Aide-Memoire for
Scaling-up Renewable Energy Program in Low Income Countries (SREP)
Joint MDB Scoping Mission to Liberia
September 11-14, 2012

I. Introduction

1. A joint World Bank Group (WBG) and African Development Bank (AfDB) Mission Team visited Liberia on September 11-14, 2012 to conduct the Scoping Mission for the Scaling up Renewable Energy Program in Low Income Countries (SREP). Liberia is one of seven countries in the 'second batch' of pilot countries selected to benefit from the program. SREP operates under the Strategic Climate Fund (SCF) that supports programs with potential for scaled-up, transformational action aimed at a specific climate change challenge or sectorial response. SCF is part of the Climate Investment Funds (CIF), which promote international cooperation on climate change and support developing countries as they move toward climate resilient development that minimizes greenhouse gas (GHG) emissions and adapt to climate change. CIF resources are available through Multilateral Development Banks (MDBs), and in case of the SREP program for Liberia, the AfDB and the WBG, including the International Finance Corporation (IFC), will jointly manage the SREP program, with the World Bank (WB) as the lead institution.

2. The objective of the Scoping Mission was to assist the Government of Liberia (GoL) in planning and preparing for the development of the Investment Plan and the first Joint Mission, including: (i) Identify relevant government counterparts, discussing the programming and financing modalities, identify how the SREP can support the implementation of the national energy strategy and the planning process; (ii) Identify key development partners and other stakeholders, collecting information on on-going and planned renewable energy initiatives; (iii) Agree on a timeline and resources required for the preparation of the Investment Plan; (vi) Agree on the Terms of Reference for the Joint Mission; and (vii) Agree on the scope and outline of the Investment Plan and clarifying the institutional arrangements for the Investment Plan preparation.

II. Mission Activities and Outputs

3. The Scoping Mission was led by the World Bank with the support of the AfDB and IFC. The Mission had extensive discussions with the GoL, including representatives from the Ministry of Lands, Mines and Energy (MLME), Ministry of Finance (MoF), Rural Renewable Energy Agency (RREA), Liberia Electricity Corporation (LEC), and Environment Protection Agency (EPA). The Mission also benefited from the consultations it had with private sector organizations and civil society organizations, including the Chamber of Commerce, National Investment Commission (NIC), Liberia Business Association (LIBA), Winrock International, Center for Sustainable Energy Technology. The Mission also engaged with development partners involved in the energy sector, including the Government of Norway, European Union, the Japan International Cooperation Agency (JICA), the United Nations Development Programme (UNDP), and the US Agency for International Development (USAID) who provided valuable inputs. In addition, the Mission met with the Norwegian Delegation and Energy+ representatives to discuss about possible areas of collaboration and the need for coordination with the SREP

program in Liberia to avoid duplication of efforts. A detailed list of stakeholders met by the Mission is provided in Annex 1.

4. During the meetings, the Mission introduced the objectives, scope, and type of investments supported under the SREP program, as well as the activities involved in the country-led SREP process. The Mission also clarified the key features of SREP, including: (i) barrier reduction, (ii) leveraging investments, (iii) increasing renewable energy capacity, (iv) transformational impact, and (v) scaling-up through private sector participation. SREP may also support capacity building and creation of enabling environment for scaling up renewable energy.

5. The Mission identified counterpart agencies, agreed on the time schedule and resources needed for the preparation of the investment plan and agreed on the Terms of Reference for the Joint Mission. The details of these outputs are provided further in the document.

1.1 **Indicative funding**. The mission commented to the GoL that in March 2012, the SREP sub-committee agreed upon the upper amount of funding and order of priority in which funding would be allocated to the group of 'waitlisted' countries: (1) Tanzania, $50 million; (2) Liberia, $50 million; (3) Yemen, $40 million; (4) Armenia, $40 million; (5) Pacific Regional (Vanuatu, Solomon Islands), $30 million; and (6) Mongolia, $30 million. As of July 2012, only Tanzania has secured SREP funding, implying that Liberia is next in line to receive SREP funding once additional resources become available.

6.

III. Mission Findings and Agreements:

7. The main findings from the discussions that the Mission held with representatives from Government, private sector, civil society, and development partners are presented below.

8. **Government strategy.** The GoL confirmed that it is their priority to accelerate the expansion of electricity access to the population and improve supply of reliable services essential for economic growth. Building up on the National Energy Policy (NEP) and the initial results achieved in rebuilding the electricity systems destroyed by the war, the GoL has an ambitious strategy to reach electricity coverage of 70 per cent of the population in Monrovia, and 35 per cent nationwide by 2030.

9. Liberia's lack of electricity access (currently 1 percent access) and reliable services, and the high cost of electricity service (52 cent/kWh) remain key obstacles to the country's sustainable economic growth. The installed generation capacity has increased to 22.6 MW of diesel-generated power, of which about 16-18 MW are effectively available. The peak demand has slightly increased from 4 MW in 2010 to 8.6 MW in June 2012. LEC has more than doubled its active customer base from 2,000 to 5,800 customers. The Government aims to reduce the cost of electricity through a progressive shift of the generation mix away from diesel plants towards HFO and renewable energies.

10. **Strategic Energy Plans**. The GoL recognizes the need for a roadmap to expand the grid access, increase electricity supply, and improve the LEC's operational and financial performance. For this reason it has launched the work to prepare a country wide Least Cost Development Plan (LCDP) for the Electricity Sector in Liberia for the short- and medium-term,

until 2030. This work will build on all the previous and ongoing studies to avoid unnecessary duplication and will provide a unified framework of reference for all potential projects for the expansion of the sector. In this context, the SREP Investment Plan for Renewable Energies (IPRE) will focus on both on-grid and off-grid expansion options for the sector using renewable energies in a way that is consistent with the overall framework. The IPRE will serve as an implementation instrument with the proposed investments in RE being consistent with the ongoing planning exercise.

11. **Rural electricity access**. Two-third of Liberia's population lives in rural areas, and the provision of modern energy services to these areas is therefore of critical importance. In January 2010, the Rural and Renewable Energy Agency (RREA) was established to facilitate the expansion of modern electricity services to the rural populations. A challenge for the GoL will be to ensure that the needs of these rural populations are clearly addressed as part of the overall expansion strategy of the sector. Another important aspect that would allow RREA to move forward from the pilot phase to the programmatic approach is the ratification by Parliament of the legislation pertaining of RREA.

12. **Renewable energy situation.** There is limited natural resource mapping data for mini/micro hydroelectric development. Similarly, only a general inventory is available for biomass resources from plantations (rubber, palm oil). There is a number of renewable energy (small hydro, biomass power, solar PV) feasibility studies that have been completed, some date back to the 1970-80s. More recent feasibility studies for pilot scale projects have been undertaken, with few moving to implementation. If renewable energy is to be scaled up with SREP support, to permit Liberia to more rapidly benefit from lower cost electricity and increase access to electricity, a transition from pilot to mainstream investments in required. This will require a program of investments supported by a suitable enabling environment, rather one-off project development. However, it is important to take into consideration the lessons learned from these pilots when designing the proposed investments under the SREP program.

13. **Regulatory framework.** The National Energy Policy, adopted by the cabinet in June 2009, provides the framework for the legal and regulatory activities of the energy sector and articulates the national vision for the energy sector. Currently, USAID is supporting the Ministry of Energy on the review of the Electricity Law.

14. **Private sector role for on-grid and off grid expansion with Renewable Energies.** Limited access to power is a significant constraint to the development of productive activities in Liberia, both at the small and large scale. Most if not all small businesses rely heavily or entirely on high-cost, self-generated power from diesel generators to meet their operating needs. There are a number of large companies active in Liberia, notably in the oil palm, forestry and mining sectors, all of which are also reliant on captive power. There may be potential to combine new or increased captive power generation using biomass or small hydro resources combined with community-level electrification or even feed in to the WAPP or LEC. Under this context, involving the private sector in the development of Renewables Energies in Liberia may not be a simple proposition even in those projects with a potential for commercial viability. In the absence of an overall legal and regulatory framework for private investment in Liberia, it will be necessary to develop credible and transparent commercial arrangements, with the necessary risk mitigation measures to increase the attractiveness for the private sector in these investments, at

least in an initial phase of the program. On the other hand, not all the renewable energy project may be attractive to for-profit potential investors, especially when focusing towards off-grid electrification. In those cases, it may be necessary to depend on public sector investment with private sector management and operations or direct involvement from the communities in the operation and maintenance of the facilities.

15. During the mission, we were unable to engage directly with companies that might be in a position to engage in future renewable energy-based generation beyond their immediate needs. However, the team will further investigate the potential opportunities for renewable energy-based or hybrid RE-diesel generation outside of Greater Monrovia, including with Arcelor Mittal and other concession holders in the agro-forestry sector and mining sectors. The team will also explore the extent in which investment projects that use renewable energies can be developed as IPPs, and what would be the potential interest of private developers and of LEC in such IPPs.

Designated Lead Agency

16. The Minister of MLME confirmed Augustus V. Goanue, from RREA as the focal point for the preparation of Investment Plan for Renewable Energies. The MLME will ensure that all initiatives related to the energy sector and climate change are aligned with the GoL's objectives that will support the access agenda. Within the MLME, Henry Kimber will work on these operational aspects to ensure the desire alignment with the GoL's objectives. The RREA will be supported by a multi-sectoral working group. The MLME will review and validate the Investment Plan for Renewable Energies before it is submitted for endorsement by the SREP Sub-Committee.

Potential Areas of Engagement

17. The focus of SREP is on electricity sector, both grid and off-grid supply. Based on the preliminary findings of the mission, the principal types of renewable energy technologies likely to be of immediate relevance to Liberia and will be analyzed during the preparation of the Investment Plan are:

- ***Mini and micro hydro*** feeding the main LEC grid and isolated grids (up to 10 MW in capacity per facility). MW-scale hydropower plants could supply power to LEC and serve towns powered by diesels. Smaller kW-scale hydropower plants could serve small communities such as the 60 kW Yandohun project currently being rehabilitated. A key risk is the lack of credible hydrology data necessary to estimate hydropower generation.
- ***Solid biomass*** power generation using agricultural resides as fuel, in particular associated with rubber, palm oil and sugar concessions. Some factories are being rehabilitated and this creates an opportune moment to invest in power generation using excess agricultures residues from this factories. The likely developers are the agricultural concessions that own the resource.
- Palm oil extraction leaves behind large quantities of ***palm oil effluent*** (equivalent to 10 GWh per year according to a USAID study). These can be a source of methane emissions, a highly potent GHG if discharged to the atmosphere. The methane from digesters can be used for power generation and/or heat supply. In addition, dry biomass

from fruit bunches could be combusted in boilers to provide steam/electricity if the palm oil factory capacities are large.

- ***Solar photovoltaics***
  - For augmenting grid supply (roof top, or large ground mounted facilities) where solar electricity can be fed to the LEC grid to augment supply. Up to 20-30 percent of demand at any particular moment could be met by such solar installations without needing complex system management/controls.[1]
  - Conjunctive use of solar PV with hydropower to offset diesel generation during the dry season may be of particular value for the Monrovia grid.[2] A centralized PV project close to Monrovia could complement Mount Coffee production and thereby reduce the need to run diesels during the dry season when Mount Coffee production declines significantly.[3] The share of PV can be greater than in the above application.
  - For off grid applications (solar power for lighting and small appliances homes, schools, clinics, streets and other public service facilities. These could be undertaken using the "Sustainable Solar Market Package" (SSMP) approach for which RREA has prepared two packages in Bong and Lofa counties. There are many more communities that could benefit.
  - For small lighting products such as those supported by Lighting Africa, commercial retail marketing channels could be used to rapidly scale up the use of these products to offset kerosene lighting and poor quality LED lights that primarily use disposable batteries. Demand for such products could be high as there are over half a million households and businesses without access to electricity. Even by 2020, large numbers of people without electricity access will remain in both urban and rural areas. Trade finance support could enhance the ability of importers to bring in larger quantities of the high quality products taking advantage of volume discounts and justifying the set up a domestic sales and service network. Initial piloting of these products through commercial channels by RREA, supported by the World Bank AFREA program, has demonstrated strong market response.
- ***Hybrid systems*** for isolated grid applications. Solar PV, micro hydro, biomass with batteries and diesels may offer a low cost solution for some communities.

[1] Since the daytime peak demand in the Monrovia grid is about 5-7 MW today, 1 to 1.5 MW of grid tied solar PV could be installed to supply electricity at less than the avoided cost of diesel fuel. As the demand increases, additional PV can be added as the modularity of PV makes it an ideal technology to match demand growth without needing "lumpy" investments.

[2] Liberia has sharply differentiated hydropower output with the solar resource relatively low during the rainy season and high during the dry season when hydro output declines significantly. Preliminary studies associated with rehabilitation of Mount Coffee hydropower plant shows that without water storage, Mt. Coffee hydropower output during the wet season may be nearly 3 times dry season output (e.g. 70 MW in wet season, 25 MW in dry season).. Solar PV output during the dry season may be 1.5 times the wet season output. Without PV, diesel generation would have to supply electricity during the dry season to make up for loss of hydropower. Thus the avoided cost value of PV is high. IFC financed a similar investment with the Cepalco Electric Cooperative in the Philippines which installed a 1 MWp PV installation to operate in conjunction with its hydropower plant.

[3] Using short term storage that may be available at Mount Coffee, PV share could exceed the 20-30 percent of demand limit when PV is operating in the fuel saver mode. When there is excess PV production (above 20-30 percent of demand), Mount Coffee generation could be backed off and the water held for use at night time and thus avoiding use of peaking diesels. In effect, hydro storage is used to permit zero marginal cost solar PV output to the used at night.

18. A variety of business/delivery models could be considered that are appropriate to the evolving business conditions and laws in Liberia. They may include public ownership and operation (e.g. LEC or county governments); public ownership and private operation; and private ownership and operation under power purchase agreements (such as in Tanzania under the Small Power Program for grid and isolated grid supply, and mini-grids); and community owned and operated. As noted previously, private investors may perceive high risks and may require high risk premiums making the investments non-viable, unless appropriate mitigation measures are put in place. SREP support during preparation phase or during the initial implementation phase will be essential for creating the enabling environment – regulations, purchase agreements, implementation guidelines, inter connection standards, tariff setting rules - and for reaching out to private investors. In addition, risk mitigation, access to long term financing etc., may also be required to create conditions for private investment.

19. These areas will be analyzed during the preparation of the Investment Plan.

Preparation of the investment plan

20. The GoL will prepare the Investment Plan for Renewable Energies (IPRE) with the support of the MDBs. The IPRE will focus on the expansion of electricity services based on the best use of renewable energy sources available in Liberia, including the necessary investment in transmission and distribution to ensure access for the end users, and will be consistent with the overall Least Cost Development Plan for the sector. The preparation will consist of two phases: (i) assessment of the renewable energy potential and costs and demand and supply assessment; (ii) preparation of investment plan and projects briefs. Stakeholder consultations will take place after each phase.

21. The TOR for the consultant to assist GoL in the preparation of the Investment Plan for Renewable Energies (Annex 6) was discussed with the SREP National Focal Point. The draft TOR will be discussed with aforementioned working group. The feedback collected from these discussions will be considered toward the finalization of the TOR.

IV. Next Steps

The Mission agreed on the following timeline with the Government of Liberia.

Actions	By whom	By when (tentative)
MDB Joint Mission and workshop to review the results of the first draft IPRE with key stakeholders	RREA	March 17, 2013
Finalization of the draft IPRE	RREA	May 15, 2013
MDB Joint Mission to finalize the IPRE	MDBs	July 15, 2013
Disclosure of IP for public consultations (two weeks for review and provision of comments)	RREA	August 15, 2013
Independent technical review of the IPRE	RREA	August 15, 2013
MDB internal quality review of the IPRE	MDBs	September 15, 2013
Submission of the IPRE to the SREP Sub-Committee	RREA	October 1, 2013
Endorsement by SREP Sub-Committee	SREP	November 30, 2013

ANNEX 1

LIST OF STAKEHOLDERS MET

GOVERNMENT

Ministry of Lands, Mines and Energy
Patrick Sendolo, Minister
Henry Kimber, Project Coordinator

Rural and Renewable Energy Agency (RREA)
Augustus Goanue, Executive Director
Mardia Warner, Dir. Of Finance

Liberia Electricity Corporation (LEC)
Joseph T. Mayah, Managing Director of Corporate Planning and Performance Monitoring, LEC
William Jasura, Director of Finance, LEC

Environmental Protection Agency (EPA)
Nathaniel Blama, Technical Advisor
Benjamin Karmorh, Climate Change focal point

PRIVATE SECTOR

National Investment Commission (NIC)
Natty B. Davis, Chairman

Liberia Chamber of Commerce (LCC)
Monie Captan, President

Liberia Business Association (LIBA)
Dee-Maxwell Saah Kemayah, President
George Daqn, Member
Joseph Morris, Member
M. Leelai Kpukuyou, Secretary General
David Sembeh, Financial Secretary

CIVIL SOCIETY

Centre for Sustainable Energy Technology
Adolphus Nippae, Energy Officer

Winrock
Bhola Shrestha, Deputy Chief of Party
Leel Wickremarachchi, Private Power Producer Specialist

DEVELOPMENT PARTNERS

European Commission
Giorgio Kirchmayr, Program Manager for Infrastructure

Norway
Fred Rasmussen, Counselor, Norway Embassy
Terje Kronen, Senior Advisor, Min of Foreign Affairs
Reidar Grevskott, Counselor, Embassy of Norway

JICA
Maki Okusa, Head of office

USAID
Danijel Dasic, Infrastructure Advisor

UNDP
Moses Massah, Program Specialist
Kumeh Assaf, Climate Change Advisor

AfDB
Florence Richard-Quintanilha, Senior Climate Change Specialist
Anil Cabraal, Senior Renewable Specialist

IFC
Frank Ajilore, Country Representative
Pepukaye Bardouille, Global Energy Specialist

World Bank
Clemencia Torres de Mastle, Senior Energy Specialist
Zayra Romo, Energy Specialist
Jenny Hasselsten, Energy Specialist
Federico Qüerio, Operations Officer

ANNEX 2

MISSION SCHEDULE

Date	Time	Activity	Place
Tuesday 9/11/2012	8:00 AM	WB internal Meeting	Hotel
	9:00 AM	MDB's Internal Meeting (WB, IFC, AfDB)	WB Country office
	11:00 AM	Meeting with Development Partner in the energy sector	WB Country office
	1:30 PM	Meeting with Rural Renewable Energy Agency (RREA)	RREA office
	3:00 PM	Meeting with Ministry of Lands, Mines and Energy	MLME office
Wednesday 9/12/2012	10:00 AM	Meeting with the Liberia Electricity Corporation (LEC)	LEC office
	1:30 PM	Private sector stakeholder discussion (incl. Liberia National Investment Commission, Chamber of Commerce, Liberia Business Association)	WB Country office
	3:00 PM	Civil society and EPA stakeholder discussion (incl. EPA, Winrock)	WB Country office
Thursday 9/13/2012	9:00 AM	Working session	WB Country office
	1:00 PM	Technical discussion with RREA, MLME, LEC	WB Country office
Friday 9/14/2012	9:00 AM	Joint Mission team discussion and drafting of Aide Memoire	WB Country office
	2:00 PM	Wrap-up meeting with GOL (MLME, MOF, RREA, LEC, EPA)	WB Country office

ANNEX 3

MATRIX OF DONOR INITIATIVES RELATED TO RENEWABLE ENERGY

Projects	Implementing Agency	Description	Amount (US$m)	Dev. Partner Supporting GoL
Liberia Electricity System Enhancement project (LESEP)	LEC	a)Rehabilitation of distribution system; b) Expansion of distribution system and connect additional 17000 low income costumer by July 2014 (funded by Global Partnership for Output Based Aid (GPOBA)); c) Overhaul of the exsisting generation and synchronization to the national grid; d) Rehabilitation of HFO storage and off-loading infrastructure; e) 10 MW thermal power plant; and Technical Assistance. Training for MLME, LEC, EPA, RREA (IDA, PPIAF)	42	World Bank (IDA +GPOBA)
Catalyzing New Renewable Energy in Rural Liberia (CNRERL)	RREA	Establishment of Rural and Renewable Energy Agency. Provision of two pilot project: i) micro-hydro; and ii) pilot of "Lighting Lives in Liberia" program (5.000 lights) providing solar energy to off-grid users.	3.4	World Bank (AFREA)
Scale-up phase of "Lighting Lives in Liberia"	RREA	Scale-up phase of "Lighting Lives in Liberia" (100.000 lights) using solar electric lighting	1.45	World Bank (GEF)
Rural Energy Master Plan	RREA	Development of Liberia's rural energy master plan	2	EU
Cross Border Rural Electrification	?	Cross Border Rural Communities Electrification project (Côte d'Ivoire - Liberia)	11.7	EU
EU Energy facility	Merlin	Installation of solar powered lighting in public clinics national wide		EU
The Liberia Energy Sector Support Program (LESSP)	Winrock	(a) strengthen GOL's capacity to implement rural electrification plans of National Energy Policy, including needs assessment of RREA, training plan for RREA, and developing action plan for an Energy Regulatory Board, REFUND; (b) establish 2 hydropower pilots (micro and mini systems) and two biomass-powered electricity systems; (c) establish 2 additional RE power systems (funds permitting); (d) contribute to expansion of Monrovia's distribution network.	6	USAID
Institutional Capacity Building and Strengthening of the Energy and Water Resources in Liberia (5-year program)	NVE	(a) preparation of a legal and regulatory framework for power and water sectors (incl licensing procedure for new hydro, New Electricity Reform Act, reorganization); (b) institutional strengthening and capacity building; (c) assistance to MLME to ensure sufficient, low-cost and timely generation is made available; (d) upgrading of the national hydrometric network and database; (e) rural and renewable energy support; (f) gender aspects and women's empowerment; (g) coordination and advisement.	8.9	NVE/Norway
WAPP CLSG	LEC	Cote d'Ivoire, Liberia, Sierra Leone, Guinea (CLSG) West Africa Power Pool (WAPP) interconnection and sub-stations.	476	World Bank, AfDB, EIB, KfW
Mt. Coffee HEP	LEC	Rehabilitation of pre-war hydro-electric plant of Mount Coffee, 64 MW	233	Norway, EIB, KfW

ANNEX 4

LIST OF AVAILABLE REPORTS RELATED TO RENEWABLE ENERGY

No.	Report Title	Year
1	Rapid Assessmnet of Renewable Energy Options for Liberia: Solar, Wind, and Biomass Energy Resources Report, Winrock, USAID	2012
2	LIBERIA: Rapid Assessment and Gap Analysis, Preliminary Draft Version, EU	2012
3	Liberia and Energy Access: Willingness To Pay Analysis, World Bank	2012
4	Southeastern energy needs assessment for Grand Gedeh and River Gee Counties, RREA	2011
5	Options for the Development of Liberia's Energy Sector, World Bank,	2011
6	National Energy Policy an Agenda for Action and Economic and Social Development, Ministry of Lands, Mines and Energy	2009
7	Independent review of BRP IPP's biomass energy project in the Republic of Liberia, F. Ah-Kee, Norad	2009
8	Assessment of Biomass Resources in Liberia. A. Milbrandt, USAID	2009
9	Simplified Power System Master, Plan - A Primer for Decision-making, Norconsult, Norad,	2008
10	Electric Supply in Liberia, Geoscience Srl, European Development Fund	1998
11	An Assessment of Energy Option for Liberia, USAID	1983
12	Report on Basic Studies on Hydro-Electric Power Development in the Republic of Liberia, JICA	1975

ANNEX 5

SREP PRESENTATION

CLIMATE INVESTMENT FUNDS

Scaling Up Renewable Energy Program in Low Income Countries (SREP)

Scoping Mission

Liberia
September 2012

ADB Asian Development Bank

WORLD BANK GROUP

1

Structure and Funding — CIF

Clean Technology Fund

Finance scaled-up demonstration, deployment and transfer of *low carbon technologies*

Strategic Climate Fund

Targeted programs with dedicated funding to pilot new approaches with potential for scaling up

Investment Plans

- Support country and regional development strategies
- Optimize blending with MDB financing and other sources, including bilateral programs
- Range of financial products to stimulate private sector engagement

±$4.8 billion

Pilot Program for Climate Resilience (PPCR)	Forest Investment Program (FIP)	Scaling Up Renewable Energy in Low Income Countries (SREP)
Mainstream climate resilience into core development planning	Reduce emissions from deforestation and forest degradation	Create economic opportunities and increase energy access through renewables
$1.2 billion	$639 million	$394 million

±$ 2.2 billion

2

Scaling Up Renewable Energy Program in Low Income Countries (SREP)

CIF

Purpose

To pilot and demonstrate the **economic**, **social** and **environmental viability of low carbon development pathways** in the energy sector by creating new economic opportunities and increasing energy access through the use of renewable energy

Scale

$394 million in pledges for significant programs of capacity building and investments in renewable energy

Governance

SREP Sub-Committee:

- **6 donors countries**: Japan/Republic of Korea, Netherlands, Norway/Spain, Switzerland/Denmark, United Kingdom/Australia, United States
- **6 recipient countries**: Armenia, Ethiopia, Honduras, Kenya, Nepal, Yemen

Observers: civil society (x4), Indigenous Peoples (x2), private sector (x2), GEF, UNDP, UNEP, UNFCCC

Contributor	Contribution Type	Contribution in million USD eq. (as of March 31, 2012)
Australia	Grant	10
Denmark	Grant	12
Japan	Grant	45
Korea	Grant	6
Netherlands	Grant	76
Norway	Grant	52
Spain	Grant	4
Switzerland	Grant	20
United Kingdom	Capital	119
United States	Grant	50
		394

3

'First Batch' Pilot Countries

CIF

Investment Plans – 'original' Pilot Countries

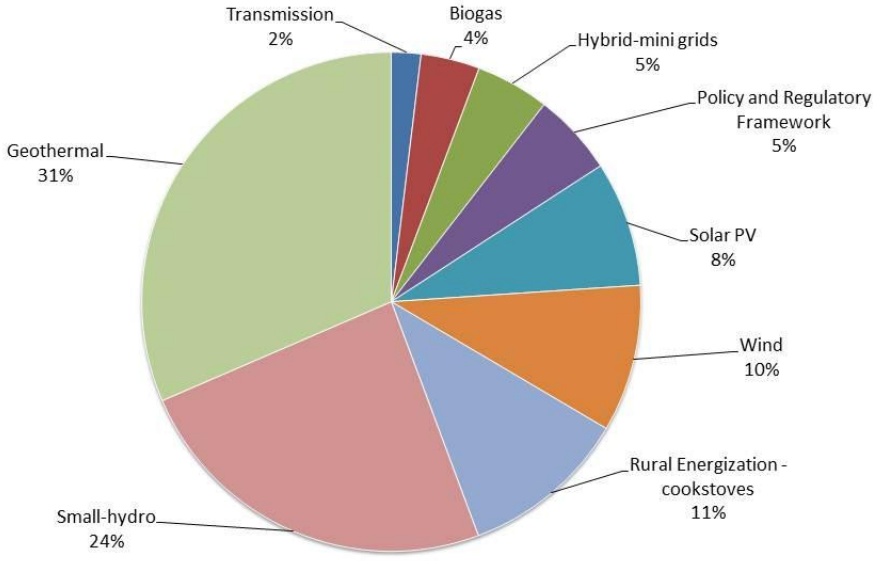
Country	Endorsed by SREP Sub-Committee	SREP Funding ($ million)	Total Funding (SREP+Others) ($ million)	Type of Activities
Kenya	Sep'11	50 *	468	Geothermal, Hybrid Mini-Grid Systems (Solar, Wind)
Honduras	Nov' 11	30 *	273	Strengthening RE Policy and Institutional Framework, RET (TBD) - cook stoves
Mali	Nov' 11	40 **	258	Solar PV, Hybrid Systems (Biofuel, Solar), Mini/Micro Hydro
Nepal	Nov' 11	40 **	514	Small Hydro, Mini and Micro Hydro, Solar, Biogas
Ethiopia	Mar' 12	50 **	496	Geothermal, Wind
Maldives	Nov'12 (tentative)	30 **	TBD	Solar PV, Wind, TA/Capacity Building

* Up to 70% Grants, remaining 30% from Capital contributions

** Up to 100% Grants, except for Private Sector projects which could draw at least $5 million from Capital contributions

4

SREP: Distribution by Technologies



5

'Second Batch' Pilot Countries

Prioritization and Tentative Funding for 'Waitlisted' Pilot Countries

Priority Order	Country/Regional Investment Plan	Tentative SREP Funding
1	Tanzania (funding already secured)	Up to $50 million
2	**Liberia**	**Up to $50 million**
3	Yemen	Up to $40 million
4	Armenia	Up to $40 million
5	Pacific Regional Program (Solomon Islands, Vanuatu)	Up to $30 million
6	Mongolia	Up to $30 million

6

Types of Activities

CIF

Investments

- Eligible Investments:
  - ❑ Solar, wind, bio energy, geothermal, small-hydro (<10MW)
  - ❑ Electricity and thermal
  - ❑ On-grid, Off-grid, Mini-grid

Capacity Building & Advisory Services

- Development of energy policies and legislation
- Assessment of technical resources potential
- Strengthening governance and institutional capacity
- Creation of incentive scheme to improve financial viability of RETs

7

Phase 1: Pre-Investment

CIF

- MDB scoping mission at invitation of Government
- Advance preparation grant *(optional)* to be approved by MDB Committee
- MDB joint mission(s)
- Investment plan preparation grant *(optional)* to be approved by MDB Committee
- Develop investment plan
- Endorsement of investment plan by SREP Sub-Committee

Key Elements Investment Plan

CIF

- Country context (sector description, needs assessment, barrier analysis)
- Renewable energy sector context (Government plans, ongoing activities, analysis of options, institutional structure and capacity)
- Proposed program description (justification of specific investment, technical assistance requirements)
- Co-financing, leverage, partnership
- Primary and co-benefits
- Transformational impact
- Budget envelop, recipients, implementation arrangements
- Risk assessment
- Results framework
- Investment concept brief for each component to be financed by SREP

9

Investment Criteria

CIF

Projects and Investments should address the following criteria:

- Increased installed capacity from renewable energy sources
- Increased access to energy through renewable energy sources
- Low Emission Development
- Affordability and competitiveness of renewable sources
- Productive use of energy
- Economic, social and environmental development impact
- Economic and financial viability
- Leveraging additional resources
- Gender
- Co-benefits of renewable energy scale up

10

SREP Quality Assurance

CIF

- Draft Investment Plan disclosed for public consultations during the preparation stage
- External expert review
- Approval by SREP Sub-Committee

11

Scoping Mission Objective

CIF

- Identify relevant government counterparts, identify how the SREP can be included into the national energy strategy and the planning process, agree on the task force responsible for preparing the SREP Phase I
- Identify key development partners and other stakeholders; this exercise should also lead to identification of potential co-financiers of the SREP
- Undertake a stocktaking of existing activities and documentation
- Agree on the Terms of Reference for the next Joint Mission
- Agree on timeline as well as financial and human resources required to prepare the Investment Plan
- Agree on the scope and outline of the Investment Plan

12

CIF

THANK YOU

13

Design and Operating Principles

CIF

- Partnership among Multilateral Development Banks (AfDB, ADB, EBRD, IDB, and WBG)
- Demonstrate scale and transformation
- Multi-stakeholder at governance and country levels
- Leverages public and private sector
- Complementarity with other partners at the country level
- Sunset clause

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SREP Criteria

CIF

- Transformative impact
- Enabling environment
- Implementation capacity
- Catalyze increased investments in renewable energy
- Improve long-term economic viability of renewable energy sector
- Increase energy access

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