SCALING-UP RENEWABLE ENERGY PROGRAM IN KENYA (SREP-KENYA)

JOINT AFDB AND WBG MISSION

MAY 3-12, 2011

AIDE MEMOIRE

INTRODUCTION

1. Kenya is one of the six pilot countries selected to benefit from the Scaling-Up Renewable Energy Program in Low Income Countries (SREP). SREP operates under the Strategic Climate Fund (SCF), which is part of the Climate Investment Funds (CIF). CIF 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). In the case of Kenya, the African Development Bank (AfDB) and the World Bank Group (WBG), including the International Finance Corporation (IFC), are jointly managing the SREP program, with the World Bank (WB) acting as the lead institution.

2. The SREP aims to demonstrate the social, economic, and environmental viability of low carbon development pathways in the energy sector. It seeks to create new economic opportunities and increase energy access through the production and use of renewable energy. The SREP program will enable Kenya to initiate the process to achieve a transformational change that will lead the country towards a low GHG emission development. This will be made possible by harnessing the renewable energy potential of the country instead of developing the economy based on fossil fuels and on inefficient use of biomass.

3. Since selected as a SREP pilot country, the Government of Kenya (GoK) has undertaken a number of preparatory activities. In particular, it has: (i) participated in the SREP Sub-Committee Meeting and the first SREP Pilot Country Meeting in Washington, DC in November 2010, and (ii) hosted the MDBs' Scoping Mission from February 7 to 11, 2011, during which the preparation of the SREP Investment Plan ("IP") was launched with the establishment of a Task Force and a Consultative Group and consultations were held with national stakeholders. During the Scoping Mission, the Government and the MDBs agreed that a first draft of the IP would be prepared by the end of March and that the MDBs' Joint Mission would be undertaken in May 2011. The Aide Memoire of the Scoping Mission is available on the CIF website[1].

4. The GOK forwarded the draft IP to the MDBs on April 12, 2011, and subsequently the Joint Mission ("the Mission") visited Kenya from May 2 to May 12, 2011. The objective of the Mission was to continue working with the GoK in further developing the draft IP to ensure that it is consistent with the overall SREP objectives, meets the investment criteria for programming priorities under the SREP, and incorporates feedback from private sector and civil society stakeholders. *Annex* 1 provides the names of the Mission members and observers. The detailed Terms of Reference (ToR) of the Mission are available on the CIF website[2].

5. The Mission expresses its appreciation for the courtesies received and for the support and cooperation accorded to it by the Ministry of Energy and the Ministry of Finance. The Mission wishes to thank the Government and all parties consulted (national institutions, organizations representing civil society, private sector representatives, development partners, etc.) for their interest, availability, and the high quality of discussions. *Annex* 2 records the people met.

6. The draft Aide Memoire was discussed at a wrap-up meeting chaired by Dr. Geoffrey Mwau, Economic Secretary, Ministry of Finance, on May 12, 2011.

[1] http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Kenya_post_mission_report_March_10_2011.pdf
[2] http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Kenya_ToR_joint_mission_040711_web.pdf

MISSION ACTIVITIES

7. In accordance with the ToRs of the Mission, the following activities have been undertaken: (i) discussions with GoK SREP Task Force on the development of the Investment Plan (IP); (ii) consultations with private sector representatives, civil society stakeholders, and development partners to gather their inputs on the IP; and (iii) visits to renewable energy development sites.

Discussions with the GoK SREP Task Force

8. The Mission had a series of discussions with the GoK Task Force on the strategic priorities for renewable energy development and the screening criteria for interventions to be included in the IP. The consolidated WBG/AfDB comments on the first draft of the IP that were sent in advance of the Mission and stakeholder feedback formed the basis of the discussions. The Mission also advised the Task Force on the SREP investment priorities and operational guidelines; discussed how to strengthen the IP with respect to social and gender aspects; supported drafting of the results framework; agreed on capacity building and lesson learning activities to be supported by the IP; agreed on a timetable to finalize the IP; and outlined a timetable for the preparation and appraisal of selected investments.

Consultations

9. **Stakeholders' Consultation Workshop**. In the Stakeholders' Consultation Workshop organized by the MoE on May 6, 2011, consultations were held with key stakeholders in the country, including national institutions/ authorities, development partners, civil society organizations (CSOs), local communities and the private sector. The workshop was aimed at supporting GoK to develop its investment plan through a wide consultation and dialogue process with all stakeholders. During the workshop, the GoK Task Force presented the draft IP and a proposed set of criteria for selecting the individual projects to be supported by SREP.

10. Workshop participants welcomed the SREP program, the array of activities included in the draft IP, and generally validated the proposed selection criteria. In addition to a number of comments on the IP and suggestions for additional activities to be included in the IP, the participants also had a number of suggestions for improving the selection criteria. The GoK SREP Task Force has reviewed all the comments received and will take them into consideration in finalizing the IP. Summary of the Workshop consultations is provided in *Annex* 3.

11. **Technical Workshop**. Following the Stakeholders' Consultation Workshop, the GoK organized a Technical Workshop with the SREP Task Force members on May 8, 2011. During this workshop, the Task Force together with the Mission reflected on the outcomes of the stakeholders' consultation and discussed and agreed on the screening criteria to be used to prioritize the interventions under the IP. The technical workshop was an occasion for the Mission to stress the importance of the expected transformational impact of SREP and its expected leveraging effect. SREP funds should be used to mitigate additional risks associated with renewable energy technologies and remove financial and institutional barriers.

12. **Consultations with Development Partners**. The Mission met with the Development Partners involved in the renewable energy sector in Kenya (AFD, EIB, JICA, UNDP, and UNEP) to discuss the draft IP with a view of building synergies with other programs in the field of renewable energy. The Development Partners emphasized that the SREP interventions should have a clear focus so as to avoid spreading too much across different activities. They noted that the IP should reflect the economic impact of the different interventions, with a particular focus on the beneficiaries. There was a suggestion that

opportunity costs of supporting one specific renewable energy technology over another should be evaluated and that lessons learned from past projects should be incorporated in the IP. There was a consensus that capacity building and strengthening of the role of local financial institutions in scaling-up funding for renewable energy expansion was an important area to consider in the IP.

13. The Development Partners are actively supporting renewable energy and are keen to support the SREP program. Areas currently receiving support include geothermal, rural electrification, wind, mini-hydro and cook stoves. The Mission concluded that the Partners' activities had a lot of synergies with the SREP and it was agreed that all Development Partners would keep each other updated on their activities so that support was coordinated. Some specific activities that the Development partners are supporting include the following: The AFD has increased its financing for geothermal, is launching a credit line for renewable energy financing, and is interested in co-financing the proposed hybrid mini-grid project under SREP. IFC and EIB are currently working on a credit line and related advisory service instrument for financing and supporting renewable energy projects by the private sector, including small hydro, biomass, and the development of mini-grid systems. UNDP has expertise in energy access, wind risk assessment, small hydro standards, solar water heater development, and development of household cook stoves. UNEP is working on cook stoves development, geothermal development, and capacity development on Clean Development Mechanism (CDM) for KenGen. DFID is working on creating a Climate Innovation Center (with Danida and WB), Renewable Energy Challenge Fund in East Africa (with Danida), and an Output-Based Aid (OBA) activity on mini-grids (with the Dutch and the German).

Site Visits

14. The Mission made two site visits. One was to the Menengai geothermal development field where GDC has installed two rigs and initiated drilling works. The other was a visit to a boarding school in the Magadi district, where the MoE and the REA had installed solar PV panels and a small wind generating plant to supply the school with reliable power to run educational equipment. This was also one of the 33 sites where the MoE has installed wind measurement instruments that will provide data to update Kenya's wind atlas. The visits were well organized by GDC and MoE and provided the Mission with valuable insights to the development and the impacts of renewable energy in Kenya.

KEY FINDINGS

Ownership

15. The GoK has demonstrated its full ownership and strong commitment to scaling-up renewable energy to improve energy security, boost economic development, and to address climate change issues. As agreed during the Scoping Mission, the GoK SREP Task Force has prepared a comprehensive draft IP to this end. In developing the IP, GoK has reached out to a wide range of stakeholders. It has shared the draft IP with key private sector and civil society stakeholders and invited about 100 stakeholder organizations to the Stakeholders' Consultation Workshop to discuss strategic priorities for renewable energy development. This has contributed to improving the relevance of the IP and also has helped strengthen the technical aspects of the activities included in the IP. There will be an additional public consultation on the draft final IP.

Strategic Priorities for the IP

16. The SREP IP builds on three national strategic priorities that are being pursued in Kenya. These are: (i) provide the growing economy with adequate energy supply at least cost; (ii) "green" the energy

mix; and (iii) consider a wide range of renewable energy technologies. The Mission noted that these were consistent with the country's long-term development strategy (Vision 2030) and the SREP guiding principles. Furthermore, IP is consolidating renewable energy development objectives that are scattered in different national policies and strategies such as the Vision 2030, the Sessional Paper No.4 of 2004, the Energy Act of 2006, the Kenya National Climate Change Response Strategy, Rural Electrification Master Plan and the Least Cost Power Development Plan.

17. The World Bank estimates that to achieve the MDGs, Kenya needs to sustain an annual economic growth rate of 7 percent, a target which has been elusive. For instance, during the last decade economic growth averaged 3.7 percent. Inadequate infrastructure has been identified as the most significant binding constraint to Kenya's growth, and the highest deficit is in the power sector. Estimates show that Kenya needs to at least double the current power generating capacity by the end of the current decade. This level of investments would boost growth in incomes per capita by more than 3 percentage points, which is the threshold required for Kenya to become a middle income country (US$1,000 per capita) by the year 2019.

18. Kenya is endowed with rich and diverse renewable energy resources, which, if exploited, can propel its future economic growth by following a low carbon path. By developing its significant renewable energy potential, Kenya can support economic growth in an environmentally friendly manner while moderating the high cost of supply. Renewable energy development will help Kenya adapt to the climate change impacts that have severely restricted its hydro capacity. At the same time, it will also mitigate future environmental degradation by reducing the country's utilization of short-term thermal based emergency power or having to rely less on longer-term fossil based solutions such as coal-based power.

Screening of the Proposed Investments

19. The first draft of the IP had identified a list of possible investment activities, covering as many as seven different renewable technologies and associated activities. Even though all of them were consistent with the overall SREP objectives, it was agreed that the IP was trying to do too much and spreading it too thin. It was better to consider placing more funding behind a narrower set of interventions. Guided by the feedback from the Stakeholders' Consultation Workshop and high level strategic consultations with MoF and MoE, the GoK Task Force was able to refine the screening criteria for selecting the interventions that have the most potential to effect transformational change to a low carbon pathway in Kenya.

20. **Development of Screening Criteria.** Based on the stakeholder consultations and relevant SREP Guidelines[3], the criteria listed below were used to prioritize the interventions.

a. Potential for scale up
b. Potential for new direct beneficiaries
c. Cost effectiveness
d. Contribution to base load/firm power
e. Leveraging of additional resources
f. Avoiding duplication and crowding out
g. Project readiness (e.g. availability of studies)

[3] These include: 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 of additional resources; gender; and co-benefits of renewable energy scale-up.

21. **Application of Screening Criteria.** The screening criteria above were applied to investment proposals, in conjunction with a requirement that all SREP direct investments will need to be co-financed by at least one MDB. Comprehensive diagnostic studies and forward looking analysis were used in applying the criteria. They included a Sectoral Environmental Impact Assessment and an updated Least-Cost Power Development Plan (March 2011). The latter contains key data on costs and potential of various renewable energy sources and technologies. For example, screening cost curves for candidate generation plants of different technologies were used in application of the *cost effectiveness* criterion.

22. **Results of the Screening**. As a result of applying the screening criteria and the strategic priorities of the GoK in the sector, two groups of interventions were identified that have the greatest potential to effect transformational greening of energy supply and use in Kenya and thus are the strongest candidates for SREP. The first group of interventions will target greenfield geothermal resource development, mobilizing large scale public and private financing. The second group of interventions will target renewable energy hybrid mini-grid (mostly solar and wind) systems in dispersed communities based on public private partnerships. The attributes that make these such strong candidates for SREP support include the following:

a. Greenfield geothermal resource development: (i) it has a large scale potential to meet the growing demand for energy in the country as well as to promote the development of the regional geothermal resources; (ii) the potential for newly connected on-grid customers is substantial; (iii) it is the most economical base load technology option when environmental externalities are taken into account; (iv) its large scale development will lead to it substituting for hydropower that is drought prone, leading to greater supply reliability that is critical for Kenya's economic competitiveness; (v) SREP financial support will catalyze additional finance from development partners and the private sector; and (vii) a number of preparatory studies have already been undertaken.

b. Renewable energy hybrid mini-grids: (i) it provides energy for productive uses in dispersed communities, (ii) it benefits poor people in the least developed areas of Kenya; (iii) it is a cost effective option compared to the extension of the national grid; (iv) private sector can potentially participate in the mini-grid investment or operations; and (v) fuel substitution from diesel to solar and wind will lead to reduced environmental impacts.

23. Accordingly, the Mission agreed with the GoK Task Force that the SREP investment would focus on these two areas. However, all the identified projects in the draft IP have significant potential for further development if additional funding were available, whether from SREP or other financiers. It was therefore agreed that the final IP will, in addition to the two priority areas, include other important renewable energy interventions. Their inclusion in the IP will increase the prospect of harnessing financial support and technical assistance for their further development.

Structuring of the SREP Investments

24. Table 1 below sets out a rough and preliminary financing plan for the candidate interventions in the IP. The total cost of the interventions is about US$928 million, of which SREP would finance between US$50-85 million. These funds would leverage additional financing from the MDBs, other development partners and the private sector in a 1/8 ratio.

25. The initial SREP allocation is US$50 million. This allocation would support (i) development of geothermal resources for grid-based power in Menengai in collaboration with development partners; and (ii) conversion of existing diesel power plants in rural areas into hybrid mini-grid systems using

renewable energy and construction of new hybrid mini-grids. Both activities include capacity building and lessons learning. In addition, Kenya can apply for additional funds from the SREP Reserve. The allocation from the Reserve, if approved, would be used for (i) the next phase of geothermal development and (ii) replacement of existing electric water heaters with solar water heating systems. Table 1 shows the proposed interventions under the initial allocation and US$35 million worth of activities under the Reserve.

Table 1: Preliminary SREP Investment Plan (US$ million)[4]

SREP Allocation	Investments	GoK	SREP	AfDB/WBG	Development Partners	Private Sector	Financing Gap	Total
SREP Initial Allocation	Geothermal (Phase A)	126	39	230				395
	Capacity Building		1	4				5
	Geothermal (Phase A) Total	126	40	234	0	0	0	400
	Mini-grids	1	9	10	42	5		67
	Capacity Building		1					1
	Mini-grids Total	1	10	10	42	5	0	68
SREP Reserves	Geothermal (Phase B)		25	75	200	100		400
	Solar Water Heating (including capacity building)	1	10	2			47	60
Total		128	85	321	242	105	47	928
	Leverage Ratio	8						

Note 1. The Table does not show development partners' existing commitments to geothermal development, e.g. AFD has agreed to finance two drilling rigs.
Note 2. GoK funding, SREP funding, and financing gap are excluded from the calculation of the leverage ratio.

Results Monitoring Framework

26. The catalytic replication effect of the Program will come from: (i) investments resources that SREP will leverage; (ii) learning and demonstration; and (iii) impetus to policy development.

a. Leverage of resources: SREP resources will leverage financing from AfDB, IDA, the other development partners and the private sector for renewable energy mini-grid development in a ration of 1 to 8. The investment mobilized by SREP for geothermal resource development will catalyze downstream geothermal IPPs with a potential to harness up to 7,000 MW of geothermal capacity.
b. Learning and Demonstration: In addition, the catalytic replication effect of the Program will come from the capacity building and knowledge creation that the program will leverage. For example, the learning in geothermal resource development, including development of geothermal IPPs, will be shared in Kenya and in other countries in Sub-Saharan Africa especially countries with significant geothermal resource development potential such as Uganda, Rwanda and Ethiopia. Similarly the program interventions in hybrid mini-grid systems will have significant demonstration effect in the region.
c. Policy Development: The IP will give impetus and help sustain the policy, institutional and regulatory environment, being supported by other MDB operations including the Electricity Expansion Project (KEEP of IDA). Specific technical assistance under KEEP, for example, will elaborate regulations for grid connected renewable energy. Technical assistance intervention under the IP will catalyze the private sector.

[4] The SREP funds will be available through the African Development Bank and the World Bank Group.

27. In view of the above, the Mission suggested development objectives and indicators based on the draft Results Framework for SREP[5] for consideration by the Task Force when finalizing the IP as follows (*Annex* 4 provides the suggested results framework for the IP).

a. Program Objectives:

- Increased access to energy from hybrid mini-grids and geothermal sources for women and men
- Additional resources leveraged for geothermal and hybrid mini-grids investments
- Strengthened enabling environment for renewable energy production and use

b. Results Indicators:

- Leverage factor of SREP funding; financing from other sources (contributions broken down by Development Partners (MDBs and Bilateral), Government of Kenya, CSOs, and private sector) for geothermal and hybrid mini-grids using renewable energy sources
- Percentage (%) change in number of project beneficiaries with access to energy services from geothermal and hybrid mini-grids using renewable energy sources (women/men)
- Preparation of policies, laws and regulations for renewable energy

Sectoral Environmental Impact Assessment

28. To implement its energy sector investment program in a sustainable manner, the MoE prepared a Sectoral Environmental Impact Assessment (SEIA) in 2009. The SEIA has reviewed the legal and institutional framework for the energy sector and related environmental regulations and identified the environmental policies that will be triggered with various investments in the sector. In consultation with stakeholders, the SEIA has specified potential cumulative environmental and social impacts and recommended a framework for mitigation and monitoring.

29. For geothermal power development, the SEIA identified the following major negative impacts: loss of vegetation during construction, air pollution due to H_2S emissions, over abstraction of water during drilling, and noise and interference with wildlife. For transmission lines and substations, the major negative impacts identified are deforestation due to clearing of vegetation along the right of ways, interference and injuries of wildlife by shrapnel, loss of land and crop production due to wayleave, and increase HIV/AIDS during construction. In both cases, the SEIA found the significance of the negative impacts to be generally moderate.

30. The Mission noted that the SEIA was a good strategic document that should be referred to in the IP. The activities under SREP will follow the Environmental and Social Safeguard policies and procedures of the respective MDB. The implementing entities for the various activities will need to prepare and disclose to the public an Environmental and Social Impact Assessment (ESIA) and, as required, an Environmental Management Plan (ESMP) and a Resettlement Action Plan (RAP).

Gender Dimensions

31. The Mission had rich discussions with GoK representatives on how the SREP investments would promote the energy sector's gender responsiveness. The Mission also met with the gender focal points

[5] SREP: Results Framework. SREP/SC4./7, October 25, 2010.

for KPLC, KETRACO, MOE and CSOs working in green technology including DJCS biogas systems, and the Green Africa Foundation. These stakeholders identified the following issues as requiring further consideration: (i) while the GoK had an Energy Policy and a Gender policy, concrete steps were needed to mainstream gender into the Energy Policy; (ii) there was a need to understand better the demand constraints to scaling up gender-targeted initiatives; (iii) renewable energy initiatives could be linked to areas with potential for income generation activities for women. In consultation with the stakeholders, the Mission made the following recommendations: (i) make gender a more visible theme in the IP; (ii) make references to energy, gender, and policy actions taken to date in the energy sector; (iii) ensure SREP draws on global best practice in the area of gender and renewable energy; (iv) include concrete gender sensitive activities to be undertaken by SREP projects and identify their anticipated gender impacts; and (v) ensure selected results indicators are disaggregated by gender.

32. The IP was revised to reflect these suggestions including development of a gender training program, in collaboration with on-going and planned energy training initiatives, targeting the gender focal points, senior technical staff and managers of the agencies that will implement the SREP interventions.

Capacity Building and Learning

33. The Mission noted that inclusion of a capacity building and advisory services component was important in linking the proposed investments with the development of local renewable energy expertise and capabilities. Under such a component, activities will (i) ensure that knowledge management processes provide learning opportunities for similar programs within the country and region, (ii) enhance the enabling environment for renewable energy production and use, and (iii) increase renewable energy investment (both private and public). Overall, the capacity building component will aim to strengthen governance and institutional capacity that can help replication of the projects supported under SREP while advisory services will seek to address select barriers to renewable energy uptake. Lessons-learning is closely linked to monitoring and reporting on results and outcomes of programs.

34. SREP can provide grant funding to facilitate access to knowledge and to capture and share with stakeholders the lessons emerging from ongoing operations in a timely manner.

35. It was agreed that the IP would include a brief description of proposed Information Sharing and Lessons Learning (ISL) activities covering the following items:

d. *Objective*: How will the ISL component and its activities contribute to the country overall objective of the IP as well as the CIF's "learning-by-doing" mandate?
e. *Broad scope and main activities:* What are the anticipated thematic priorities for lessons learning? What key activities are envisaged to address them?
f. *Institutional and implementation arrangements*: What roles are the Government and implementing agencies expected to play in the implementation, coordination and monitoring of the program's ISL component?
g. *Capacity strengthening:* If the existing capacity for implementing, coordinating and monitoring ISL activities needs strengthening, how will the ISL component address such needs?
h. *Estimated funding required:* What is the estimated cost of implementing the ISL component? How will it be funded? What project grant funding should be requested from SREP (to be factored into the indicative funding envelops for the individual projects), if any?

WAY FORWARD AND NEXT STEPS

36. Table 2 below summarizes the next steps and their timing to complete the IP preparation process, as agreed upon between the Mission and the GoK.

Table 2: Next Steps and Timing

Action	Timing	Responsibility
Finalize revised draft IP	May 23	GoK SREP TF
Disclose draft IP for public comments on MoE web-site	May 23	GoK SREP TF
Review of the draft IP by MDBs and external peer reviewer	June 10	MDBs/external peer reviewer
Prepare presentation for the SREP Sub-Committee	June 10	GoK SREP TF
Revise draft IP based on comments from external stakeholders, MDBs and external peer reviewer	June 15	GoK SREP TF
Make presentation based on the draft IP to the SREP Sub-Committee for feedback	June 21	GoK SREP TF
Submit final IP to SREP Sub-Committee for endorsement	July	GoK SREP TF
Prepare detailed investment proposals, financing plans, and required environmental and social impact analyses	August onward	Implementing Agencies
Project Preparation Joint Mission by MDBs	August/September	MDBs/GoK SREP TF
Prepare internal project processing documents	August onward	MDBs

Annex 1: Mission Members and Observers

Mission Members:

World Bank
Paivi Koljonen, Lead Energy Specialist & Mission Leader
Gevorg Sargsyan, Program Coordinator, Climate Investment Funds (CTF, SREP)
Mits Motohashi, Financial Specialist
Kyran O'Sullivan, Senior Energy Specialist
Gibwa Kajubi, Senior Social Development Specialist
Migara Jayawardena, Senior Infrastructure Specialist
Jane Kiringai, Senior Economist

African Development Bank
Thierno Bah, Senior Power Engineer
Youssef Arfaoui, Chief Renewable Energy Specialist
Sebastian Veit, Senior Climate Economist

International Finance Corporation
Alexios Pantelias, Clean Energy Global Product Leader
Laura Vecvagare, Senior Investment Officer
Murefu Barasa, Renewable Energy Consultant

Observers:

Daniel Riley, Office of Environment & Energy, U.S. Treasury Department
Greg Briffa, Team Leader - Low Carbon Development I Climate & Environment Group, DFID
Virinder Sharma, Climate Change Adviser, DFID Kenya & Somalia

Annex 2: List of Persons Met

Ministry of Energy (MoE)
Mr. Patrick Nyoike, PS
Eng. Raphael Khazenzi, Ag Director Renewable Energy (SREP Focal Point)
Eng. Richard Muiru, Chief Engineer-Electrical
Ms. Esther Wangombe, ADRE
Eng. Isaac Kiva, Senior Principal Superintending Engineer
Eng. Isaac Bondet, Power Engineering Consultant
Mr. Rodney Sultani, Project Coordinator ESRP and KEEP
Mr. Stephen Kiama
Ms. Faith Odongo
Mr. Ketter Ronald Kipkoech

Ministry of Finance (MoF)
Dr. Geoffrey Mwau, Economic Secretary
Mr. Moses Kanagi, World Bank Desk
Mr. Obadiah Mungai
Mr. Kenneth Wathiru
Mr. Henry Mutwiri

Energy Regulatory Commission (ERC)
Mr. Bernad Osawa, Director Renewable Energy
Mr. Alex Njuguna

Geothermal Development Company (GDC)
Mr. Caleb Indiatsi (SREP Focal Point)
Ms. Caroline Tele

Kenya Electricity Generating Company (KenGen)
Mr. Edward Njoroge, MD
Mr. Christopher Maende

Kenya Power & Lighting Company (KPLC)
Eng. Joseph Njoroge, MD
Ms. Boniface Kinyanjui
Ms. Anne E. Owuor

Rural Electrification Authority (REA)
Mr. Zachary Ayieko, CEO
Mr. Edward Gakunju
Mr. Antony Wanjara

Kenya Electricity Transmission Co. Ltd. (KETRACO)
Ms. Agnes Ongadi
Mr. Godfrey Kariuki

Agence Française de Développement (AFD)
Ms. Maitane Concellon
Ms. Lara Tobin

European Investment Bank (EIB)
Mr. Nikos Milianitis

Japan International Cooperation Agency (JICA)
Mr. Shigeo Nakagawa
Ms. Mari Kato
Mr. Walter Karungani

United Nations Development Programme (UNDP)
Mr. Timothy Ranja

United Nations Environmental Programme (UNEP)
Ms. Kamala Ernest
Ms. Emily Ojoo-Massawa
Mr. Geordie Colville

Annex 3: SREP Stakeholder Consultation Workshop Summary (May 6, 2011)

The stakeholder workshop was organized by the Ministry of Energy of Kenya at Laico Regency Hotel in Nairobi on May 6, 2011. The workshop agenda is attached in Attachment A. The attendees included renewable energy experts and representatives from private sector organizations, financial institutions, civil society organizations and development partners (the list of attendees is provided in Attachment B). Below is the summary of comments provided by the workshop participants.

Part I of the workshop – presentation of SREP program (Attachment D) and the draft Investment Plan (IP) (Attachment E):

1. **Generally** participants considered that the proposed IP is rather comprehensive and has considered a broad spectrum of energy sub-sectors. Participants encouraged the Government to commit more resources for renewable energy development.

2. A number of participants made comments / questions in regards of the broader **regulatory environment for the power sector** – the rationale for differentiated tariffs for different types of renewable energy; the need for "willing buyer" policy from KPLC for small generation projects and the need to have feed-in-tariffs establishing the minimum compensation investors can receive instead of the tariff policy that provides tariffs "up to" specified amount; and establishing a national regulatory agency for biomass.

3. The second set of comments was regarding the **considerations in the process of the preparation of the IP** – whether the programs at the household level were considered for the population outside the grid (e.g. solar lighting and for biomass); the importance of scalability of the proposed programs (i.e. focus on industries that can raise funding and have large potential for providing access to power, e.g. agro-industry); balancing geothermal power with other sub-sectors to ensure diversity of sources of energy; the draft IP does not include considerations of gender issues; providing affordable energy at the village level.

4. A number of participants provided **ideas for other types of potential programs** – attracting private sector through subsidies, e.g. using SREP funding as a tariff subsidy for first movers, which would need to be balanced with sustainability considerations for such a program; consider including biogas projects in SREP IP to cover rural population; building on the prior project of installation of solar power systems in schools in Kenya to ensure its sustainability, a component for energy to small scale productive activities that would address the gender issues; and solar home systems that have a substantial potential in the country.

5. Detailed comments on **the proposed projects in the IP**:
    a. Solar water heaters – using KPLC as a distributor would push out the private sector;
    b. Hydro-power and small wind power – financing feasibility studies and providing them to the private developers for a fee would address one of the key industry obstacles;
    c. Hybrid power generation projects – the potential load appears to be overestimated;
    d. Solar PVs – consider both on- and off-grid projects.

Part II of the workshop – presentation of criteria to be used for selection of projects to be financed under the SREP program (Attachment C):

6. Participants suggested the following potential other criteria:
    a. Potential for climate change mitigation
    b. Sustainability
    c. Social inclusion
    d. Number of jobs / enterprises created
    e. Contribution towards achieving MDG targets
    f. Carbon offset

7. The following additional comments were made:
    a. There is a bias in favor of electricity and other renewable energy sources should not be discouraged / diverse renewable technologies should be promoted
    b. The project should consider the shortest possible way for channeling the funding to the final beneficiaries
    c. What the weighing of the individual criteria would be
    d. Measuring scale-up potential in terms of percentage rather than absolute numbers of MW
    e. Measuring potential for increase in direct connections in terms of "new direct beneficiaries"
    f. The importance of ensuring that the criteria include the gender aspect as well.
    g. Concrete financial indicators (e.g. ROE, payback period) would be useful to see if a project will crowd out private sector opportunities

Attachment A

Consultation Workshop Agenda

Time	Program
8:00-8:30	Registration and Coffee/Snacks
8:30-8:40	Opening Statement by the Ministry of Energy
8:40-8:50	Presentation of the SREP by the World Bank
8:50-9:30	Presentation of the Investment Plan by the Government of Kenya
9:30-11:00	Discussions on the Proposed Strategic Priorities
11:00-11:15	Coffee Break
11:15-12:15	Discussions on the Technical Screening Criteria
12:15-12:30	Wrap-up

Attachment B

SREP WORKSHOP PARTICIPANTS

	NAME	ORGANIZATION
Private Sector Organizations and CSOs		
1.	Henry Chege	ABC Capital
2.	David Jesse	Association of Biogas Contractors - Kenya
3.	Stephen Karekezi	Energy, Environment and Development Network for Africa (AFREPREN)
4.	Mark Hankins	African Solar Designs
5.	Johannes Germ	Asantys Systems
6.	Murefu Barasa	CAMCO
7.	S. Mugwanya	COTED
8.	Felix Gichaga	CFC Stanbic
9.	Reuben Kipkurui	Co-operative Bank
10.	Joe Wart	District Business Solutions Centre (DBSC)
11.	Peter Ndegwa Gathaiya	Ecobank
12.	Emily Awori	Green Africa Foundation
13.	Obindah Brian	Green Africa Foundation
14.	A. Khasiani	Greening the Tea Industry in East Africa
15.	James Wakaba	GVEP International
16.	Michael Ogwapit	Harmonic Systems
17.	Jaap Van Luijk	HSBC
18.	Vincent Magati	Kenya Association of Manufacturers (KAM)
19.	Roda Kilonzi	Kenya National Federation of Agricultural Producers
20.	Charles Muchunku	Kenya Renewable Energy Association (KEREA)
21.	Lucas Maina	Kenya Tea Development Agency
22.	Lydia Muchiri	Practical Action
23.	Robert Ochieng	Renewable Energy Technology Assistance Programme (RETAP)

	NAME	ORGANIZATION
24.	John Maina	Sustainable Community Development Services (SCODE)
25.	Jechoniah Kitala	SNV/Kenya National Domestic Biogas Programme
26.	Charles Rioba	Solar World
27.	Shakila Rasan	University of Nairobi
28.	Lorna Omuodo	Vanilla Development Foundation
Energy Sector National Institutions		
29.	Alex Njuguna	Energy Regulatory Commission
30.	Bernard Osawa	Energy Regulatory Commission
31.	Caleb Indiatsi	Geothermal Development Company
32.	Caroline Tele	Geothermal Development Company
33.	Christopher Maende	Kenya Electricity Generating Company (KENGEN)
34	Godfrey Kariuki	Kenya Electricity Transmission Co.Ltd. (KETRACO)
35.	Anne E. Owuor	Kenya Power & Lighting Company (KPLC)
36.	Boniface Kinyanjui	Kenya Power & Lighting Company (KPLC)
37.	Stephen Kiama	Ministry of Energy
38.	Esther Wang'ombe	Ministry of Energy
39.	Isaac Bondet	Ministry of Energy
40.	Faith Odongo	Ministry of Energy
41.	Eng. R. M. Khazenzi	Ministry of Energy
42.	Eng. Isaac Kiva	Ministry of Energy
43.	Ketter Ronald Kipkoech	Ministry of Energy
44.	Rodney Sultani	Ministry of Energy
45.	Obadiah Mungai	Ministry of Finance
46.	Kenneth Wathiru	Ministry of Finance
47.	Antony Wanjara	Rural Electrification Authority (REA)
48.	Edward Gakunju	Rural Electrification Authority (REA)

	NAME	ORGANIZATION
Development Partners		
49.	Sebastian Veit	African Development Bank
50.	Thierno Bah	African Development Bank
51.	Youssef Arfaoui	African Development Bank
52.	Lara Tobin	Agence Française de Développement (AFD)
53.	Virinder Sharma	Department for International Development (DFID)
54.	Nikos Milianitis	European Investment Bank
55.	Laura Vecvagare	International Finance Corporation
56.	Walter Karungani	Japan International Cooperation Agency (JICA)
57.	Timothy Ranja	United Nations Development Programme (UNDP)
58.	Kamala Ernest	United Nations Environmental Programme (UNEP)
59.	Daniel Riley	US Treasury
60.	Gibwa Kajubi	World Bank
61.	Gevorg Sargsyan	World Bank
62.	Kyran O'Sullivan	World Bank
63.	Mits Motohashi	World Bank

Attachment C

Screening Criteria for SREP Investment Activities Suggested for Discussion at the Workshop

- Energy Potential for Scale Up (in MW)
- Potential for New Direct Connections
- Cost Effectiveness (USc/kWh)
- Contribution to Base Load/Firm power
- Scale-up, Leveraging of Additional Resources
- Avoiding Duplication/crowding out
- Project Readiness (e.g. availability of studies)

Annex 4: Kenya SREP Investment Plan Results Framework (Preliminary)

SREP IP KENYA RESULTS FRAMEWORK (Draft May 2011)						
Results	**Indicators**	**Baseline**	**Targets**	**Responsibility for collection**	**Data Source**	**Data availability (Yes/No)**
RE in the table refers to hybrid (wind/solar) mini grids and geothermal energy for grid supply - the main focus of SREP program intervention in Kenya						
Project Outcomes and Outputs (Draft for Kenya IP)						
1. Increased in access to energy for women and men	Percentage (%) change in number of project beneficiaries with access to energy services from RE (women/men)	TBC	TBC	MoE	Project M&E	
2. Increased GWh of RE energy services	a) Percentage (%) change in # of GWh from RE and per capita	TBC	TBC	MoE	Project M&E	
	b) Number of jobs (women and men) in RE services created	TBC	TBC	MoE	Project M&E	
	c) Percentage (%) change in tons (millions) of CO2 –eq at $ cost per ton	TBC	TBC	MoE	Project M&E	The amount of CO2 equivalent mitigated and the $ cost per ton in Kenya IP projects
3. Decreased cost of energy from renewable sources	Percentage (%) change in $ cost / GWh of RE for project beneficiaries grid-connected	TBC	TBC	MoE	Project M&E (Household Surveys)	
4. Learning about demonstration, replication and transformation captured, shared in Kenya and to other countries in SSA especillay in EAC.	a) Number and type of knowledge assets (e.g., publications, studies, knowledge sharing platforms, learning briefs, communities of practices, etc.) created	TBC	TBC	GDC, REA	Project M&E (Entity reporting))	
	b) Evidence of use	TBC	TBC	GDC, REA	Project M&E (Entity reporting))	
5. New and additional resources for renewable energy projects	Leverage factor of SREP funding; $ financing from other sources (contributions broken down by Donors (MDBs and Bilateral), Government of Kenya, CSOs, private sector)	TBC	TBC	GDC, REA	Project M&E (Entity reporting))	
Catalytic Replication						
1. Increase in renewable energy investments	a) Percentage (%) of RE investment of total energy investment	TBC	TBC	MoE		
	b) Percentage (%) of private sector RE investments of total energy investments	TBC	TBC	MoE		
2. Strengthening enabling environment for RE production and use	a) Adoption of and implementation of low carbon energy development plans	TBC	TBC	MoE		
	b) Enactment of policies, laws and regulations for renewable energy	TBC	TBC	Energy Regulatory Commission		
3. Increased economic viability of renewable energy sector	a) Change in percentage (%) of total investment in RE sector from private sector	TBC	TBC	MoE		
	b) Change in percentage (%) of total energy sector employment working in RE (women/men)	TBC	TBC	MoE		
	c) Cost of renewable energy $/MWh compared to cost of fossil fuels $/MWh over time	TBC	TBC	MoE		
4. Increased energy supply	Increase in percentage (%) of total energy supply from renewable sources in the power industry and in the energy sector	TBC	TBC	GDC, KenGen, KAPAP, REA	Annual reports	
5. Improved respiratory health of women, men, girls, and boys	Prevalence of Acute Respiratory Infections (ARI) (in children under 5 years) (rural/urban)	TBC	TBC	MoE	Household Surveys	
SREP Results Framework - Transformative Impacts in KENYA						
Transformed energy supply and use by poor women and men in Kenya, to low carbon development pathways	a)Percentage (%) share of energy services from modern, renewable, low carbon sources	TBC	TBC	MoE		The amount of total electricity supply (GWh) coming from RE
	b) Percentage (%) of population (rural/urban) consuming energy services from RE sources in Kenya (women/men)	TBC	TBC	MoE		
	c)Level of household "energy poverty"	TBC	TBC	MoE	Household surveys	
	d) Change in the energy development index - EDI (per capita commercial energy consumption; per capita electricity consumption in the residential sector; share of modern fuels in total residential sector energy use; share of population with access to electricity)	TBC	TBC	MoE	Household surveys	