarterly performance report and verification of Regional government on Federal annual reports on connection. SCA welfare and Household Survey.</p> |
| Will these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | Not yet. |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

- Give special training and support for TVET graduates to engage in UEAP.
- Train rural women and young population to disseminate efficient cook stoves.
- Train rural young population the private sector to operate and maintain solar home system in the rural areas.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

- Universal Electricity Access Program, more than 1500 towns and villages get access every year;

- Efficient cook stove program, more than 2 million per year, 25,000 Solar home systems dissemination; and
- More than 5000 Biogas digesters construction every year.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

- Efficient cook stove dissemination with plat oil. (bio-fuel).

What project ideas for the SREP Competitive Set Aside have government, private sector stakeholders, or MDBs discussed in your country?

- Additional financing to expand the RE resource.

HONDURAS

| <i>Please provide brief descriptions under each of the areas below for a fast-moving project and slow-moving project, in terms of preparation and implementation</i> | |
|--|---|
| <i>Fast-moving project: Strengthening the Renewable Energy Policy and Regulatory Framework Program (FOMPIER), Part I. – Public Sector.</i> | |
| Recent developments | Grant agreement signed with the Inter-American Development Bank (IDB) on April 4, 2013 for the development of the FOMPIER project. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Fulfillment of previous conditions for first disbursement (to be complete in June 2013) and hiring the Program Manager. • Development of the following Consultancies: <ol style="list-style-type: none"> i. Assessment of the institutional and regulatory framework for RE. ii. Report summarizing the technical and economic viability of introducing RE technologies. iii. Renewable Energy Policy proposal. iv. Analyze electricity generation purchase prices and incentives for RE. |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Participation of the National SREP Committee in defining the scope and needs of the project. • Commitment of IDB to support the GoH for design the project. |
| Barriers to project progress / reasons for delay | <ul style="list-style-type: none"> • Procedures of the Government and the Multilateral Development Banks to have the project approved took more time than expected |
| <i>Fast-moving project: Rural Energy Project (ERUS): Cookstoves Dissemination Program. - Private Sector</i> | |
| Recent developments | Consultations with key stakeholders of the business model proposal for the improved cookstoves dissemination program done. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Preparation of the final Program document and submit it for the approval of FOMIN and the SREP Subcommittee. • Formalization of the financing agreements for the Program. • Administration agreement signed with execution agency. • Compliance of conditions for disbursement • Start of program implementation. |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Participation of key stakeholders (private sector and NGOs) in defining the scope and needs of the improved cookstove Program. • High professional expertise of the consultant team has enabled a fast design of the Program. |

| | |
|---|--|
| | <ul style="list-style-type: none"> • Support and commitment of the MDBs in the development of the Program. |
| Barriers to project progress / reasons for delay | <ul style="list-style-type: none"> • Having the international and local consultants hired took more time than expected. |
| <i>Slow-moving project: Sustainable Rural Electrification with Renewable Energy Technology Program (ERUS Component). – Public Sector.</i> | |
| Recent developments | <ul style="list-style-type: none"> • Kick off workshop on February - 2013 with participation of key stakeholders. • Preparation of a proposal to the WB regarding the program implementation in two phases, in order to accelerate the beginning of its execution. • Development of a market intelligence program in order to identify the demand for PV systems. • Preparation of a proposal to the WB regarding program Implementation arrangements. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Finalize the first phase of the program. • Formalize grant agreement. • Start to implement the Program. |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Hiring consultants in charge of program preparation. • Implementation of workshops with key stakeholders who have been collaborating in the design of the program. |
| Barriers to project progress/ reasons for delay | <ul style="list-style-type: none"> • Lack of consensus regarding the work strategy (roadmap) and clarity of the information required by the MDB's for the program preparation. • Limited flow of information and coordination with similar projects within the MDBs. • High turnover of the MDB's work teams related to this Program. |
| <i>Slow-moving project: Grid-Connected RE Development Support (ADERC) – Public and Private Sector</i> | |
| Recent developments | <ul style="list-style-type: none"> • Hiring of consultant firm that will work on the market study. • Kick off meeting between the Government and IDB regarding the market study. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Prepare Program mission scheduled for June or July 2013. • Elaborate social and environmental study. • Submit the Program's proposal to MDB's and SREP Subcommittee for its approval. • Formalize the loan agreement. • Compliance of conditions, previous to the first disbursement. • Start program implementation. |

| | |
|---|--|
| Factors contributing to project progress | <ul style="list-style-type: none"> • Good coordination with IDB in hiring the consultant firm that will conduct the market study. |
| Barriers to project progress/ reasons for delay | <ul style="list-style-type: none"> • Lack of consensus regarding the work strategy (roadmap) and clarity of the information required by the MDB´s for the program preparation. • Limited flow of information and coordination with similar projects within the MDBs. • High turnover of the MDB´s work teams related to this Program. |

KENYA

| Please provide brief descriptions under each of the areas below for a fast-moving project and slow-moving project, in terms of preparation and implementation | |
|---|---|
| Fast-moving project: <i>Development of 400 MW of Geothermal Energy at Menengai</i> | |
| Recent developments | <ul style="list-style-type: none"> • Funding became effective in July, 2012 • Funds have been released by AFD, AfDB & WB • 8 additional wells (23MW steam equivalent) drilled bringing cumulative total to 16 wells with a steam equivalent of 50MW • The additional 3 Rigs funded by AfDB awaiting delivery • Feasibility Study on going, to be completed in August 2013 • Procurement of consultancy services of a Transaction Advisor and Project Management & Supervision ongoing • Capacity building ongoing- Total No. of officers trained 512 <ul style="list-style-type: none"> – 30 World Bank (11 Female 19 Male) – 82 AfDB/SREP (39 Female 43 Male) – 400 USAID (150 Female 250 Male) • Additional training in the pipeline: <ul style="list-style-type: none"> – AFD Health Safety & Environment: 40 – NDF : 20 – JICA : 20 |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Funding for 2 more rigs expected through US EXIM Bank • Drill 24 additional wells at Menengai • Complete Menengai feasibility study by August 2013 • Initiate and complete appraisal for the additional 15 M USD for steam gathering funding disbursed through World Bank • Install and commission a 6.2MW Modular/Well-Head Power Plant to supply power to rigs currently powered by Diesel Generators |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Support and facilitation from MDBs • Feed-in-Tariffs policy in place was used in negotiating PPA with the IPP • The USD 40M from SREP funds which was used as follows: <ul style="list-style-type: none"> – Capacity building USD 3.5M; – Drilling materials USD 13.5M; – Consultancies USD 8M; – Steam gathering system USD 15M • GoK funding since 2009, totaling USD 375M • Availability of local technical capacity for Geothermal resource assessment |
| Barriers to project progress / reasons for delay | <ul style="list-style-type: none"> • There are no delays experienced in the project. Progress is within the project plan |

Projects on Course: Mini-Grids and Solar Water Heaters

| | |
|--|--|
| Recent developments | <ul style="list-style-type: none"> • Project Documents for both SWH and Mini-Grids completed in March, 2013 • Some donors (GIZ and AFD) have expressed interest in retro-fitting of mini-grids • Since the Oct/Nov 2012 pilot countries meeting, 3 mini-grids have been retro-fitted bringing the total to 7 • The installed capacity of the 7 retro-fitted mini-grids is 6,828kW which includes 550kW wind 510kW solar PV • The no. of proposed mini-grids has increased from 27 to 59 (Project Document) • There is potential to go beyond the 30% RE target in each mini-grid • Licensing SWH installers has been initiated by ERC • Discussions have started between ERC and private sector representative (KEREAA) on capacity building for SWH • Several institutions have expressed interest in supporting / undertaking capacity building (UNIDO, JKUAT, University of Nairobi, UN Habitat) |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Develop capacity of REA staff to supervise installation of the proposed 59 mini grids • ERC plans to undertake a study to determine the effect of including SWH systems on overall building cost • ERC to negotiate partnerships with development partners for developing national capacity in SWH |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Ongoing programme for retro-fitting existing diesel mini-grids to hybrid systems • Commitment by the Government to provide universal electricity access • The Energy (SWH) Regulations (2012) are stimulating uptake of SWH systems • The private sector has a positive response to the regulations as a business opportunity |
| Barriers to project progress | <p>The Mini grids and SWH projects are on course</p> <ul style="list-style-type: none"> • Evaluation of on-going pilot projects was necessary to provide information for completion of the mini-grids project document • Need for additional data to facilitate development of a business plan for SWH project • Potential Barrier- Inadequate training facilities and trainers for SWH installations |

Please provide any additional information you wish to share on impacts or lessons learned from the preparation or implementation of your SREP Investment Plan.

- There is close collaboration with Multilateral Development Banks (MDBs) and Civil Society
- The national working group is dedicated to the process
- The readiness of the implementing agencies to undertake the projects has contributed to timely implementation
- Timely endorsement of the IP and the Menengai Geothermal Project Document by the SREP Sub-Committee

Monitoring energy access:

| | |
|---|---|
| <p>What indicators and monitoring systems are being used at the national or sector level to monitor energy access?</p> | <p>Indicators: Number of Rural Electrification Programme Customers; National Electricity Connectivity; Project documents; Number of Rural Electrification schemes implemented; No. of Government institutions supplied.</p> <p>Monitoring Systems: Kenya Integrated Household Budget survey (Updated every five years), Economic Survey (updated annually), Sector surveys as the need arises, Kenya Power Annual reports, REA and ERC Annual reports</p> |
| <p>Will these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how?</p> | <p>Yes. These reports provide information on the levels of electrification in the country, number of customers (domestic, industrial and commercial) connected in each region, increase in the number of customers connected through rural electrification; Number of off-grid stations and connected customers; Number of biogas digester installed.</p> |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

- The use of subsidies in stimulating uptake as applied to the domestic biogas programme (KENDBIP) is good. Withdrawal of subsidies, however, needs to be supported by a properly designed exit strategy.
- Use of existing institutions to implement projects is good, for example Kenya National Federation of Agricultural Producers (KENFAP) has been instrumental in driving the KENDBIP.
- Development of Small Hydro Power has mobilised financing from communities for implementing some projects and this promotes the sense of ownership.
- Partners should meet their obligations as per contract to avoid set-backs in project implementation.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

- Zero-rating of renewable energy (RE) equipment has improved access to solar PV, briquetting

equipment, bioethanol for cooking

- Introduction of renewable energy in existing diesel mini-grids
- The Feed-in-Tariffs policy for RE, solar PV regulations, energy management regulations and Solar water heating regulations are positively contributing to uptake of RE.
- Mapping and assessment of RE resources has contributed to increased investment by private sector
- The Kenya National Domestic Biogas Programme (KENDBIP) which is supported by the Netherlands Government has been very successful (over 6000 domestic plants constructed out of the targeted 8000 by 2014)

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

Biofuels development has not been very successful. Very little research along the value chains of different biodiesel feed-stocks has been done.

What project ideas for the SREP Competitive Set Aside have government, private sector stakeholders, or MDBs discussed in your country?

- Implementation of additional hybrid mini-grids with a higher percentage of RE contribution
- Financing of Solar Water Heaters

LIBERIA

| <i>Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|--|--|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | <ul style="list-style-type: none"> • A joint SREP Technical Mission (MDB Team) visited Liberia on February 4 – 15, 2013 to meet with government representatives and stakeholders in continuation of preparatory activities for development of the Investment Plan. • Consultations and discussions were held with government ministries and agencies, Civil Society, NGOs, private sector, plantations, development partners, and local banks. • There were also field visits to some pilot project sites in rural areas. • A revised timeline for the preparation of the investment plan was agreed. |
| Institutional arrangements and government coordination | <ul style="list-style-type: none"> • The sector ministry (Ministry of Lands, Mines & Energy) has officially designated the Rural and Renewable Energy Agency (RREA) as focal point of the SREP ; • RREA will coordinate SREP activities including the preparation of the investment plan with the Ministry; • The RREA is being supported by a multi-sectoral working group (government, civil society, NGOs, private sector, donors, etc.) to ensure alignment of the investment plan with the government's development objectives. |
| Analytical work and technical studies | <p>The following analytical work and technical studies done in the past have been very useful to the preparation of the Investment Plan:</p> <ul style="list-style-type: none"> • Rapid Assessment of Renewable Energy Options for Liberia: Solar, Wind, and Biomass Energy Resources Report, Winrock, USAID • Liberia and Energy Access: Willingness To Pay Analysis, World Bank • Southeastern energy needs assessment for Grand Gedeh and River Gee Counties, RREA • Options for the Development of Liberia's Energy Sector, World Bank, • National Energy Policy an Agenda for Action and Economic and Social Development, Ministry of Lands, Mines and Energy • Assessment of Biomass Resources in Liberia. A. Milbrandt, USAID • Simplified Power System Master, Plan - A Primer for Decision-making, Norconsult, Norad, • Electric Supply in Liberia, Geoscience Srl, European Development Fund |

| | |
|----------------------------|---|
| | <ul style="list-style-type: none"> • An Assessment of Energy Option for Liberia, USAID • Report on Basic Studies on Hydro-Electric Power Development in the Republic of Liberia, JICA • Increasing Clean Energy Access in Rural Liberia: Feasibility Analysis and Action Plan for A Gender-Inclusive, Enterprise-Centered Approach, Daphne Foundation • Renewable Off-Grid Power & Lighting Market Development in Liberia: Market Opportunities for Solar Portable Lights, RREA • Pre-feasibility study on the Development of Power in the Liberian Rural Areas, DECON |
| Capacity building | There is a need to make capacity building a key component of the Investment Plan given the low capacity on the ground. |
| Financing | Financing of ongoing renewable energy projects have been led by bilateral and multilateral donors (World bank, USAID, Norway, EU, African Development Bank). |
| Procurement and recruiting | The government with technical assistance from the MDBs lead by the World Bank has recruited one International Consultant and one National Consultant to lead the preparation of the Investment Plan. |
| Other | There are several donor supported programs which require consolidation in a program to ensure coordination and maximum development impact. Additionally, a new Energy Law is being drafted for the sector. |

Please describe any challenges encountered in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.

| | |
|---|--|
| Political issues | Delay in passage of RREA Legislation into law by the National Legislature despite efforts by the RREA to get the Bill passed. |
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | Although the stakeholders have been responsive by participating in the consultation activities, it has been quite a challenge in reaching all stakeholders across the country. |
| Institutional arrangements and government coordination | No significant challenges so far. |
| Stakeholder capacity (e.g., government, private sector, CSOs) | Limited capacity of local stakeholders in addressing technical renewable energy issues for investment plan development. |
| Data availability | Lack of central repository for data. Limited data available are scattered at various institution and are tailored to their respective activities and needs. |

| | |
|----------------------------|--|
| Financing | Limited financial resources from the government. Lack of legal and regulatory framework to attract private investment. |
| Procurement and recruiting | A major challenge is limited technical expertise in the sector, which poses a challenge it procurement. |

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

- The SREP programming process has created a platform for stakeholders to meet, discuss and agree on energy access issues, technology options and investment requirements.
- It has created awareness amongst stakeholders about the need for coordination and programmatic approach to addressing energy access and the capacity required
- It has motivated the private sectors, especial commercial banks to consider financing renewable energy investments.

Monitoring energy access:

| | |
|---|--|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | <ul style="list-style-type: none"> • Disaggregated energy resources and technology options in the energy supply mix; • Access rate from current baseline level (number of education, health, public buildings, etc.) with access to energy, especially electricity • Number of households, small businesses and other commercial entities with access to energy, especially electricity. • Number of jobs created ore persons employed in the energy sector from the current level. • Number of persons trained (disaggregated by sex) in the energy sector from the current • Number of new businesses (energy enterprises or service companies) established. |
| Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | Yes. The existing monitoring systems will capture the impacts of SREP investments by using baseline information at the roll-out of the Investment Plan to determine its impact over a period of time (consistent with the IP time horizon). |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

The government has little experience with social enterprise delivery of energy access in rural areas. However, that government has been working with NGOs to deliver renewable energy technologies to rural areas.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

The following activities have been successful at scaling up renewable energy access in rural areas:

- A 60-kW micro-hydro power system including associated transmission and distribution network.
- Two hydropower plants (15kW micro-hydro & 1MW mini-hydro power) being financed by USAID
- Lighting Lives in Liberia (LLL) involving the commercial supply of solar lighting products (lanterns) on large scale;
- Ongoing nationwide electrification of 205 rural health clinics with solar PV.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

- Biomass Energy due to lack of technical capacity.
- Solar PV, especially for street (public lighting) has not been successful due to theft.

MALDIVES

Please provide brief descriptions under each of the areas below for a fast-moving project and slow-moving project, in terms of preparation and implementation

Fast-moving project: Accelerating Sustainable Private Investments in Renewable Energy Programme (ASPIRE)

Recent developments

- 280kWp roof mounted solar PV grid connected system was commissioned in March 2013.
- Roof load calculation and cost estimation to install 65kWp roof mounted solar PV grid connected system is completed and expected to tender June 2013.
- A contract has been signed to install 25kWp roof mounted solar PV system in Male'.
- Legal Agreements for the ASPIRE project preparation grant (\$1M) has been received for signature in May 2013.
- Contract negotiation to recruiting a dedicated SREP coordinator to strengthen the PMU is ongoing.
- Drafting the TORs for preparatory studies on the greater Male solar/wind RE program structuring is ongoing.
- Submitted a project summary to IRENA/ADFD project facility to develop waste to energy facilities at three islands. Got shortlisted among 19 selected.
- Currently working on developing a full project proposal to submit before 3rd June 2013.
- Completed drafting Electricity Service Provider Code. The Service Providers Code is designed to act as the central regulation for the provision of electricity in the Maldives. This code regulates the rights and obligations under which the Service Provider's activity shall be carried out. It includes provisions/requirements for generation, distribution and retail activities.
- Completed drafting Metering Code. This code regulates the requirements to be imposed on meters depending on the voltage level and type of customer.
- Completed drafting Electrical Installation Standards. This standard sets technical characteristics and safety related requirements to be imposed on MV and LV electrical installations.
- Completed drafting electrical workers licensing regulation. This regulation sets the licensing requirements of the electrical works, regulates their code of conduct in carrying out electrical works in the Maldives.
- Completed drafting framework for utility Investment Approvals including model PPA.
- Completed drafting regulation and guidelines for labeling of

| | |
|---|---|
| | <p>electrical equipments imported to the country.</p> <ul style="list-style-type: none"> • Drafting a tariff methodology including Feed in Tariff |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Install and commission 65kWp roof mounted solar PV grid connected system in Male'. • Install and commission 25kWp roof mounted solar PV grid connected system in Male'. • Complete greater Male' region renewable energy integration plan. • Preparing the outer island waste-to-energy projects. • Creating the enabling environment for distributed renewable energy development in greater Male' and large/medium outer islands; risk mitigation instruments and incentives; outreach to stakeholders and awareness creation. • Identify waste type, quantity and collection options. |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Government commitment to develop the RE sector. • Creation of an efficient Energy Department dedicated to energy sector related projects. • Strengthening of MEA by conducting capacity building activities and amending/developing regulations. • Support from all stakeholders including MDBs. |
| Barriers to project progress / reasons for delay | <ul style="list-style-type: none"> • Inadequate information on the availability of RE resources. • Inadequate policies on the utilization of RE. • Limited involvement of entrepreneurs in producing and servicing RE systems. • Small scale and high complexity of transactions. • Power station readiness- requires significant upgrading of the existing systems. |
| <i>Fast-moving project: Preparing Outer Islands for Sustainable Energy Development Programme (POISED)</i> | |
| Recent developments | <ul style="list-style-type: none"> • 1.1 million USD grant for project preparatory technical assistance approved in 2012 by ADB • A project management unit has been established. • Project preparatory technical work initiated under newly hired PPTA consultants. • Islands required for detail study has been identified and PPTA consultants will visit the islands in June 2013. • 09 parties have been shortlisted under the Solar Maldives program to install 5MW solar PV roof mounted systems in 15 large islands under feed-in tariff mechanism. |
| Goals for the next 12 | <ul style="list-style-type: none"> • Complete detail study in selected islands, prepare bidding |

| | |
|--|--|
| months | <p>documents and start installation of solar PV, wind, rehabilitate some of the power systems.</p> <ul style="list-style-type: none"> • Prepare bidding documents and procure a party to install roof mounted solar PV systems in the islands. • Install and commission of 5MWp solar PV systems in 15 islands. • Discuss with ADB to expand the scope of the project to include more islands. • Increasing the RE injection to the grid beyond 30%. |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Government commitment to develop the RE sector. • Creation of an efficient Energy Department dedicated to energy sector related projects. • Strengthening of MEA by conducting capacity building activities and amending/developing regulations. • Support from all stakeholders including MDBs. |
| Barriers to project progress / reasons for delay | <ul style="list-style-type: none"> • Inadequate information on the availability of RE resources. • Inadequate policies on the utilization of RE. • Limited involvement of entrepreneurs in producing and servicing RE systems. • Small scale and high complexity of transactions. • Power station readiness- requires significant upgrading of the existing systems. |
| <i>Slow-moving project: Thilafushi Waste-to-Energy Programme</i> | |
| Recent developments | <ul style="list-style-type: none"> • A number of discussion sessions held to agree on terms with the party selected to manage the waste facility at Thilafushi. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Agree on terms with the existing contractor. • Coordinate with IFC in developing the project documents. • Start the implementation of the waste-to energy facility at Thilafushi island. |
| Barriers to project progress/ reasons for delay | <ul style="list-style-type: none"> • Lack of know-how on waste management. |

| | |
|---|--|
| <i>Monitoring energy access:</i> | |
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | <p>Indicator: Amount of RE share in the electricity mix of the country. Number of RE systems installed in the country. Reduction in fuel subsidy and amount of diesel fuel avoided.</p> <p>Monitoring: Annual Energy Demand and Supply Study. Statistical year book.</p> |
| Will these existing | Yes, Above mentioned reports include data on amount of electricity |

| | |
|---|--|
| <p>monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how?</p> | <p>generation, consumption and the source.</p> |
|---|--|

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

Social enterprises are generally keen to adopt renewable energy technologies as it gives them more energy security. However, due to lack of technical knowhow and access to concessional finance they are reluctant to initiate the process.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

Governments effort to encourage private investments in the sector has led to installation of Solar PV up to 30% day peak in 6 islands under PPA between a private firm and State Electric Company Ltd.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

Initial pilot projects have met with mix success as appropriate enabling environment was missing. However, due to increase in fuel prices and creation of right enabling environments have made renewable energy very attractive investments in Maldives.

What project ideas for the SREP Competitive Set Aside have government, private sector stakeholders, or MDBs discussed in your country?

Install RE on FENAKA/STELCO islands and link between private sector resorts and using underwater cables where feasible (distances of 1-2 km. under shallow lagoon) to provide electricity to resort islands.

MALI

| <i>Please provide brief descriptions under each of the areas below for a slow-moving project, in terms of preparation and implementation</i> | |
|--|--|
| Recent developments | <ol style="list-style-type: none"> 1. La mise à disposition par la BAD du fonds préparatoire (US\$200.000) pour la Phase 1; 2. La mise à jour du programme d'activités pour les ultimes activités préparatoires : (i) missions de sensibilisation/information sur le SREP sur l'étendu du territoire national ; (ii) ateliers / rencontres au niveau national avec le secteur privé et les institutions publiques ; (iii) TdR pour les services de consultants individuels (retours d'expérience sur les centrales hybrides et collection d'information complémentaire pour le projet de mini hydroélectricité). Finalisation du Chronogramme de préparation des marchés de consultation. 3. Préparation des composantes « Renforcement de Capacités » et « Gestion et Partage des connaissances » pour la Coordination Stratégique du programme. 4. Finalisation & transmission des TdR pour la constitution de la base de données physiques sur les centrales micro/mini hydroélectriques dans le cadre de la préparation du projet 3; 5. Finalisation & transmission des TdR de l'étude du retour d'expériences des systèmes hybrides au Mali dans le cadre de la préparation du projet 2 ; 6. Finalisation & transmission des TdR à la banque mondiale pour l'étude de faisabilité des systèmes hybrides dans le cadre du projet 2 |
| Goals for the next 12 months | <ol style="list-style-type: none"> 1. Signer les accords de financement du Don pour le projet 2; 2. Lancer les études relatives aux différents projets du programme ; 3. Mettre en place les structures de mise en œuvre du programme SREP – Mali ; 4. Approbation du projet 2 par le Sous Comité SREP. 5. Disposer du rapport d'évaluation du projet 3 |
| Factors contributing to project progress | <ol style="list-style-type: none"> 1. Stabilisation & amélioration de la situation politique et sécuritaire du pays ; 2. Implication effective des opérateurs privés et des collectivités dans le programme ; 3. Reprise de la coopération bi & multilatérale avec le Mali. |
| Barriers to project progress/ reasons for delay | <ol style="list-style-type: none"> 1. Situation sociopolitique du pays, qui a entraîné la suspension de la coopération bi-multilatérale |

Monitoring energy access:

| | |
|---|---|
| <p>What indicators and monitoring systems are being used at the national or sector level to monitor energy access?</p> | <p>Un système de Suivi et Evaluation (S&E) complet sera mis en œuvre pour collecter, analyser, traiter et communiquer les informations de base relative aux activités du programme ainsi que les résultats, les impacts et les leçons apprises. Il s'inscrira parfaitement dans le système national de S&E du secteur de l'énergie, tout en portant une solution à ses principales contraintes et ses facteurs de blocage. Il constitue l'instrument clé pour planifier et suivre les activités du programme.</p> <p>Pour l'accès à l'énergie, il y a des indicateurs clés et des indicateurs connexes.</p> <ol style="list-style-type: none">1. Nombre de ménages bénéficiaires des projets ayant accès à des services d'énergie renouvelable (hommes/femmes)<ol style="list-style-type: none">a. Nombre de systèmes d'ENR installés (désagrégé par type d'équipements EnR) ;b. Taux d'accès à l'électricité aux niveaux national, urbain et rural ;c. Nombre de nouvelles localités bénéficiant de l'éclairage public ;d. Nombre de nouveaux abonnés d'électricité en milieu rural (par an ;2. Évolution du pourcentage (%) de GWh produit à partir d'énergies renouvelables et par ménage ;3. Accroissement de la capacité des EnR en MW ; |
| <p>Will these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how?</p> | <ul style="list-style-type: none">• Diminuer l'exploitation des ressources énergétiques non ou peu renouvelables (ressources forestières) ;• Réduire les émissions de GES dues d'une part à la déforestation et d'autre part à l'utilisation des énergies fossiles ;• Maximiser les opportunités de développement économique : création de nouvelles activités économiques et d'emplois nouveaux liés aux technologies nouvelles, implication du secteur privé, etc.• Réduire la dépendance aux énergies fossiles (et de la facture énergétique) à travers l'augmentation de la puissance installée provenant des énergies renouvelables ;• Appuyer la décentralisation par le renforcement des mécanismes techniques, institutionnels et financiers du transfert des compétences aux collectivités territoriales ;• Assurer une meilleure disponibilité d'informations de nature politique, administrative et réglementaire susceptible d'attirer l'intérêt des investisseurs étrangers ;• Améliorer l'efficacité et la durabilité des filières énergie-biomasse et soutenir les modes de vie alternatifs basés sur une économie à basse intensité en carbone ; |

| | |
|--|--|
| | <ul style="list-style-type: none"> • Contribuer e à la réduction de la pauvreté. • Mobiliser de ressources nouvelles et additionnelles en faveur de projets d'EnR ; • Accroître des investissements dans les énergies renouvelables • Renforcer de l'environnement favorable à la production et utilisation d'EnR ; • Viabilité économique accrue du secteur des énergies renouvelables ; • Renforcer la sécurité énergétique. |
|--|--|

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

Le partenariat public privé dans le domaine de l'accès à l'énergie est en cours actuellement au Mali à travers différents opérateurs d'électrification dans les zones rurales par l'utilisation de toutes les technologies(diesel, hybrides diesel/solaires et kits individuels).

Ainsi plus 60 entreprises de services énergétiques opèrent dans les zones rurales du Mali avec plus de 75 000 clients.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

Divers projets et programmes ont été initiés par le Mali pour le développement des EnR notamment le PEDASB, le PEVES etc.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

La diffusion de chauffe eau solaire n'a pas connu un grand succès à cause de complexité des mesures d'accompagnement à mettre en œuvre.

NEPAL

| <i>Please provide brief descriptions under each of the areas below for a fast-moving project and slow-moving project, in terms of preparation and implementation</i> | |
|--|--|
| <i>Fast-moving project: Mini-micro hydro on mini-grid and Solar Grid</i> | |
| Recent developments | <ul style="list-style-type: none"> • Project document is finalized. Yet to be signed an agreement between GoN & ADB • Finalized selection criteria for Subsequent Subprojects • Finalized implementation procedure |
| Goals for the next 12 months | <ul style="list-style-type: none"> • Expected approval from SREP Sub-committee & ADB Board • M & E guideline is prepared • Demand collection • DFS of some sub-projects ready • Initiate community mobilization & fund mobilization • Initiate solar grid installation |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Well experienced implementing organization • Close collaboration between GoN & MDB • Institutional arrangement to implement Mini-hydro mini-grid is in place. • Demand of stakeholders |
| Barriers to project progress / reasons for delay | <ul style="list-style-type: none"> • Fulfillment of MDB requirements • Long approval process • Financial closure by community for mini-hydro projects |
| <i>Slow-moving project: Expanded Biogas Program</i> | |
| Recent developments | <ul style="list-style-type: none"> • Stakeholder consultation Meeting organized • Orientation on waste to energy conducted in 7 municipalities • Data collection on waste resources from over 20 municipalities • MoUs prepared and sent to all 20 municipalities, six have been signed • Subsidy policy and subsidy mechanism prepared • Cost of various large biogas technologies annexed • Preliminary selection of municipalities for W2E plants • Documentation for PQ of biogas companies for large biogas construction • Documentation for PQ of Individual consultant/consulting firms for feasibility study and design of large biogas • MoU with different line agencies as HECAF and Health Care Without Harm for waste management in hospitals and large biogas plants in hospitals. |
| Goals for the next 12 months | <ul style="list-style-type: none"> • DFS and Business Plans for projects are ready • Approval from SREP Sub-committee & WB Board |

| | |
|---|---|
| | <ul style="list-style-type: none"> • M & E system is prepared and integrated • ESMF is finalised • ESMF Officer is recruited • Demand collection through web portal regularly • Fund mobilization for the projects • Initiate the installations |
| Factors contributing to project progress | <ul style="list-style-type: none"> • Proactive implementing organization in RE sector • Close collaboration between GoN & MDB |
| Barriers to project progress/ reasons for delay | <ul style="list-style-type: none"> • Lack of sufficient knowledge & experience of implementing agency • Fulfillment of MDG requirements • Long approval process |

Monitoring energy access:

| | |
|---|---|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | <ul style="list-style-type: none"> • Number of households benefitted • Number of SMEs established • Number of employment generated |
|---|---|

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

Government of Nepal (GoN) has put renewable energy program in first priority. GoN established Alternative Energy Promotion Centre (AEP) in 1996 under the framework of Ministry of Science, technology and Environment as anodal agency for promotion of renewable energy technologies in the country. About 1.5 million rural households are benefitted from small scale renewable energy technologies such as micro/mini hydro, solar, biogas, improved cooking stoves and improved water mill. Further Ministry of Energy works in grid connected hydro power promotion and has developed about 680 MW.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

Small scale renewable energy technologies for cooking, lighting and running enterprises are very successful in rural Nepal. These technologies have been promoted in public-private partnership model. The users are the owner of installed RE system and they involve from the beginning to install the RE system including equity contribution.

TANZANIA

| <i>Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|--|--|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | Tanzania has recently formulated SREP Investment Plan (IP) through a participatory process involving stakeholders under the leadership of the Government of Tanzania (GoT), represented by the Ministry of Energy and Minerals (MEM), with the support of the MDBs. A workshop was conducted on 20 th March, 2013 to create awareness and collect views from stakeholders for improvement of SREP – IP. Comments were received from different stakeholders through public disclosure of the IP document uploaded in different local websites. |
| Institutional arrangements and government coordination | The IP has institutional framework (IF) which involves existing institutions. SREP advisory committee and Geothermal Development Unit are new institutions within the framework. |
| Analytical work and technical studies | <p>Reviewing existing Government’s programs namely: Tanzania Development Vision 2025, Electrification Targets, National Adaptation Plan for Action 2007 and Sector Environmental Action Plan 2011-2016.</p> <p>The two IP priorities (Geothermal and Mini- Grid) were selected based on national and SREP criteria, therefore SREP-IP complements national development strategy.</p> |
| Capacity building | The Tanzania Energy Development Access Expansion Project (TEDAP) and SIDA supported program have created institutional capacity and favourable environment for implementing SREP-IP. |
| Financing | The SREP indicative financing plan has been prepared. During Stakeholders consultations, commercial banks, MDBs, DPs were engaged and showed interest to support SREP-IP. |
| Procurement and recruiting | The Government in consultation with MDBs have procured an international Consultant for reviewing the SREP-IP document. A PPG (Project Preparation Grant) which includes consultancy services for preparatory works has been prepared. |

| <i>Please describe any challenges encountered in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|---|--|
| Political issues | There is no negative political issues from the public about the SREP Investment Plan, even after public disclosure on the Government’s websites. |

| | |
|---|---|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | SREP-IP received positive acceptance from stakeholders but there is low awareness of the SREP program and its components by local private sector and general public. |
| Institutional arrangements and government coordination | Streamlining of institutional setup for implementation of geothermal component. At present, exists Geothermal Task Force and Geothermal Working Group comprising of members from Government and other different institutions. |
| Stakeholder capacity (e.g., government, private sector, CSOs) | To build the technical and business capacities to match the requirement. |
| Data availability | National Rural Electrification Investment Prospectus provides sufficient information for the mini grid and stand alone components, but the information for geothermal component is insufficient. |
| Financing | Converting donors' promises into concrete commitments. |
| Procurement and recruiting | High costs of drilling equipment and consumables for geothermal component. There are few local experts for Geothermal. Some consultants will be required for the SREP programme. The Geothermal Development Unit (GDU) may face challenge of skilled manpower. |
| Other | A need for additional financing to develop the third priority area of the Investment Plan (Biomass Energy). |

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

Early engagement of stakeholders could improve the document by capturing their interests and contributions early in the process.

Monitoring energy access:

| | |
|---|--|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | <p>Indicators:</p> <ul style="list-style-type: none"> • Number of connections to the grid and off grid/mini grid electricity, annually • Number of connections to social institutions • Increased annual electricity output (GWh) interventions. • Increased number of women and men, businesses and community services benefiting from improved access to electricity. • Leverage factor: US\$ financing from other sources compared to SREP funding |
|---|--|

| | |
|---|---|
| | The Ministry of Energy and Minerals and Rural Energy Agency have Monitoring and Evaluation Systems for making follow up of energy access in the country |
| Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | The existing monitoring system will capture energy access indicators but will have to be improved to capture leverage factor from SREP funding |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

The Government of Tanzania has created enabling environment for developing social enterprises i.e. community based organisations (CBO), non-government organisations (NGO), faith based organisations (FBO) that are registered under the Ministry of Home Affairs. There are few social enterprises working in the delivery of energy access. The government has instituted incentives in terms of technical assistance and financial support to social enterprises and private sector for delivery of energy access in rural areas.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

There various activities for scaling up renewable energy access in rural areas:

- Establishment of EWURA Act 2001 amended in 2006,
- Establishment of Rural Energy Act in 2005 that formulated (REA) and Rural Energy Fund (REF),
- Electricity Act 2008,
- Establishment of Small Power Projects Program (SPP)
- Implementation of TEDAP Off-Grid Component

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

- Projects that did not have financing mechanism for initial connection fees

COUNTRIES ON THE SREP RESERVE LIST

ARMENIA

| <i>Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|--|---|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | <p>During the last joint MDB mission a conference were organised with participation of large group of stakeholders, including public and municipal administration, private sector, NGO, regulatory authority, scientific institutions, etc. They were informed about the CIFs and SREP program, policy and procedural regulation. MDBs representatives clarified raised issues and presented opportunities for country. The stakeholders discussed challenges and priorities of different RE technologies, suggested potential areas to consider as projects for financing.</p> <p>After that by now many separate meetings were held with different stakeholders, i.e. representatives of banks, NGOs, public administration, municipal authorities, USAID energy project teams, UNDP/GEF projects staff, other international projects, national academy of science, etc.</p> <p>A special Commission is established for discussion of the priorities and programs in RE and EE area, including activities under the SREP. The Commission consists of representatives of all stakeholders mentioned above.</p> |
| Institutional arrangements and government coordination | <p>The Commission was established by the Prime Minister decree. It assigns responsibility for activities of the Commission to the Ministry of Energy and Natural Resources. Deputy Minister is the head of Commission.</p> <p>The Renewable Resources and Energy Efficiency Fund (R2E2 Fund) is responsible for coordination of all activities under the SREP.</p> |
| Analytical work and technical studies | <p>Number of studies and analytical reports has been prepared by different institutions during last few years. Most of them were prepared by foreign experts hired under the projects financed by the MDBs and development partners. It includes policy and regulation issues, as well as resource assessments and mapping.</p> <p>The R2E2 Fund has collected all the reports and information kindly provided by donors and projects' teams and published it on website, making available in one place for all stakeholders.</p> |
| Capacity building | <p>Scientific research and engineering capacity of Armenia is very strong. The Energy Institute, the Academy of Sciences (particularly the Institute of Geological Studies, Institute of Microbiology), the</p> |

| | |
|----------------------------|---|
| | <p>American University of Armenia, and other institutions have considerable technical expertise in renewable energy. There is local manufacturing capacity for turbines and pipes for hydro power plants, as well as solar water collectors for heating. There is considerable expertise in small hydro power installation. However for other technologies there is lack of experience.</p> <p>Several workshops were organised by the Ministry of Energy and Natural Resources aimed to increase awareness of the energy related institutions, financial institutions and public servants regarding the technologies and investments. The ADB organised workshop related to the wind resource identification. The KfW provided very extensive training on wind technologies, resources in Armenia, special software application. The data base covering the territory of Armenia with detailed information about the climatic conditions and wind resources was provided.</p> <p>A large conference was organised by an NGO “Small HPP Association”, where the SREP program were presented. Generally the capacity of stakeholders is sufficient to discuss different phases and aspects of IP during its preparation.</p> |
| Financing | The World Bank has provided a grant in an amount of US\$0.3 mln. to support preparation of IP for Armenia. R2E2 Fund co-financing is US\$60,000 as well as support in all activities under the SREP. The Grant agreement was signed on April 19, 2013. |
| Procurement and recruiting | The R2E2 Fund has already completed the selection of international consultant (firm) to support preparation of IP. The consultant firm is from the USA, experienced in energy policy and regulation, as well as feasibility studies in RE. |

Please describe any challenges encountered in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.

| | |
|---|---|
| Political issues | There are no political challenges in the country. Recently the presidential elections were held. There are minor changes in the Government. The Government Program adopted by the Parliament these days has the same strategy and priorities toward the development of the economy and specifically RE area. |
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | There are no difficulties for stakeholders to be involved in the process, since the R2E2 Fund is very well known in the country, and for all issues related to the RE or EE it is the first sources of information. However, taking into account that Armenia is in the reserved countries list the large awareness campaign is not |

| | |
|---|---|
| | <p>envisaged to not increase expectations about potential financing opportunities.</p> <p>Nevertheless key people, so called sustainable energy society formed in Armenia is involved in the process.</p> |
| Institutional arrangements and government coordination | <p>Overall, institutional arrangements and government coordination is in place. There is clear segregation of responsibilities between the ministries, regulatory body, different agencies and the central government. However institutional capacity building may be further required in establishing an enabling policy and regulatory framework to support all types of renewable energy, particularly tariff setting, PPA, governance issues such as coordination and information sharing.</p> <p>Updated, enhanced, and published supply and demand forecast with corresponding analyses on costs and benefits, carbon emissions, investment requirements, and tariff requirements, is needed.</p> |
| Stakeholder capacity (e.g., government, private sector, CSOs) | <p>Research and technical capacity is historically the strength of Armenia, however there is need to prepare professionals for serving the RE increasing market. The government officials are involved in different trainings provided by the EU programs. Regulatory body is also supported by the donors.</p> <p>The financial institutions involved in the projects financed by IFC, EBRD, KfW, etc also get training and capacity building activities. as well as studies, policies and plans for renewable energy development already exist in Armenia. However, institutional capacity building may be further required in establishing an enabling policy and regulatory framework to support renewable energy, particularly tariff setting, and governance issues such as coordination and information sharing. Updated, enhanced, and published supply and demand forecast with corresponding analyses on costs and benefits, carbon emissions, investment requirements, and tariff requirements, is needed.</p> |
| Data availability | <p>One of the challenges for Armenia is lack of energy statistics. Preparation of energy balance according IEA regulations has just initiated. However due to the strong metering and billing system for electricity and gas, as well as RE regulation, it is not a barrier for preparation of IP.</p> |
| Financing | <p>Financing is main challenge for development of RE. Private investors are very interested to invest in RE. However tariff is not sufficient to attract private investors, so they invest only in SHPPs.</p> |

| | |
|--|--|
| | <p>Fixed tariff is set up for most RETs, however impact of more attractive tariff on the end-users may affect poverty situation in country. The state budget constraints and limited scope of external borrowing do not allow application of subsidy scheme for other RETs.</p> <p>The lack of long term loans and affordable financing in local market makes RE investments not feasible.</p> <p>Updated, enhanced, and published supply and demand forecast with corresponding analyses on costs and benefits, carbon emissions, investment requirements, and tariff requirements is needed.</p> |
|--|--|

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

The SREP programming has been started recently. It is very important to establish good information sharing platform and participatory process. It is also essential to collect all necessary data and information for creating the baseline and monitoring indicators in advance.

Monitoring energy access:

What indicators and monitoring systems are being used at the national or sector level to monitor energy access?

The National Statistic Service conducts annual household survey, which has questions regarding access to energy sources and types of energy used for different purposes. The reports show changes caused by different factors, such as affordability of tariffs, policy changes, investments, etc. Key indicators are share of households without access to the energy services. The report provides the same information by income level clusters.

For generation of energy there is an administrative registry, for which the Ministry of Energy and Natural Resources is responsible. Taking into account that there is only one electricity distribution company and one gas company, as well as existence of meters for each consumer, it is very easy to get detailed information about generation and consumption.

The key indicators are shares of different source of electricity in the generation mix (capacity and generation); consumption dynamic by different consumers groups, such as households, industry, tertiary, etc.

For monitoring of impact of specific project this information may be amended by beneficiary surveys with specific methodology and sampling to assure reliable statistic data.

| | |
|--|--|
| <p>Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how?</p> | <p>The existing monitoring schemes can capture also the impact of SREP investments, since they have periodic character and reflect changes in policy, investments etc. In some cases, based on the IP specifics additional surveys could be conducted or the existing questionnaires may be amended.</p> |
|--|--|

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

There is no specific social enterprise for delivery of energy access. This role is assigned to the utilities.

Every year the electricity distribution company and the gas company submit their investment plan to the regulatory body with clear specification of the areas to be covered by their services, or improved delivery to consumers.

Where it is not viable for those companies to invest, the government may finance from state budget.

For example, in order to increase access to the natural gas in rural areas, where it is not profitable for gas company, the government provides financing to the municipalities in the form of low interest loan (1% annual).

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

Due to the challenges mentioned above currently there are no specific activities undertaken. The success story is development of SHPPs in rural areas, however they are connected to the joint distribution system. Therefore for the residents of the mentioned rural area there is no additional benefit, except job creation.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

Fixed tariffs and guaranteed purchase of electricity for 15 years were set in order to attract investments into RE, however due to the not sufficient level of tariffs this incentive has not an adequate impact, since they haven't followed by affordable financing.

MONGOLIA

Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.

| | |
|---|--|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | Interview different stakeholders to develop an issue SREP program laying out a number of key themes that would be discussed in groups during workshop to be hold on middle of August, 2013 |
| Institutional arrangements and government coordination | Government coordination – Ministry of Energy and Ministry of Finance, Mongolia |
| Analytical work and technical studies | Learning process SREP program |

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

To reduce air pollution, fight desertification by using renewable energy technology, and scale-up renewable energy sources

To do a research by using solar hot water system in urban areas for supply hot water and heating. Installation of Photovoltaic Power System at Taishir Hydropower Plant site to work as a hybrid system. Main objective of this project is to construct 10MW solar power plant on previously installed 11MW Hydro Power Plant site of Taishir which provides electricity in Altai town, Taishir, Khaliun, Jargalan soum of Gobi-Altai province and it can perfectly work as a hybrid system.

Solar and ground source heat technology utilization for heating of province's and district's centres in Mongolia.

To distribute 200-300W portable Solar Home System for nomadic herders.

To establish First Mongolian Solar Thermal Power Plant with capacity of 20 MW in Gobi Desert.

To create Solar resource assessment network or Solar Atlas.

Monitoring energy access:

| | |
|---|---|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | The Ministry of Energy has the department of monitoring, evaluation, and internal audit. This department is responsible to make monitoring, evaluation energy assess. |
| Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | No |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

The energy sector of Mongolia is the essential part of the national economy and other sectors activities are very much dependent on this sector.

Mongolia's energy system is comprised of Central (CES), West (WES), East (EES) and Altai-Uliastai (AUES) autonomous energy systems, Dalanzadgad steam power plant and diesel generators with provisional operations installed at small settlements. Energy lack during the peak load in the Central Energy System and almost all energy demand in the Western zone of the country is supplied by the imported energy from Russia. Recently more than 90% of territory and 95% of the population are reliably supplied with energy. There are seven 6 – 560MW coal-fired power stations, thirteen 0.15-12MW hydro-power stations, small size solar, wind and diesel generators operating in Mongolia which connected to the 1,044km long of 220kV, 4,240km long of 110kV, 6,921km long of 35kV, 2,112km long of 15kV, 9,639km long of 6-10kV and 7,942km long of 0.22-0.4kV power transmission lines through 3,675 substations of 6kW to 220kW capacity.

Invested from the National Budget, since 1996 more than 200 soums or settlements have been connected to the centralized power supply system, some small villages were connected to small size hydro-power stations and some were supplied with solar and wind power generators, more than 100,000 nomadic families were supplied with solar home systems. Nowadays, 302 of total 331 soums are connected to the centralized power supply system, renewable energy facilities are installed in 13 soums, and power transmission lines are being installed to connect 3 soums with the centralized power supply system.

About 92.67% of power consumed are produced by power stations, 0.42% by diesel generators, 1.1% by hydro-stations, 0.01% by renewable facilities, and 5.8% are imported. Increase in power demand in the Central zone is supplied by the national producers.

The Government encourages the sustainable development strategy goals to improve structure of energy assess and reform brown economy to green economy by developing renewable energy which has less impact on environment.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

100,000 Solar Houses (Gers) - National Programme for Providing Rural Areas with Electricity through the Utilization of Renewable Energy (2000-2012).

The main goals of the programme were:

Electrification of all households in rural areas through Solar Home Systems (SHS).

Development of Solar-Wind-Hydro-Diesel power hybrid system to meet electricity demand of livestock herdsman's households, villages, rural schools, hospitals, tourist camps, frontier posts, etc.

The SHS were subsidised through contributions from various bilateral donors over the course of its lifetime (2000-2012). More than 30000 subsidised SHS were sold to herder families by 2004. Over 40000 SHS were distributed to herder families financed by the Mongolian National Budget in 2006-2007. After the inclusion of the World Bank in 2006, 27000 more subsidised SHS were sold. The programme has also improved electricity distribution systems in 30 soums (districts), and installed hybrid systems to reduce the use of costly diesel in 15 soums. It has increased the electrification rate among nomadic herders from zero to 70%.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

In 2007, Government of Mongolia decided to expand the transmission and distribution grids. Some Soum centers have not connected to the main grid.

The Ministry of Fuel & Energy implemented several stand-alone hybrid renewable energy power plants for supplying electricity to Soum centers financed by the Mongolian National Budget and Mongolia's Development Fund in 2007-2008. The renewable energy systems have been installed in the following Soum centers:

Tseel Soum of Gobi-Altai Aimag, 150 kW Solar-Wind hybrid system
Manlai Soum of Umnugobi Aimag, 150 kW Solar-Wind hybrid system
Shinejinst Soum of Bayankhongor Aimag, 150 kW Solar-Wind hybrid system
Bayan-Undur Soum of Bayankhongor Aimag, 150 kW Solar-Wind hybrid system
Bayantsagaan Soum of Bayankhongor Aimag, 150 kW Solar-Wind hybrid system
Matad Soum of Dornod Aimag, 120 kW Solar-Wind hybrid system
Tsetseg Soum of Khovd Aimag, 30 kW, 70kW Solar system
Bugat Soum of Gobi-Altai Aimag, 60 kW, 100 kW Solar system
Khatanbulag Soum of Dornogobi Aimag, 150 kW Wind system
Mandakh Soum of Dornogobi Aimag, 80 kW Wind system
Sevtei Soum of Umnugobi Aimag, 70 kW Wind system
Bogd Soum of Uvurkhangai Aimag, 80 kW Wind system

These renewable energy systems generate electricity using wind and/or solar technologies and have brought significant reductions in operating costs compared to the previous power supply by means of diesel generators.

In September 2008, World Bank executed the performance evaluation on the system configuration, operation and condition of the hybrid power systems in eight Soums of Mongolia. Due to the continuing performance problems of the existing systems, the Ministry of Fuel & Energy requested a further investigation of the hybrid systems. GIZ under the project entitled "Utilization of Renewable Energy" has further investigated eight hybrid systems in March 2009. The Energy Authority made own evaluations on the each Soum and has presented Ministry of Mineral Resources and Energy for taking necessary measure for improvement.

Numerous problems have been occurred in relation to the system design, component selection, quality of the equipment, management and operation and maintenance. Those problems have been

caused due to the lack of know-how (knowledge) in the system design and component selection, absence of awareness of energy efficiency, lack of use of international standards, inadequate supervision/examination of installation, commissioning and insufficient operator training.

Diesel engine generators have been used to supply electric power in each soum in the past. As a result of the installation of renewable energy system, fuel reduction has been achieved in not small way. As a general evaluation, the fuel reduction can be regarded as a benefit of the installation of renewable energy systems. In some soums, renewable energy systems can supply the demand in a day in good weather condition. Depending on the future operation and the system improvement, the renewable systems and the system improvement, the renewable energy systems can be expected to spread as a typical stable system model. However, there are still a lot of problems to be solved. The main problems that must be solved in order to spread the renewable energy system were found. (i) hybrid systems installed in the soums are not functional as an ideal system configuration; (ii) quality of the component: quality and performance of system components are generally poor, and some systems are found to have malfunctions and failures frequently; (iii) operation and management: since lifetime of the batteries considerably depend on the operation and maintenance, the operation and maintenance must be determined very carefully; (iv) electricity quality: large voltage drops and low voltage of distribution lines are found in some soums.

SOLOMON ISLANDS (PACIFIC REGION)

| <i>Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|--|---|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | <p>The Government of Solomon Islands is reviewing its National Energy Policy that was endorsed by the Cabinet of Solomon Islands in 2007. While reviewing the National Energy Policy, the Government is also formulating its Energy Efficiency & Petroleum Strategies and Investment Plan 2013-2018. This work started in November 2012 and consultations were held with the private sector, development partners and various civil society organizations. The formulation of the Renewable Energy Investment Plan commenced in February 2013 and again wide consultations were conducted with the private sector, development partners, civil society organizations and relevant in-line Ministries within the Government.</p> |
| Institutional arrangements and government coordination | <p>The Energy Division within the Ministry of Mines, Energy & Rural Electrification is coordinating the work on formulation of the national Renewable Energy Investment Plan.</p> <p>There is a taskforce set up by the Ministry of Mines, Energy & Rural Electrification that is coordinating preparatory work on development of a 15-20MW hydropower scheme (Tina River Hydro) for Honiara city.</p> <p>This taskforce comprises of representatives from Ministries responsible for infrastructure development, environment, climate change, disaster management & meteorology, health & medical services, education & human resources development, finance & treasury, development planning & aid coordination, provincial government, the government-owned national power utility, attorney-general chambers, water resources division and the office of the Prime Minister. The Government set up a Project office that is implementing the project.</p> <p>There is currently a private investor conducting investigation work on geothermal resources on the island of Savo off-shore of Honiara city with the aim of transmitting the energy to the Honiara grid and sell power to the national utility under a PPA. The private investor reports to the Ministry on a quarterly basis as required by the Mines & Minerals Act under which a prospecting license was issued to them to investigate the geothermal resources.</p> <p>The development of small hydro power schemes for the utility stations in provincial centres plans to form a project management unit (PMU) within the power utility institutional structure.</p> |

| | |
|---------------------------------------|---|
| Analytical work and technical studies | <ol style="list-style-type: none"> 1. Tina River Hydropower Development Phase II Report. 2. Feasibility Study Report on CNO for Auki power station 3. Prefeasibility reports on development of small hydro stations for 5 provincial centres 4. Interim Report on feasibility studies on small hydro stations for 5 provincial centres 5. Solomon Islands National Infrastructure Development Plan |
| Capacity building | There has been hands-on experience provided to staff directly involved with the projects currently implemented. However, there is a great need to increase capacity building in project management, operation & maintenance of renewable energy schemes planned in the future to ensure sustainability of RE systems is maintained. |
| Financing | Access to grid-electricity in the country is around 14% only and mainly in urban centres. The high cost of electricity is attributed to the high dependence on imported diesel fuel for power generation. There has been continuous dialogue established with development partners for financing of renewable energy schemes to increase access to electricity and reduce cost of electricity. |
| Procurement and recruiting | ADB has recruited Snowy Mountain Energy Corporation (SMEC) to develop the country's RE Investment Plan using its procurement process. |

Please describe any challenges encountered in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.

| | |
|-------------------|--|
| Data availability | The main challenge is either non-availability of data or the nonresponsiveness of relevant authorities with required data. |
| Financing | No challenge within the Government budget system as the government annually provides finance support to the Energy Division (although quite small) that is used for solar electrification projects in rural areas. |

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

Data availability is the main challenge in the country and non-coordination between Statistics office with other government authorities is seen as the contributing factor to this reason. There is need for legislation to empower energy office to obtain data. Private oil companies feel reluctant to supply data to the energy office. The strengthening of the Petroleum Act which the Ministry administers is needed to ensure data is easily obtained.

| <i>Monitoring energy access:</i> | |
|---|--|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | <p>The national census data provides indicators on number of households that have access to grid electricity, modern cooking facilities and solar-home systems.</p> <p>The Household Income Expenditure Survey (HIES) would monitor any changes in the indicators.</p> |
| Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | The HIES would capture the impacts of SREP investments in energy access. |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

There is great potential to partner with associations such as women's groups, farmer associations, fishermen associations and such associations like oil palm out-growers groups to deliver energy access in rural areas through engagements. The Government is currently working with a women's association that has in place a micro-finance scheme to install SHSs within their communities that is to be regularly serviced by a RESCO over a two-year period.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

- Solar-home systems project funded under Govt of Japan's PALM6 assistance to the Pacific island countries with recipients having to pay for installation costs and operation & maintenance by RESCOs.
- Government funded solar electrification of rural schools and rural clinics.
- The development of hydropower schemes for the capital city and provincial centres is hoped to increase access to electricity and reduction in electricity costs.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

- Free hand-out of SHSs to rural households with no proper back-up maintenance service.

VANUATU (PACIFIC REGION)

| Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots. | |
|---|--|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | <p>Vanuatu National Energy Road Map (NERM)- Launched in 2011. The Government of Vanuatu (GoV) embarked on developing the NERM with the assistance of the World Bank. Several consultations between line government agencies, the private sector (Suppliers and Retailers), development partners and the public were done to ensure that NERM presents a collective national view on energy sector development and to set out the need to review energy sector policies and legislations to support the implementation of the NERM. The wide consultations prove vital to ensuring a holistic approach to energy being a catalyst of social and economic development. The NERM sets out ambitious targets on access, affordability and energy security, including renewable energy.</p> |
| Institutional arrangements and government coordination | <p>Institutional Arrangement- Prior to 2012, a committee known as the National Advisory Committee for Climate Change, made up of Heads of Department of Meteorology, Energy, Environment, Agriculture, Forestry, Lands, Public Works, and Fisheries were coordinating Climate Change and of which renewable energy projects are part of. However in January 2013, due to major flow of projects, the group reformed itself to be the National Advisory Board(NAB). The NAB is now equipped with Specialist and Advisors. They assist gaps in capacity building of fulltime officers in the Project Management Unit (PMU). This PMU is supported by European Union and the World Bank.</p> <p>Government Coordination- In 2011, the set up of the an Energy Taskforce consisting of three Director Generals from the Ministry of Public Works and Utilities, the Ministry of Lands and Natural Resources and the Prime Ministers Office who chairs the ah hoc committee. The Energy Taskforce is also made up of representatives from the Ministry of Finance, and from the Aid Coordination Unit also at the Prime Ministers Office. They are responsible for oversight of major investment of Energy Projects. For example, the current development of a 8MW Geothermal on the island of Efate.</p> <p>Technical Working Group- The Energy Taskforce is supported by a Technical Working Group which consists of representatives from the Utility companies and the major energy consumers for instance the Hotel and Resort Association.</p> <p>Grid electricity is supplied by two private concession holders (UNELCO and VUI) on four main islands under concession</p> |

| | |
|---------------------------------------|--|
| | <p>agreements with the GoV. Rural electrification is supported by the Department of Energy, Mines and Mineral Resources (DEMRR).</p> <p>An independent regulator, the Utilities Regulatory Authority, provides oversight for electricity prices and services in the concessions.</p> |
| Analytical work and technical studies | <ol style="list-style-type: none"> 1. A Report on Petroleum and LPG Supply Chain Study. 2. A Pre-feasibility Hydro Study for 2 rivers near potential development areas. These are considered to be priority projects. 3. A Pre-feasibility Study on the Efate Geothermal Project. 4. A Global Partnership for Output- Based Aid (GPOBA) on improved electricity access in Vanuatu. |
| Capacity building | <p>The PMU as described previously is the secretariat of the NAB. The PMU staff are assisted by qualified and experienced professionals. PMU provides technical oversight and assistance to the NAB committee. However, there is still greater need for capacity building, especially within the newly established Ministry of Climate Change, Meteorology, Energy, and Environment. Also that there are new projects such as Desalination and Tidal Energy, where a greater need for more technical resource personnel will be required.</p> |
| Financing | <p>The NERM identifies the need for significant investment in the energy sector to increase access (currently at 27%), affordability (one of the highest prices in the Pacific) and energy security (high reliance on diesel fuel. Investment in renewable energy is a key GoV priority for economic, climate change and energy security reasons).</p> <p>Through NAB, continuous dialogue with Development Partners has been the key to securing additional funding for key priority areas in the renewable energy, however much more is necessary to realize the GoV's goals. In January 2013 the NAB committee was invited to attend a World Bank Finance and Procurement guideline workshop, then recruited a fulltime Finance and Procurement Specialist as aid to the PMU staff.</p> |
| Procurement and recruiting | <p>There are processes already in place for recruitment into the Department of Energy and the PMU. The Government recognises the need to create more capacity in the field of Energy and Climate Change.</p> |

Please describe any challenges encountered in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.

| | |
|------------------|---|
| Political issues | Following a recent move by the Government to mainstream funds |
|------------------|---|

| | |
|---|--|
| | for Climate Change adaptation and mitigation, which Renewable Energy is a major component of, it saw the establishment of the new Ministry of Climate Change, Meteorology, Geo-hazards, Energy and Environment. This Ministry mission is to <i>Develop sound policies & legislative frameworks and provide timely, scientific and technical information for service delivery to mainstream community resilience and a sustainable environment and economic development.</i> |
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | GoV achieved stakeholder engagement and consensus on the priorities and goals for the energy sector through the development of the NERM. The challenges going forward will be at project level where broad support from all key stakeholders (GoV, private concessionaires, potential investors, the regulator, land owners, the community and the development partners) will need to be achieved. |
| Institutional arrangements and government coordination | <p>The Department of Energy has been restructuring is in past 2 years purposely to expand the Off-Grid and Rural Electrification Section. The staff will be supported by Energy Policy Advisors and Energy Technical Advisors as an effort to improve and secure more Renewable Energy Projects. The Rural Electrification Team will also be responsible for the Vanuatu Electricity for Rural Development(VERD) Program that will be funded by development partner AusAID.</p> <p>The oversight of all Energy Projects is with the Sector Analyst of the Department of Strategic Planning and Aid Coordination (DSPAC) at the Prime Ministers Office.</p> |
| Stakeholder capacity (e.g., government, private sector, CSOs) | Stakeholder capacity- A few government statutory bodies providing business environment(Eg, VIPA, VCC,etc.) and private sector especially financial institutions (eg. Agriculture Development Bank) have been able to secure or lend minimum loans towards Renewable Energy as they do not have the technical capacity. A suggested basic capacity building training on Renewable Energy would greatly breakdown the barrier in the short term to ensure more low income households get access soft loans to purchase Renewable Energy. |
| Data availability | The Department of Energy has recruited a GIS and Database Officer. Currently under development is a Website which will showcase all concurrent Renewable Energy Projects and those under study. The site will also publish materials and the vision of the website is to establish contact from interested individuals and organisations for information needs. |
| Financing | The Department of Energy was upgraded in 2011, however has not been able to recruit until now. Since the influx of projects |

| | |
|----------------------------|--|
| | administered by the Department, there is a great need to improve additional resources, however financial support from the Government has been slow in progress. |
| Procurement and recruiting | The establishment of the PMU for NAB coordinate and centralise all Project Finance, Procurement, Monitoring and Evaluation. The Department of Energy has yet to overcome financial constraints but progress in recruitment are underway. |

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

- The SREP activities in Vanuatu are timely to complement the National Energy Road Map targets.
- About 73% of the population does not have access to modern electricity. Due to the geographically situation of main islands to the smaller ones, accessibility and affordability is always a concern.
- Mini Grids have been introduced with bio-fuel, but market prices of copra oil are unsteady.

Monitoring energy access:

| | |
|---|---|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | The Department of Energy has annual business plan that outlines developing projects through renewable energy. This identifies the type of project to the community depending on geographical resource and the number of households being improved. The National Statistics Office(VSNO) and the Customs Department have a ICT capabilities to monitor individuals, retailers or organisations that import and classify goods under the Renewable Energy as they get levied from the Government. The VNSO also conducts household income and expenditure survey, of which data for means of lighting and cooking can form the National Access Rate. The electricity concessionaires in Vanuatu are responsible to report the new connections. This is also added to reflect the NAR. Currently the NAR remains at 30% of the total households in Vanuatu. |
| Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | Yes, Vanuatu is made up of collective islands and settlements are governed by Provincial Area Councils. Thus SREP projects will be coordinated and monitored from the Department of Energy to track records of households in communities that gain energy access. Provincial Area Councils work together with the VNSO to ensure households counts are updated. The next HIES will capture the developments of energy access. |

What is your government's experience working with social enterprises for delivery of energy access in rural areas?

In 2010, the Government of Vanuatu and the Government Australia initiated a rural lighting program called the Vanuatu Lighting Project, which now sees 2 in 3 households throughout rural Vanuatu have access to pico solar lanterns. This has significantly reduced the dependency of kerosene for lighting. There are three beneficiaries to this Project and all three are NGOs whom have networking with women groups and youth projects as their distribution centres. The Projects has successfully distributed 40,000 plus pico solar lanterns in just over 3 years.

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

Implementing Phase 2 of the Sarakata Hydro for Luganville Town, Santo. This was carried out by the Japanese Government in 2006, which saw an additional 600 Kilowatt installed.

What activities undertaken in your country have not been successful at scaling up renewable energy access in rural areas?

Biofuel- In 2009, a pilot project on bio-diesel to for mini-grid, however experiencing high cost of operation. There is a lack of capacity in rural areas to maintain and manage the facilities, however the impact into these communities having mini grid eradicates the expenses for gas on domestic generators.

Biogas- The potential for biogas is huge in rural areas as almost every rural household are accustomed to domestic piggery. Though demonstrated by a few, bio-gas from animal waste could provide essential cooking and lighting needs at a very budget cost.

Solar- High capital cost of solar packages and sales of unwarranted solar panels (and batteries) brands.

Wind- Since 2012, 6 modern wind monitoring towers have been installed throughout the country. With wind statistics, this could further develop into wind farm for specific sites with economical capacity.

YEMEN

| <i>Please describe any advances made in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|--|--|
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | As the political and security situation in Yemen continues to improve, the GOY has increased its efforts to engage with private sector, development partners etc. to promote renewable energy in Yemen. |
| Institutional arrangements and government coordination | Eng. Khalid of MOPIC was designated as the focal point. MOEE is the designated agency responsible for the preparation of the SREP investment plan. A multi-ministerial steering committee is under formation and will be confirmed shortly. A working team in MOEE has been established. |
| Analytical work and technical studies | The working team has put together all existing work and studies related to renewable energy in Yemen by donors and the government and identified additional work which might be needed. Any additional work will be done as part of the IP preparation. |
| Capacity building | The working team continues to enhance their knowledge of the SERP and renewable energy thorough different channels. Additional tailored training and capacity building has been considered as part of the scope or support by the grant. |
| Financing | A grant of \$300,000 has been approved to support the preparation of the IP. |
| Procurement and recruiting | The TOR for the international consultant is prepared and the Expression of Interest is advertised and is due shortly. |

| <i>Please describe any challenges encountered in the following areas, arising from your SREP programming process since the last meeting of SREP pilots.</i> | |
|---|--|
| Political issues | Although the country is in a transition stage and new election is expected in 2014, the country's commitment to the development of renewable energy is not likely to change. The key issue of the country and the energy sector to be addressed by any government is to diversify its energy supply from heavy reliance costly liquid fuel as the country's oil production continues to decline. |
| Stakeholder engagement (e.g., CSOs, private sector, development partners) | Prior to the political crisis, there were private international investors engaged in serious discussion with GOY on renewable energy projects, but the level of interests by private sector has not yet returned to the pre-crisis level. It is a challenge to get real private money to in actual projects. |

| | |
|---|--|
| Stakeholder capacity (e.g., government, private sector, CSOs) | The low capacity in the country and sector presents a challenge whether it could manage all aspects of the activity to ensure that the preparation of the IP is done timely and in good quality. |
| Financing | The donors, mainly financing from the region (Arab Fund, Saudi Fund etc) is showing keen interest to support renewable energy development in Yemen. |
| Procurement and recruiting | The perceived security risk by people in many countries presents some challenges whether qualified consultants could be recruited. Although the selection of individual consultants should be a simple process, it is still a challenge whether the process could be completed timely. |

Please provide any additional information you wish to share on impacts or lessons learned from the SREP programming process.

- As Yemen is still in the early process of preparing the IP, the impacts and lessons are rather limited at this stage.

Monitoring energy access:

| | |
|---|--|
| What indicators and monitoring systems are being used at the national or sector level to monitor energy access? | The GOY has set target to increase the country's electricity access rate from the current 50% (about 27% in rural areas) to over 70% by 2022. The GOY, through the Public Electricity Corporation and General Authority for Rural Electricity, monitor the progress made annually, including how many households are supplied by PV systems. |
| Would these existing monitoring systems capture the impacts of SREP investments in energy access, and, if yes, how? | They would, with minor additions, to track the progress made through SREP investments. |

What activities undertaken in your country have been successful at scaling up renewable energy access in rural areas?

Yemen is in the very early stage of developing its vast renewable energy resources, mainly wind and solar, and some geothermal. Some pilot PV home systems have been implemented, wind and geothermal projects are still in the preparation phase. It is yet to be seen what and how can be successfully implemented and scaled up

