Climate Investment Funds

SREP/SC.4/6
October 22, 2010

Meeting of the SREP Sub-Committee
Washington, D.C.
November 8, 2010

SUPPLEMENTAL REPORT OF THE SREP EXPERT GROUP

Proposed Decision by SREP Sub-Committee

The Sub-Committee welcomes the supplemental report of the SREP Expert Group and expresses its application for the additional work that has been carried out by the group. Recalling its earlier decision that the list of six alternate pilots was to be prepared for consideration should funding become available for additional programs, the Sub-Committee requests the CIF Administrative Unit and the MDBs to seek to mobilize additional resources for the SREP so that the Sub-Committee may consider including additional pilots in the program.

CLIMATE INVESTMENT FUNDS

Program for Scaling Up Renewable Energy in Low Income Countries [SREP]

Recommendation on the Selection of Additional Pilots

Supplemental Report of the Expert Group to SREP Sub Committee

October 19, 2010

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ACKNOWLEDGEMENTS

The SREP Expert Group wishes to acknowledge with thanks the substantial volume of information collated and made available by the Multilateral Development Banks and the CIF Administrative Unit that provided the foundation for the review that was undertaken in May 2010. It has also been of considerable value in this second evaluation for recommendation of additional alternate countries for SREP funding.

We also wish to acknowledge the support of the CIF Administrative Unit and the valuable inputs from the technical and regional units of the World Bank, the IFC, the African Development Bank, the Asian Development Bank, the Inter-American Development Bank and the European Bank for Reconstruction and Development. The background and insights provided by all the aforementioned enhanced and contributed much to our discussions as an Expert Group.

In this second review period the Expert Group has also had the opportunity to seek input on regional program opportunities in the Pacific from institutions with relevant experience in this geographical area. In particular discussions were held with the Renewable Energy and Energy Efficiency Partnership[1] (REEEP) and UNDP[2], Fiji.

The Expert Group also wishes to commend the quality of the documentation prepared by the CIF Administrative Unit prior to the May meeting. The documentation was well presented and thorough in content and an essential element of the deliberations by the Expert Group then and during this second phase.

[1] Eva Oberender, REEEP Secretariat, Melbourne, Australia

[2] Thomas Jensen, UNDP, Fiji

EXECUTIVE SUMMARY

The report and recommendations issued by the Expert Group in June 2010 were considered by the Subcommittee in its meetings of 22nd June 2010. As an outcome of the discussions at these meetings, the Subcommittee chose to accept the recommendations of the Expert Group (EG) with the exception that a preference was given to the inclusion of Nepal in the main recommendations, with Mongolia then transferred to the list of alternatives. In addition the Subcommittee subsequently requested that the Expert Group reconvene to consider the addition of three further countries, or regional project(s), to the reserve list. This Report addresses the outcome of this second phase of work by the Expert Group. It follows the format, and to some extent the content, of the original report to provide appropriate background for this work.

There is increasing consensus that addressing climate change is central to the sustainable development, economic growth and poverty reduction agenda. Increasing the resilience to climate change needs to combine both mitigation and adaptation measures. A delay in reducing greenhouse gas (GHG) emissions would significantly constrain opportunities to achieve lower stabilization levels and is likely to increase the risk of more severe climate change impacts. Climate change impacts have the potential to reverse hard-earned development gains and progress towards achieving the Millennium Development Goals.

Low income countries face a dual challenge of increasing the availability of electricity and other commercial fuels needed for economic development and increasing access to the approximately 1.5 billion people who have no access to electricity and are dependent almost wholly on biomass fuels for energy services. In a vast majority of these countries fossil energy, and biomass, play an important role in the residential and commercial sectors.

The need to ramp up modern energy use in low income countries, coupled with the availability of exceptional renewable energy resources, provide a fertile opportunity to help countries develop a renewable energy base that will allow them to leap-frog into a new pattern of energy generation and use. Increased financing is vital to catalyse such a transformative use of renewable energy.

The aim of the Strategic Climate Fund's Program for Scaling up Renewable Energy in Low Income Countries (SREP) is to pilot and demonstrate, as a response to the challenges of climate change, the economic, social and environmental viability of low carbon development pathways in the energy sector by creating new economic opportunities and in particular increasing energy access through the use of renewable energy.

As the foundation of economic growth, the private sector has a significant role to play in promoting renewable energy. In pursuing a strategy that will combine public sector and private sector actions, the SREP seeks to overcome economic and non-economic barriers in order to scale-up private sector investments that will contribute to the objectives of the SREP.

The CIF Administrative Unit informed eligible countries, through the country offices of the Multilateral Development Banks (MDBs), of the SREP program and invited interested governments to submit a brief expression of interest (EOI) to be considered as a pilot country. The EOI received by the CIF Administrative Unit by the deadline were made available to the Expert Group for its consideration. This second phase of consideration of registered countries has been guided by an amended TOR under which there has been a request that the Expert Group focus particularly on those countries that are LDCs, and that opportunities in the MENA region and the Pacific should be evaluated, as well as the potential for regional programs. The Expert Group accepts that these are areas of focus that follow from the selection process undertaken in the initial review in May 2010.

The SREP design document calls for the coordination with the MDBs, through whom the SREP would be implemented. Arrangements were therefore made during the May meetings for the Expert Group to interact with the representatives of the MDBs to discuss, on a regional basis, countries and their potential to be included as a SREP pilot. Though no further contact was made with the MDBs during the second phase of the work, reference was made to the notes taken during these earlier discussions.

In performing both its reviews, the EG has been guided by the SREP design document and Criteria for Selecting Country and Regional Pilots. In addition, for the second phase the EG was provided with the Guidance Note on PPCR Regional Programs[3] which provided particular guidance as regional programs were being considered.

The Criteria for Selecting Country and Regional Pilots stipulates that the following criteria should be used to select the country or regional pilots. The criteria should be considered from two perspectives: (i) a country's willingness to meet the criteria and to achieve the objectives of the SREP, and (ii) a country's potential and capacity to implement a SREP program. These criteria include:

a) Willingness to undertake a program for renewable energy development that could eventually move the country towards a low carbon development path in the energy sector. Conditions needed for such transformation should include:

   i) The existence of, or a willingness to adopt, within an appropriate time frame, supportive regulatory structures and institutions (including agencies to promote/utilize renewable energy). This could include policies and regulations promoting renewable energy, such as feed-in tariffs, tax incentives, subsidies, concessional financing or renewable portfolio standards.

   ii) An enabling regulatory environment that promotes business, such as that contained in the *Doing Business Report*. For the renewable energy sector, this can include policies that support private sector participation, public-private partnerships, and availability of financing for renewable energy technologies. This can also include availability, or willingness to develop, local capacity along the renewable energy supply chain, including manufacturing, training, and operations and maintenance.

   iii) Sector-wide energy development strategies that are open to integrating renewable energy into energy access and supply enhancement programs or targets for large-scale renewable energy deployment. Countries can be assessed on national and local strategies and targets for electrification, and current or projected share of renewables in the energy portfolio.

   iv) Good governance within the sector. An assessment of sector governance might include commercial performance of relevant institutions, pricing and tariff practices, and competitive procurement of goods and services, the transparency and accountability of these practices and the degree to which they are subject to public oversight.

b) Potential capacity for implementation, including a business friendly environment and sufficient institutional capacity. This can include a track record of renewable energy

[3] Climate Investment Funds, Guidance Note on PPCR Regional Programs, April 6, 2009

projects completed or initiated with participation of private sector, previous experience implementing and using renewable energy technologies, capacity for operating and maintaining renewable energy systems. In specific cases, the existence of a track record may not be a strict criterion and a willingness to advance in the area of renewable energy could be sufficient. The government's ability to effectively absorb additional funds should also be considered.

c) Regional balance as well as balance among diverse contexts for scaling up renewable energy, such as urbanization, industrialization, dispersed rural populations and stage of renewable energy development. With respect to regional balance, it is not expected that each of the World Bank regions would be represented in the recommended list of countries, but the Expert Group is requested to recommend countries from at least three different regions.

d) Natural conditions for developing renewable energy.

The initial TOR stated that *"Priority consideration should be given to countries that have submitted an expression of interest to be considered as a pilot. The Expert Group should also give preference, if other considerations are equal, to least developed countries. While regional programs are not seen as a priority, it is agreed that there should be flexibility for the Expert Group to recommend a regional grouping of a small number of states if a strong case can be made from an operational perspective"*.

In the TOR issued when requesting that the EG reconvene it has been suggested that the priority should be given to the LDCs; that there should be an evaluation of the potential for consideration of a country in the MENA region; that there should be an evaluation of the potential for consideration of a country in the Pacific region and that there should be a review for a regional project.

In presenting its recommendations to the SREP Sub-Committee, the Expert Group has been requested to elaborate upon how we incorporated the above criteria and took other considerations into account.

Prior to the meetings in May 2010, Expressions of Interest (EOI) were received from 32 national governments. Overall, though some EOIs were quite informative and detailed, some were very brief. Since the CIF Administrative Unit had requested only brief indications of interest and not full proposals, this is to be expected. These relatively brief submissions then required assessment based on context and the recommendations to be based on additional background material. The EG did not use the EOIs alone for evaluating the comprehensiveness or quality of each country's actual or potential approach under the SREP. This evaluation was based as well on extensive country reports prepared by the MDBs and provided to the EG ahead of its deliberations. The experience of members of the EG, their personal contacts and sources of information all provided important input to the review process.

As the basis for its May evaluation , the EG undertook a systematic process to review the 32 requests for support; 10 from Africa, 9 from East Asia and the Pacific, 4 from Europe and Central Asia, 3 from Latin America and the Caribbean, 2 from the Middle East and North Africa and 4 from South Asia. From this list, six countries were recommended for immediate consideration; three were provided as alternatives. As would be expected this gave some definition to the next layer of countries that could qualify for SREP support and this provided a base from which the second stage review has been undertaken.

Based on the above described methodology and after comparative analyses, the EG recommends the following six additional pilots for the consideration of the SREP Subcommittee (in alphabetical

order), which include the three already proposed (noting the switch of Mongolia and Nepal by the subcommittee) at the subcommittee meeting in June:

Armenia
Liberia
Mongolia
Tanzania
Yemen

and a **South Pacific Regional Program**
covering:

Kiribati
Samoa
Solomon Islands
Tonga
Vanuatu

1.0 INTRODUCTION

An Expert Group (EG) was established by the SREP Sub-Committee (SREP-SC) to advise the Sub-Committee on the selection of country or regional pilots for the SREP. Consistent with the criteria for the selection of country and regional pilots (**Appendix A**), and following the working modalities approved by the Sub-Committee, the Expert Group was invited in May 2010 to recommend six country or regional pilots that meet the criteria and other considerations agreed by the Sub-Committee. The Expert Group was also invited to propose a list of up to three additional pilots to be considered by the Sub-Committee as it sees fit, including in the circumstances where additional funds become available to finance more pilots or should some of the selected pilots prove not to be feasible. Following the Sub-Committee's meeting in June 2010, the EG has been reconvened to consider a potential additional three countries (or regional projects).

In selecting the Expert Group, the SC was guided by the following criteria:

> *"It is important to emphasize that this group is being appointed to serve as an expert advisory group. Therefore, the experts should be internationally recognized senior professionals, acting in their personal capacities, chosen on the basis of their expertise, technical and operational experience. The group as a whole should include a diversity of perspectives, a diverse knowledge of renewable energy technologies, knowledge of engineering and technology, economics and financing, environment and climate change, economic and social development, the private sector, market development, and governance and institutional issues including policy and regulatory frameworks.*
>
> *The Expert Group should be an inter-disciplinary team in order to reflect the wealth of knowledge and experience on climate change and renewable energy practices in developing countries with a focus on areas such as renewable energy policy and regulatory issues, energy technologies, rural and urban electrification, and power systems. The terms of reference and modalities for the Expert Group are described in sections VII and VIII.*
>
> *The Expert Group should include experts from both developed and developing countries, with experience in different regions."*

Through a decision by mail, the SREP Sub-Committee approved the composition of the SREP Expert Group tasked with making recommendations on the selection of country or regional pilots to be financed under the SREP (see **APPENDIX B**: *Criteria for Selecting Expert Group members under the program for Scaling Up Renewable Energy in Low Income Countries)*.

A list of the membership of the Expert Group and their areas of expertise is given in **APPENDIX C.**

Once the *Criteria for Selecting Country and Regional Pilots* had been approved by the SREP Sub-Committee, the CIF Administrative Unit informed eligible countries, through the country offices of the Multilateral Development Banks (MDBs), of the SREP program and invited interested governments to submit a brief Expression of Interest (EOI) to be considered as a pilot country. Countries were invited to submit expression of interest in advance of the working meeting of the Expert Group. At its meeting on March 17th 2010 the SREP Subcommittee set a April 30th 2010 deadline for EOI submissions to be received at the CIF Administrative Unit. All expressions of interest

received by the CIF Administrative Unit which met the deadline were submitted to the Expert Group for its consideration. According to the SREP Design Document, countries submitting an expression of interest would be given priority consideration by the Expert Group when formulating their recommendations for country and regional pilots. In total, 32 EOIs were received before the deadline – see Section 3.5.

HAITI

It should be noted that although Haiti indicated it would be submitting an EOI prior to the official close off date it was not received until after this time. The Expert Group has not considered Haiti in either of the reviews to date. The Co-Chairs of the Sub-Committee indicated, during the time that the Expert Group were making the final deliberations in Washington DC in September, that , at the EG's discretion, there could be an exception made for the late submission by Haiti. However the EG considered that there had been no effective gathering of information nor analysis undertaken for Haiti that was comparable to the attention paid to all other applicants. The EG recognises the exceptional situation in Haiti. It believes that a case could be made to consider their inclusion in future SREP rounds given their current efforts to utilise renewable resources, not only in areas damaged by the earthquake but also in rural regions, as well as the extent of need as evidenced by their current low levels of rural energy access.

The first round of the work of the Expert Group began with a conference call with the CIF Administrative Unit on May 10th. The EG then met May 17th to 21st, 2010 in Washington, D.C. to carry out its tasks which included the development of methodologies, undertaking technical analyses and reviewing countries and regional entities that had expressed an interest in participating in the program. The original Terms of Reference (TOR) set by the SREP Sub-Committee (SREP-SC) also invited the Expert Group (EG) to discuss and take note of the country and regional portfolios of the MDBs (Multi-lateral Development Banks), and to formulate its recommendations to the SREP Sub-Committee on the selection of country or regional pilots.

The Expert Group meeting was assisted by the CIF Administrative Unit during the course of its work. Arrangements were made for the Expert Group to meet with the MDB representatives to discuss, on a regional basis, countries and their potential to be included in the SREP. In particular, the MDBs have shared their experience and knowledge with respect to the criteria for "*willingness to undertake a program for renewable energy development that could eventually move the country towards a low carbon development path in the energy sector, and potential capacity for implementation, including a business friendly environment and sufficient institutional capacity*"

The EG has reconvened based on the invitation from the Subcommittee, on the basis of the TOR set by the SREP Sub-Committee (see APPENDIX D). The co-chairs held two initial calls with the CIF Administrative Unit to receive guidance on the process under the follow on TOR, and the full group subsequently held two conference calls (2nd and 9th September 2010) to address the approach to the second phase of the work. On 16th and 17th September, with the co-chairs and rapporteur together in Washington DC, a third and fourth call were held to reach a final decision on the recommendation of additional projects to the Subcommittee.

In presenting its recommendations to the SREP Sub-Committee, the Expert Group was requested to elaborate upon how it has taken the above criteria and other considerations into account in preparing its recommendations for country or regional pilots. This approach has been followed in the second phase of the EG's work. It was requested that the Expert Group report should include, inter alia, information on:

a) methodology and analysis leading to the group's recommendations regarding proposed country and regional pilots;

b) an assessment of key issues and challenges for the recommended pilots; and
c) conclusions and recommended list of country or regional pilots that meet the agreed number, criteria and other considerations agreed by the Sub-Committee.

Through the conference calls and subsequent discussion amongst the co-chairs and rapporteur, EG members agreed on the recommendations to be submitted to the SREP Sub-Committee. The report with recommendations of the Expert Group was submitted to the CIF Administrative Unit on October 5th 2010 for transmittal to the SREP Sub-Committee. The Co-Chairs of the Expert Group have been invited to present the report to the Sub-Committee and to respond to questions from its members. The report and recommendations of this second round should be made publicly available at the same time as it is submitted to the SREP Sub Committee for consideration.

After a short introduction and background based on the SREP Design document, Guidance from the SREP Sub-Committee on the establishment of the Expert Group, and the composition of the EG and its Terms of Reference, this report outlines in some detail the methodology adopted by the EG and procedures for the analysis undertaken in proposing the Pilots. The selection of three additional pilot projects is presented in Section 4 of this report.

2.0 BACKGROUND

As outlined in the first report to the Subcommittee, the aim of the Strategic Climate Fund's Program for Scaling up Renewable Energy in Low Income Countries (SREP) is to pilot and demonstrate, as a response to the challenges of climate change, 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.

As the foundation of economic growth, the private sector has a significant role to play in promoting renewable energy. In pursuing a strategy that will combine public sector and private sector actions, the SREP should seek to overcome economic and non-economic barriers in order to scale-up private sector investments contributing to the objectives of the SREP.

SREP should assist low income countries to initiate a process leading towards transformational change to low carbon energy pathways by exploiting their renewable energy potential in place of fossil-based energy supply and inefficient use of biomass.

Transformational change could occur through improved market and financial conditions and increased investor confidence. It leads to greater public and private sector investments in renewable energy necessary for large scale replication. This requires a better understanding of existing impediments and a focus on concrete actions to remove barriers. SREP should demonstrate that renewable energy provides a feasible pathway for economic growth and development.

SREP should provide experience and lessons in scaling up renewable energy, should promote sharing of lessons at the national, regional and international levels, and should increase public awareness of the opportunities for renewable energy.

SREP should also lead to economic, social and environmental co-benefits. Using renewable energy in place of conventional fuels could simultaneously address local air pollution reductions while

reducing greenhouse gas emissions, contributing to climate resilience, and enhancing energy security as well as addressing energy access issues at the country level.

SREP financing should be blended with co-financing from multilateral development bank lending programs and other national and international, public and private funding to invest in renewable energy technologies for electricity use and thermal energy generation in low income countries.

It should be noted that the guidelines outlined in the revised TOR, issued in reconvening the Expert Group, particularly the focus on LDCs have altered the influence of some these points during the second phase evaluation.

3.0 METHODOLOGICAL APPROACH AND ANALYTICAL PROCEDURE

3.1 General methodology

At its meeting on March 17th 2010, the SREP Sub-Committee approved the criteria for the selection of country and regional pilots as described in document *Criteria for Selecting Country and Regional Pilots under the Program for Scaling Up Renewable Energy in Low Income Countries* and requested the Expert Group to apply the criteria in formulating their recommendations of country and regional pilots. The Expert Group used these criteria in reaching its first recommendations and believed that for consistency that they should be the basis for this second phase of work.

In performing its task, the EG was guided by Paragraph 18 of the SREP selection criteria. It was noted that in reaching its recommendations on the selection of country and regional pilots, the EG was to take into account (i) a country's willingness to meet the criteria and to achieve the objectives of the SREP, and (ii) a country's potential and capacity to implement a SREP program. The selection criteria included:

- Willingness to undertake a program for renewable energy development that could eventually move the country towards a low carbon development path in the energy sector. Conditions needed for such transformation should include:

  i) The existence of, or a willingness to adopt, within an appropriate time frame, supportive regulatory structures and institutions (including agencies to promote/utilize renewable energy). This could include policies and regulations promoting renewable energy, such as feed-in tariffs, tax incentives, subsidies, concessional financing or renewable portfolio standards.

  ii) An enabling regulatory environment that promotes business, such as that contained in the *Doing Business Report*. For the renewable energy sector, this can include policies that support private sector participation, public-private partnerships, and availability of financing for renewable energy technologies. This can also include availability, or willingness to develop, local capacity along the renewable energy supply chain, including manufacturing, training, and operations and maintenance.

  iii) Sector-wide energy development strategies that are open to integrating renewable energy into energy access and supply enhancement programs or targets for large-scale renewable energy deployment. Countries can be assessed on national and local strategies and targets for electrification, and current or projected share of renewables in the energy portfolio.

  iv) Good governance within the sector. An assessment of sector governance might include commercial performance of relevant institutions, pricing and tariff practices, and competitive procurement of goods and services, the transparency and accountability of these practices and the degree to which they are subject to public oversight.

- Potential capacity for implementation, including a business friendly environment and sufficient institutional capacity. This can include a track record of renewable energy projects completed or initiated with participation of private sector, previous experience

implementing and using renewable energy technologies, capacity for operating and maintaining renewable energy systems. In specific cases, the existence of a track record may not be a strict criterion and a willingness to advance in the area of renewable energy could be sufficient. The government's ability to effectively absorb additional funds should also be considered.

- Regional balance as well as balance among diverse contexts for scaling up renewable energy, such as urbanization, industrialization, dispersed rural populations and stage of renewable energy development. With respect to regional balance, it is not expected that each of the World Bank regions would be represented in the recommended list of countries, but the Expert Group is requested to recommend countries from at least three different regions.

- Natural conditions for developing renewable energy.

In reconvening the EG in August 2010, the Sub-Committee's guidance for the reconsideration of the alternate pilots included the following:

- Up to six alternate pilots, which do not have to be ranked in order of preference.
- These pilots should include the three recommended pilots from the original report - Armenia, Liberia and Mongolia.
- Priority should be given to LDCs and low income countries identified by the OECD.
- The expert group should evaluate potential for consideration of a country in the MENA region.
- The expert group should evaluate potential for consideration of a country in the Pacific region.
- The expert group should review the potential for a regional pilot (which could be in MENA or the Pacific, or in principle elsewhere).

3.2 Working Modalities

Following the reconvening of the EG teleconferences were held on the 2nd and 9th of September, 2010 with a further two calls with the co-chairs and rapporteur in Washington DC on 16th and 17th September, 2010. The discussions on these calls provided the opportunity to:

a) Consider the new TOR provided by the CIF Admin Unit following the Subcommittee's request that three further alternate pilots be recommended;

b) Agree the list of LDC countries that would be the main focus of this second phase of the EG work;

c) Consider the outcomes of the evaluations undertaken in the first phase of the work and how these lead into selection of three additional pilots; review what additional information, if any, should be gathered for this phase of the work.

d) Provide recommendation for three further alternates, to be presented both in a written supplemental report, and by the co-chairs at the next subcommittee meeting in November 2010.

3.3 Background Material

Based upon the request of the Expert Group during preparations for the first phase of the work, the CIF Admin Unit had provided, with the support of the MDB Committee, analytical background material on each of the countries that submitted an EOI in the following categories:

i) **Basic Information**

a. Population; rural-urban distribution
b. Geographical features
c. Natural resource base (forests, agriculture, water)
d. Economic indicators and trends (per capita income, GDP, national debt, etc.)
e. Trade (imports, exports) (including net burden due to energy imports)
f. International credit rating (aid effectiveness, ease of investment)

ii) **GHG Emissions / Climate Change Policy**
a. Emission levels
b. Government policies on Climate Change

iii) **Energy Sector**
a. General description – Overall issues, level of access, role of energy in the national economy
b. Energy mix

iv) **Electricity**
a. Generation energy mix and consumption
b. Governance structures and institutional capacity (Policy / Regulation / Operation)
c. Regulatory Frameworks and policies
d. Pricing / incentives
e. Planning
f. Sector finances
g. Demand estimation
h. Private sector participation

v) **Renewable Energy Sector**
a. Current contribution of RE to energy mix, if any (electricity and non-electricity)
b. Renewable energy resource assessment (wind, solar, small hydro, biomass, geothermal)
c. Governance structures and institutional capacity
d. Government policies and programs and incentive schemes
e. Private sector and NGO involvement (technical assistance, system assembly, investment in deployment, maintenance, etc.)
f. Implementation performance of RE programs

vi) **Donor Assistance in Energy Sector**
a. Different donor programs in sub-sectors in energy sector (current and planned)
b. Programs of Multilateral Development Banks
c. Types of assistance (power sector reform, technology diffusion, energy infrastructure, etc.)

The Expert Group was also able to draw upon reference materials brought into the discussions by Expert Group members themselves, ranging from analyses of the status of renewable energy, the energy access situation in developing countries and assessments on the ease of doing business in the countries under review.

As noted in the report on first phase, in May the Expert Group convened meetings with the MDBs to discuss, on a regional basis, the potential and capacities of countries and regions to be included in the SREP. In particular, the MDBs shared their experience and knowledge with respect to the criteria for country preparedness and ability – institutional or otherwise – to undertake SREP pilots as envisaged. This information was again considered during the deliberations in the second phase of the work.

In addition the Expert Group had a brief meeting in May with a representative from the PPCR that provided pertinent feedback on the capacity of governments to respond to the preparation phase (for SREP the investment plan preparations) which will be the next step after the Sub Committee approves the country selection for the SREP. All of these discussions were again of value to the EG as it undertook this second phase review.

During this second phase members of the EG sought specific input on recent activities within the

Pacific, had access to additional information provided by the government of Yemen and sought background from bilateral agencies and individuals involved in a number of projects that have been undertaken in Southern Africa and the Pacific. As noted, the EG was also provided with the Guidance Notes on PPCR Regional Programs and this offered valuable guidance when considering regional programs.

3.4 Review of Background Material

Core Task of the EG

Following the request that the EG reconvene, the CIF Administrative Unit forwarded copies of all the background material that had been made available for the May 2010 meetings to each of the EG members in late August. Through the teleconference discussions (see APPENDIX E) agreement was reached on the focal countries, based on the request that attention be directed to the LDC nations that had submitted EOIs originally. This list was based on the DAC List of ODA Recipients (classifying LDCs, LICs and other low income countries, effective for reporting on 2009 and 2010 flows) provided by the CIF Administrative Unit. A series of summary notes prepared during the first phase of the work for internal use were circulated amongst the EG to provide a starting point for discussions.

Over the course of four teleconference calls agreement was reached on the recommendations and a draft report was prepared and circulated to the EG for their agreement before submission to the CIF Administrative Unit for final comments. A representative of the CIF Administrative Unit was present for all of the teleconferences and available during the preparation of the draft report in Washington DC on 16th & 17th September.

> *It should be noted that, as a result of the process of the initial review and selection of six recommended countries with three additional countries in reserve, in this second phase of the work there were some implicit limitations on the number of remaining countries that were to be considered, restricted initially to the LDC and LIC countries. This in itself provided some challenges in that for many of these countries their capacity to absorb significant funds and to achieve transformational change, as anticipated under the SREP mandate, had been considered limited by the EG in the first round of analyses.*

Note on Expression of Interests (EOIs) and Available Background Information

These notes draw on those provided in the report to the Subcommittee on the first phase of the work. Overall, though some EOIs were quite informative and detailed, others were very brief. Because the CIF Administrative Unit had requested only brief indications of interest and not full proposals, the submissions needed to be considered in context. While the signatories and content of the EOIs were noted, the EOIs were not the basis on which assessments were undertaken. In some cases the information provided with the EOI gave more current background and this was valuable given that in a number of instances the data collated by the CIF Administrative Unit was inevitably dated. As noted, following the Sub-Committee meeting, additional information was submitted by the Government of Yemen and the EG considered that it was appropriate that this be included in the present review. Additional information was sought through EG members on specific questions related to the current status and past experiences within a number of the countries being reviewed, though no additional information was submitted by governments other than that from Yemen.

In undertaking its assessments of the suitability of specific countries for participation in the SREP programs, the EG would like it noted that its recommendations have been made without access to any investment plans from those lodging an EOI. While the procedures being followed under the SREP preparations are acknowledged, the recommendations are made based on some implicit assumptions as to how SREP funds might be applied. While the actual utilisation of funds will be

subject to the preparation of investment plans that reflect the needs identified by individual governments, and will require approval by the SREP Sub Committee, caution should be exercised to identify any significant divergence from the assumptions upon which the EG's recommendations have been formulated.

3.5 The Review Process

Country List

On the basis that the focus was to begin with consideration of LDC and LIC countries, the original list of countries that provided EOIs was modified as shown below to include;

Africa	*South Pacific*	*Europe & Central Asia*	*East Asia*	*MENA*	*South Asia*
• Democratic Republic of Congo • Ghana • Malawi • Rwanda • Tanzania • Zambia	• Kiribati • Samoa • Solomon Islands • Timor-Leste • Vanuatu	• Tajikistan	• Cambodia • Lao PR	• Djibouti • Yemen	• Bangladesh

Country Reviews

In reviewing each country the EG had the opportunity to reflect on the analyses that had been made during the initial evaluations. The key points of those analyses followed a number of steps:

- The underlying willingness of each applicant was assumed, given that they had provided an EOI, though the position / seniority of the signatory of the EOI was noted.
- The existing energy situation in each country was reviewed to provide a setting for consideration of the contribution that renewable energy could provide or is already providing. Particular note was taken of the level of rural and urban access to affordable energy and the current use of traditional biomass and its impact on health.
- The specific renewable energy strategies and policies that have been implemented were reviewed to determine:
    - Whether supporting laws have been promulgated and if so how long have they been in effect
    - What targets, if any have been set
    - Has an independent energy regulator been established
    - Whether programs exist to promote access to energy, particularly off grid
    - What has been achieved under existing policies
- The market conditions for renewable energy development were reviewed to determine:
    - The strength of public institutions engaged in renewable energy promotion and implementation
    - The presence, strength and capacity of the private sector
    - The presence of incentives, preferential tariffs for renewable energy

    - The strength of local financial institutions and their engagement in the RE market
    - Current and planned MDB or donor programs focused on renewable energy
- The existing renewable energy developments were reviewed to gauge
    - Their level of success
    - The nature and scale of completed projects
    - The track record that exists in the RE markets, both on grid and off grid and whether there is confidence that this can be continued / replicated
- The specific impacts of possible SREP support were considered;
    - The ability of the country to effectively absorb a significant funding contribution under SREP
    - The potential market changes that SREP could engender
    - The likelihood that the SREP contribution could provide a transformational change in the market
    - The time required for any such transformation change
    - The impact that SREP support could have in building the private sector engagement in the market.

Teleconference Discussions and Deliberations

With access to all previous data and a copy of notes and internal considerations summarised from the May meetings, the members of the EG held four teleconferences. After agreeing the countries that were to be the main focus of discussion, the countries in each of the regional groupings, outlined above, were considered in turn. This led to a focus on opportunities in the MENA region, the South Pacific and eastern and southern Africa, while recognising opportunities existing in east, south and central Asia.

Each region was considered in turn. What was noted was that the differentiation between the countries being considered in this second round of analysis was less marked than amongst those selected in the first review stage. It is the nature of many LDCs that they have limited capacity in the area of energy, and particularly renewable energy. While policies are emerging to support the development of indigenous, renewable resources, much of the past effort has been of a technical advisory nature (barrier removal), with often relatively limited levels of actual project implementation. Within the SREP mandate this makes it challenging to determine where there is a real capacity to absorb significant funds and that these funds would lead to a transformational change.

The EG felt it of value to note that their deliberations highlighted a number of opportunities where quite limited amounts of funding could be employed in what are clearly the early phases of the emergence of national renewable programmes. That these would lead to near term transformational changes seems unlikely; that they could provide sensible and practical pilots for national or regional interventions seemed much more realistic. A case in point was the opportunity to assist Malawi to extend its consideration of mini-grids. This is seen as an appropriate and timely option for Malawi to accelerate the delivery of electricity to rural communities; it is also seen as a potential pilot to try and address the recognised tensions between the interests (and influence) of national, vertically integrated utilities and the need to offer access to electricity to those currently outside the utilities areas of interest. It was not however seen as an immediate fit with the criteria under the existing SREP mandate, but perhaps a consideration as the SREP evolves in future. There was discussion that a regional project could also be considered (in future) to provide some scale and allow an opportunity for the structured sharing of experiences.

While it is believed that Tanzania and Yemen offer the potential to meet the criteria established under the SREP mandate, there was some caution about the additive value of SREP funds in Tanzania where there appears to be considerable donor interest (though the level of delivered funds remains unclear); in Yemen it was noted that the EG would be reluctant to see a disproportionate part of any SREP funds utilised in a single project (a wind project in this case), where the EG has not been able to assess the technical specifications of that project, or its relative contribution to facilitating energy access for specific communities. In both countries, as with others chosen earlier, the expectation is that the SREP resources would be used to accelerate the uptake of a mix of renewable technologies and that access to energy in peri-urban and rural areas would receive due consideration.

In considering the South Pacific countries, the small (but often widely dispersed) population of many of them, the generally high level of electrification (although predominantly with fossil based generation) reflecting concentrations of population in and around city centres, the very small demand in most countries and a serious issue with energy security led, to the recommendation that a regional project be considered. The question of the level of regional collaboration and the presence of a central agency that could effectively coordinate any such regional project was explored in some depth (see notes under 4.4). Recent cooperation, led by the Pacific Energy Ministers, suggests that the region has perhaps a unique opportunity for a regional project. Although Tonga is considered a Low Middle Income country it was considered that its current focus on renewables and recent drafting of an "Energy Roadmap" could offer valuable experience to be shared amongst all in the region and hence the recommendation that Tonga be a party to the regional project.

4.0 SELECTION OF COUNTRIES

4.1 Terms of Reference

Under the Terms of Reference for the Expert Group it is required that they identify up to six pilots to be developed under SREP, together with three additional countries to be considered by the Sub-Committee should additional funds become available to finance additional pilots or if some of the selected pilots prove not to feasible.

4.2 Considerations in Making Final Selection

In determining those countries that should be recommended for inclusion as the first SREP pilots, the underlying criteria can be summarised as follows:

- The existence of, or a willingness to adopt within an appropriate time frame, supportive regulatory structures and institutions.
- An enabling regulatory environment that promotes business, that supports private sector participation, public-private partnerships, and availability of financing for renewable energy technologies.
- Sector-wide energy development strategies that are open to integrating renewable energy into energy access and supply enhancement programs or targets for large-scale renewable energy deployment.
- Good governance within the sector.
- Potential capacity for implementation, including a business friendly environment and sufficient institutional capacity.

- The presence of suitable renewable resources

All of these criteria (as outlined above and included in more detail in *the Criteria for Selecting Country and Regional Pilots under SREP*) were taken into consideration in selecting the countries recommended below. It is of importance however to note that there was naturally a difference in emphasis on some criteria as each country was considered, reflecting their current situation. This emphasis is reflected in the notes on each of the selected countries.

4.3 Recommended Country List

Additional Recommended Country	***Notes***
Armenia (included on first review)	Attractive market conditions for renewables; clear policies and regulatory framework; heavy dependence on imported fossil fuels; good resources; potential model for others within CARAC
Liberia (included on first review)	Post conflict environment; fresh start for establishment of energy supply / choice of resources; ability to influence policy from outset; significant and urgent need for electricity supply
Mongolia (Transferred to alternate list after Sub-Committee review)	RE policies in place; considerable off grid potential for solar PV and wind and local manufacturing and production; emerging large wind industry; private sector engagement; local financial institutions involved with micro-finance and potential to build activity if risk mitigation facilities developed. Example of RE development in country with extreme climate.
Tanzania	A recognised background in renewable energy supported by legislation and a strong commitment to further develop its RE resources. Though Tanzania is well supported by Donor funding it appears that little of this is being directed into RE project implementation.
Yemen	A national strategy for renewable energy and energy efficiency has been established. Though the regulatory environment is still evolving, efforts are being directed at encouraging development of wind, solar and potentially geothermal resources. Deregulation of the electricity sector is underway to open the market for private sector participation.
Pacific Regional Project Kiribati; Samoa; Solomon Islands; Tonga; Vanuatu	Countries have benefited from on-going programmes, predominantly focused on technical assistance, to establish national policies and capabilities within the energy sector. Energy security is a critical issue for all and is being addressed through regional efforts led by the Pacific Ministers of Energy. Collaborative programmes have allowed the sharing of experience amongst these countries and the SREP provides an opportunity to move to implementation, building on current commitments to promote RE. Although Tonga is not an LDC it is considered that its inclusion in the regional program is important in that Tonga has made significant steps towards building its RE activities as part of its recent Energy Road Map , experience that will be valuable for the other countries within this program.

4.4 Specific Considerations

In considering the opportunities that exist in each of the recommended countries and for the regional project, there are a number of issues which the EG believes should be highlighted to assist in ensuring the success of the SREP. These include:

Access to energy

In assessing the opportunities within most of the countries reviewed and recommended, the EG has had a strong focus on the ability to resolve the issue of access to energy, and in particular the off grid potential. In general the opportunity for larger grid connected renewables are limited in the countries recommended. Where they do exist, such as the wind potential in Yemen, the recommendation is that only a limited portion of SREP funds should go to such a project and that the major focus should be directed at delivering energy to peri-urban and rural areas currently beyond the reach of the grid, or projects where a local grid and/or central grid interconnection could also service local energy needs . The EG would not support an approach where a significant portion of funds were directed at one single project / technology.

Pacific Region Program Design

There is considerable current activity within the Pacific to develop common strategies to address the pressing needs for energy security. Acknowledging that Pacific economies (and those of many small island states) are the most vulnerable in the world to rising oil prices, regional energy Ministers have, in their meeting of April 2009, stressed the urgent need to reduce this vulnerability through mainstreaming energy security into national planning and budgetary processes; improving energy efficiency and conservation; adopting financially viable renewable energy sources; and, where appropriate, taking regional and sub-regional approaches to petroleum procurement and coordination of regional services. This has led to *A Framework for Action on Energy Security in the Pacific* that has been presented in its final draft[4] and while a key focus is on the most cost effective (collective) access to petroleum based fuels which dominate the sector, this is being paralleled by increasing efforts to identify and promote the expanded use of indigenous / renewable energy resources.

In researching the opportunity to consider a regional project in the Pacific efforts have been made to understand the programmes that have been executed in that region to date and to learn from the design of those considered most successful. The regional programmes to date have largely provided technical assistance, as opposed to financing hardware / equipment installations, and have had modest budgets.

One example that appears to have been successful is the Pacific Islands Renewable Energy Policy and Strategic Action Planning (PIEPSAP), funded by the Danish Government under the UNDP Thematic Trust Fund between 2004 and 2008. . A summary of the perceived reasons for its success are as follows:

> *Its focus was to develop practical energy policies and action plans, and PIEPSAP has been judged by Pacific Island country officials and power utilities as highly relevant to national needs and routinely responsive to changing country needs. Among the reasons given are the following: i) PIEPSAP had a wide menu of options, from which individual countries could select assistance that suited their needs. This built-in flexibility in design allowed PIEPSAP to respond quickly to changing national priorities and needs; ii) the project worked directly with governments, power utilities and others, according to the need; iii) the project was embedded within the energy section of a Pacific regional organization, the Secretariat of the Pacific*

[4] Towards an energy secure Pacific - A Framework for Action on Energy Security in the Pacific, June 2010

Geoscience Commission (SOPAC), and could tap into wider SOPAC experience and skills; iv) project staff did not push pre-ordained solutions, but listened well to country views; v) the service was demand-driven and practical; vi) there was genuine 'leveraging' with PIEPSAP advice linked directly to, or followed up by, related assistance from the ADB, EC, WB and others; and vii) international staff used personal networks to mobilize additional funding from their home countries. The project essentially operated as a consulting facility specialized in the field of energy policy, planning, energy sector management and project development. PIEPSAP's approach was constantly fine-tuned during implementation in response to feedback from national governments and development partners. While the first two years of project implementation was essentially a series of unconnected activities in response to country requests, horizontal and vertical integration was mostly achieved during the last two years of the project. Positive feedback from the project's beneficiaries and development partners allowed to vertically integrating policy development, strategic planning, improvement of energy sector management (asset management), regulation and investment. With respect to horizontal integration, considerable efficiency gains were achieved through piloting model activities and replicating these models in other countries. Examples for such integration include tariff studies performed as a model in Pohnpei, Federate States of Micronesia (FSM)). The power utilities of the Solomon Islands and Tuvalu subsequently benefited from the model and PIEPSAP assisted with tariff studies whose methodologies closely followed the FSM model. Similar experiences were made with utility asset management tools (MIS/GIS) and renewable energy resource assessments;

- *Active information sharing: such increase the value of activities. PIEPSAP continuously offered cooperation, co-ordination and exchange of information with all regional and national stakeholders in the energy sector. Transparency and accountability are good guiding principles to ensure that national needs are being fulfilled while the regional aspect of sharing experiences and insights are maintained. Thus, PIEPSAP as a matter of principle shared all its outputs, reports, studies, concepts plans and strategies via modern communication technology (it is self-evident that only information that is approved by the organisation in question should be published).*

In recommending a regional project the EG recognises that such an approach requires considerable planning and advance work to ensure that the national needs of those involved will be met without large institutional and transactions costs consuming significant portions of the available budget.

The EG was also provided with a background paper on the CIF issued Guidance Note on PPCR Regional Programmes (See Appendix G) and this provides some additional recommendations in noting:

A regional PPCR pilot is likely to provide significant benefits over a single-country/country-by-country approach in cases where a single country lacks adequate level of resources, knowledge, and capacity (see below) and/or where opportunities for key adaptive measures may only be realized through regional or sub-regional cooperation on the management of trans-boundary resources. It is expected that this regional approach will optimize the efficient use of PPCR resources within the region, taking into account and building on existing resources and activities at country as well as at regional level.

And

Where possible, regional activities should build on existing collaboration on climate sensitive development issues and/or on prior involvement in regional programs supported through MDBs or other development partners. This will contribute to greater sustainability beyond the

timeframe of PPCR support. Depending on the degree of ongoing regional collaboration, capacities, and degree of regional political support of an existing regional institution, the strategic approach and actions on a regional level can take a range of shapes.

The EG anticipates that there will be a number of challenges in establishing a regional programme, in particular identifying a regional organisation that can provide effective design, development and management of such a project. The agreement that the lead agency role in the Energy Sector has been mandated to the Secretariat of the Pacific Community (SPC) by the Pacific Energy Ministers, the joint meeting of the Governing bodies of SOPAC, SPREP and SPC, the Forum Leaders and approved by the SPC Conference in October 2009, provides a positive focus for regional energy programmes.

Given the relatively small economies (and population) of the Pacific Island countries, their common concerns over energy security and supply, the significant impact of fuel costs on their national budgets and the growing collaboration to address these issues and the opportunities for the use of indigenous / renewable energy resources, the EG believes that SREP could offer an appropriate level of support to move forward into a phase of implementation within these countries. It has been recognised that to date the focus has been on the technical assistance and institutional aspects of energy delivery and that collectively these efforts require (significant) funding to move forward with physical implementation of projects.

It is recommended that, although Tonga is not an LDC nation, Tonga should be included within the regional program. Tonga has undertaken a focused review of its energy needs and produced an Energy Road Map that can provide valuable guidance for others in the region. Tonga's inclusion also offers the opportunity to build the scale of the program, given the noted relatively small energy markets within all of the countries in the region.

The Role and Vulnerability of the Private Sector

There is no question that the private sector has a critical role to play in the development of renewable resources, whether grid connected or off grid. For example, the real growth of the solar PV markets within the emerging economies is testament to the importance of the private sector. However, with a few exceptions, these companies involved are generally small and often have limited financial resources. The EG would be concerned if the SREP funding created market distortions through large scale (non-commercial) public sector involvement that undermined the growth of the existing private sector participants. Rather the expectation is that the additional financing would be used constructively to expand the market through more effective engagement of the existing entities and an improvement in market access to finance, whether this is for service providers or end users.

5.0 SUMMARY INFORMATION ON RECOMMENDED COUNTRIES / REGIONAL PROJECTS

What follows is a brief summary on each of the recommended countries. It should be noted that a significant volume of background information was provided and reviewed (as described in Section 3.3) and it is not the intention to reproduce this material, more to provide a short background setting for each country recommended.

5.1 Armenia – recommended in Phase One

Brief Country Statistics

Population (millions)	Access to electricity (%)			Target for electrification access		% population using modern fuel	% population relying on solid fuel using cook stoves	Annual deaths attributed to solid fuel use
	National	Urban	Rural	%	Year			
3.24	100	100	100			100		

Policy and Regulatory Environment

Armenia is highly dependent on imported fossil fuel resources. The governance structure in the energy sector includes the Ministry of Energy and Natural Resources, the Public Services Regulatory Commission, and several levels of participants at the level of generation, transmission and distribution as well as the associated dispatch services.

Renewable Energy has been specified as one of the priorities in several official documents of the Republic of Armenia, which include: the Energy Law of the Republic of Armenia (adopted in 2001), the Law on Energy Saving and Renewable Energy (2004), The Energy Sector Development Strategy (June 2005), The National Plan on Energy Savings and Renewable Energy (2007), The Action Plan of the Ministry of Energy and Natural Resources (2007), and The Public Services Regulatory Commission definition on sale tariffs for electricity delivered from renewable energy generating plants.

The country has a target of 30% renewable energy contribution to electricity generation by 2025, a figure that can be expanded to a higher percentage by incorporating the development of diversified renewable energy resources like geothermal, biogas and wind energy on top of the hydroelectric development. The existing planning documents call for important targets related to the introduction of up to 635 MW of renewable energy capacity additions including up to 130 MW of small hydro and 300 MW of wind generation.

Status of Renewable Energy

Renewable energy accounts for 1,049 MW, representing 32% of the electricity mix in the country. The existing renewable energy plants are all hydro, with large hydro representing 960 MW and the remainder small scale hydro.

The expected contribution of new hydro facilities in the country includes up to 301 MW of large hydro and up to 299 MW of small hydro (69 plants under construction and a further 115 plants under initial development).

There is a small wind plant operating in the country with a capacity of 2.6 MW. A wind energy atlas of the country has been produced, indicating that a potential of up to 500 MW exists. Wind monitoring has confirmed at least 195 MW of wind power plant development in 4 areas of the

country and a further potential of 215 MW has been identified in another 3 areas (though not confirmed via detailed monitoring).

There are opportunities for geothermal development in the country with identified activity in at least one site with a capacity of 25-50 MW. Biomass potential has been identified as well as solar inventories have been carried out.

Opportunities

Taking into account that Armenia has reached 100% electricity coverage, most of the identified opportunities for renewable energy lie within the scope of contribution to attaining a low carbon development in the energy sector, a factor that is very important for a fossil fuel dependent country. There are opportunities also in introducing and scaling up distributed generation opportunities from solar and biomass cogeneration, which together with the hydro and wind development can assist to demonstrate the possibility of increasing resilience to climate change in the energy sector via the introduction of diversity in an existing (fossil fuel dependent) grid.

Public and Private Capacity for SREP implementation

Armenia has created and supported an enabling environment for the deployment of renewable energies in the country over the last few years. The energy policy, sector reforms and enacted regulations in the area of purchasing tariffs as well as procedures for the signing of PPA´s provide an enabling environment for renewable energy developments. There is an emerging consolidation of private sector energy developers willing to participate in the development of power projects. There are existing funding structures for the financing of renewable energy (German-Armenian Fund, revolving lending mechanisms and renewable energy credit programs by Ameriabank), but there are perceived financing gap needs that can be assisted with the types of funds available under the CIF funding. Armenia indicators in terms of the "Doing Business 2009" indicate that the country ranks at number 44 in the world, which coupled with the already existence of a good number of independent power producers, indicates that the business environment for the scaling up of renewable energy is certainly becoming mature for the participation of the private sector and therefore at a good stage to achieve a transformational result in the energy situation of the country.

Other Considerations

Scaling up support for the development of a low carbon economy in Armenia through the incorporation of more diverse renewable energy forms can serve important regional objectives for the dissemination of renewable energy sector regulations, business models and exchange of important lessons learned that can contribute to fostering agendas for other countries in the Central Asia Region.

5.2 Liberia - recommended in Phase One

Brief Country Statistics

Population (millions)	Access to electricity (%)			Target for electrification access		% population using modern fuel	% population relying on solid fuel using cook stoves	Annual deaths attributed to solid fuel use
	National	Urban	Rural	%	Year			
3.48	3.3	7	1	10	2011	0	0	3900

Policy and Regulatory Environment

The two wars of independence 1989 to 1996 and 1999 to 2003 have left little of the country's infrastructure intact. Until recently efforts were underway to provide a 20MW grid to power part of

the Capital, the first grid power in 15 years before mid 2006. However, under the leadership of the first African woman president, policies have been formulated to guide the flow of finance from donors to rebuild the country. Liberia has an Energy Policy adopted in 2009 which sets out access goals by 2015 and emissions reduction targets aiming for neutrality by 2050.

The Government of Liberia has further intensified its commitment to the provision of energy services through the adoption of the National Energy Policy (NEP) in 2009, which calls for universal and sustainable access to affordable and reliable energy supplies in order to foster the economic, political, and social development of Liberia. The four pillars of the NEP are (i) universal energy access including the development of an energy master plan; (ii) least-cost production of energy and protection of most vulnerable households; (iii) adopting international best practices in the electricity sector; and (iv)accelerating public and private partnership in the sector.

Renewable energy has been addressed in a recent REEEP funded policy research paper. This states that "Liberia, with most of its soil stripped of fossil fuel power and heat, must be one of the planet's strongest candidates for an economy powered using major renewable energy resources."

The development of a Renewable Energy Policy is now part of the country's plans. The strategy is to establish PPPs that could locate investment in the renewable energy sector with the stated effect of using indigenous energy sources to reduce the balance of payment impacts of importing fuel.

Liberia has a small population of 3.4 million and currently an inexperienced but as yet unencumbered governance at a higher management level. Vested interests that may have a policy implementation retarding effect have yet to be rooted. The mid level of the civil service remains.

Status of Renewable Energy

Liberia had no installed capacity from renewable energy in 2003, with the hydro plant having been destroyed during the war. There is an estimated 100MW of hydro capacity, and there are interests in harnessing biomass that is readily available (including agricultural residues), for power generation. An estimated 90% of the population provide for their thermal energy services through the use of charcoal. There are some traders using 1-5kW electricity generators.

Opportunities

There is clearly an opportunity to harness both hydro and biomass for the generation of power for grid supply. Many of the vested interests of fossil fuel that may obstruct the use of renewable energy use are absent, leaving opportunities for clean energy generation. The clean slate, eagerness to rebuild the country, enabling policies, all provide a role for technological leapfrogging in grid and off-grid clean technology applications particularly if linked to livelihood activities. Wind along the coast, solar PV and solar thermal all have potential applications and are under consideration.

Public and Private Capacity for SREP implementation

In general, there is little capacity remaining after years of war with many of the educated and experienced citizens having sought refuge outside of the country. The Government is attempting to attract some of the human capacity back to their country of origin, but this is only likely to occur once opportunities in the public and private sector appear in the economy. If SREP were to engage in Liberia, the capacity and skills required to implement and manage such a programme would have to be brought in a turn-key arrangement. In general, capacity follows resources which follow leadership and there appears to be some leadership in the energy sector.

Some work has been undertaken by bilateral donors to establish the groundwork for both a legal and institutional framework for the development of renewable energy capacity in Liberia.

Special considerations

While Liberia is not an obvious candidate for SREP funding starting from such a low base (and being one of the Least Developed Countries), the opportunity to start afresh with clean energy is

appealing. This is in part to avoid the potential for lock-in to a fossil fueled economy as is the case with many of its neighbours. Scaling-up from almost nothing is still scaling-up, but an opportunity exists to make a large local and regional impact and build an energy economy around renewable biomass which would provide livelihood and gender development opportunities. The establishment of a renewable energy policy and the goal of carbon neutrality, provide an ambitious target that deserves support in a country that has the will, if not the resources, to achieve them.

There remains an opportunity to blend SREP resources with other multi-lateral and bi-lateral assistance supporting the implementation of the new energy policy agenda. Later this could be extended to private investors.

5.3 Mongolia – transferred to alternate list by SREP Subcommittee deliberations in June 2010

Brief Country Statistics

Population (millions)	Access to electricity (%)			Target for electrification access		% population using modern fuel	% population relying on solid fuel using cook stoves	Annual deaths attributed to solid fuel use
	National	Urban	Rural	%	Year			
2.76	67	90	36	100	2020	23.2	99.1	300

Policy and Regulatory Environment

Mongolia has an area of 1,565,000 sq km and a population of 2.6 million, of which 43 % live in rural areas and are mainly livestock herders. 36 % of the rural population and 90 % of the urban population has access to electricity. The overall electrification rate is 65%.5

The utilization of renewable energy has been emphasized as one of the priority areas in a number of important Government Plans. In 2005, the Parliament enacted the National Renewable Energy Program 2005 – 2020, with a goal of increasing installed capacity generated by renewable energy sources from 3-5 percent in 2010 to 20-25 percent by 2020. In 2007 the Renewable Energy Law of Mongolia came into force, with the purpose of regulating relations concerning generation of power using renewable energy sources and its delivery.

In general, Mongolia has low energy efficiency and investment needs are urgent. Power and heating demand has increased rapidly due to the influx of the rural population into urban areas and new business development, particularly in the mining sector. The current 2001 Energy Sector Plan thus needs to be updated.

The large investment needs in Ulaanbaatar are due to rapid growth in electricity and heating demand as well as the ageing of coal-based heat and power plants. Considerable progress has been achieved in providing provincial and district centers with access to electricity, however a substantial part of these centers lack proper access to heating services. Most village centers still need to be electrified.

5 WHO/UNDP: “The Energy Access Situation in Developing Countries”, Nov. 2009

In 2001 - by virtue of the law on Energy and Tariffs - the then Energy Agency was divided into autonomous state companies (presently 17 companies) operating within heat and power, transmission and distribution. Mongolia has a single buyer model for power.

The Energy Regulatory Authority of Mongolia is mandated to regulate tariffs, issues licenses, monitor operational and financial performance of licensees and dispute complaints from licensees and consumers. An assessment of regulatory agencies in the Central Asia Regional Economic Cooperation (CAREC) member countries in 2005 indicated that the Mongolian regulator was considered transparent, independent and capable.

Status of Renewable Energy

Mongolia has abundant resources of renewable energy. There is a high awareness of solar PV and wind turbine systems for individual use, and about 40,000 solar home systems and 3,000 wind turbine systems have been sold, especially for household and communication facilities. Some public investments have been made in PV, wind or hybrid systems.

Opportunities

Solar: Mongolia has favorable solar energy regime, ranging from low insolation of 4.5 kWh/m^2 per day and less than 2,600 sunshine hours in the mountainous ranges, to a high of 5.5.-6.0 kWh/m^2 per day with a sunshine duration of 2,900 – 3,000 hours in the Post-Altai Gobi area, the Steppe and the Gobi dessert. The high insolation areas cover some 70% of the territory.

Hydropower: At present some small hydro plants are operating. Resources have yet to be fully investigated. 3,800 small rivers have a calculated total potential of 6,200 MW.

Wind: More than 160,000 km^2 have good-to-excellent wind potential, with 13 provinces having at least 20 GW potential; South Gobi alone is estimated to have over 300 GW of potential.

Geothermal: Activities exist in Mongolia, although not widely developed. No detailed scientific research has yet been done into the ability of these springs to provide geothermal power, but geothermal has potential to extend heating supply in many provincial centers with heating demand of about 2 MW.

Biomass/biogas energy generation/biofuels: Commercial and domestic exploitation of forest resources is primarily for timber and firewood. The 4 million m^3 of solid wastes (industrial and domestic) per year are not suitable for biogas development because of weather and wastes composition.

Public and Private Capacity for SREP implementation

The Government capacity for implementing a RE scaling-up program has been assessed positively by representatives from MDBs operating in Mongolia. The capacity of the private sector is emerging, albeit still limited. An ADB evaluation in 2008 concluded that the banking subsector was performing well while the capital markets subsector is lagging behind.

Special considerations

Mongolia would be a relevant case for testing the options for scaling-up RE in general and also in relation to providing increased access to energy for a widely dispersed population in rural areas. It climatic extremes also provide an opportunity to demonstrate the application of renewable resources in such environments.

5.4 Tanzania

Brief Country Statistics

Population (millions)	Access to electricity (%)			Target for electrification access		% population using modern fuel	% population relying on solid fuel using cook stoves	Annual deaths attributed to solid fuel use
	National	Urban	Rural	%	Year			
43.7	11.5	39.0	2.0	25	2010	2.8	0.72	18,900

Policy and Regulatory Environment

Tanzania has a population of some 41 million of whom 75% live in rural areas in a country of over 945,000km^2 in area. In 2005 only 4.2% of the land area was noted as arable. The country has large commercially exploitable deposits of gold, diamonds and various gemstones. Its economic performance has been one of the best in Sub-Saharan Africa over the last ten years and the political stability within the country has encouraged high inflows of foreign direct investment.

Around 90% of Tanzania's energy needs are met by biomass, particularly wood fuel. Petroleum and electricity account for 9% of energy consumption and coal and renewables for less than 1%. Less than 2% of the rural population have access to electricity. Power sector reforms since the late 1990s have focused on reduction in reliance on hydroelectric generation; use of indigenous gas resources; promotion of private sector participation in expansion of electricity services; improving TANESCO's commercial performance.

The Ministry of Energy and Minerals is responsible for policy formulation and implementation with a separate regulatory authority (for water and power) EWURA. A rural Energy Agency and Rural Energy Fund have the responsibilities for rural electrification projects. Projects developed through the rural agencies will ultimately be owned and implemented by the private sector and NGOs. The Rural Energy Fund is intended to provide capital subsidies to facilitate implementation.

Under a National Energy Policy (2003) efforts are being directed to the development and utilisation of RE sources and the promotion of energy efficiency and conservation.

Status of Renewable Energy

Tanzania is endowed with diverse energy sources including biomass, natural gas, hydropower, coal, geothermal, solar and wind power, much of which is largely untapped. Deforestation in rural areas is a major concern. The private sector and NGO roles in promoting RE are reported to be limited. A proposed $25m World Bank loan is expected to provide sub loans to finance four to six small RE projects. These will come through the Rural Energy Agency which has some 22 projects awaiting implementation by the private sector.

As noted, about 80% of the population lives in the rural areas where energy requirements are mostly met by wood fuel, resulting in deforestation. In order to reduce the trend the following projects are being promoted:- Biogas production for cooking, improved technologies (cook stoves and kilns) Solar thermal applications for water heating and cooking, Solar Photovoltaic and Wind technologies are being promoted. Projects to address problems of electrification in remote areas are being promoted. Tanzania is in the process of implementing a National Solar Programme under the World

Solar Programme (WSP). (The WSP is an open ended attempt through broad partnerships and cooperation of Governments and NGO organizations to promote the wider utilization of renewable energy resources.) Government has declared two of its five project proposals submitted to UNESCO as being of high national priority. These are: village level solar electrification and small islands solar electrification. Efforts have been made to seek donor support but no funds have been committed yet.

Opportunities

Tanzania's large RE potential includes notably biomass, solar, wind, hydro and geothermal. Better exploited, renewable energy can be instrumental in narrowing both generation and access gaps in Tanzania. However, despite the endowment with vast renewable energy resources, commercial exploitation remains a major challenge.

Generally, the most sustainable local electrification schemes are those based on local renewable energy sources. Adaptation of administrative systems to better serve local clients thus provides an opportunity also with respect to RE.

Public and Private Capacity for SREP implementation

Tanzania intends to further strengthen the institutional and regulatory framework through revising and updating the National Energy Policy (NEP of 2003) to reflect the commitment to promote rural and renewable energy development, and to gradually move towards a low carbon development path in the energy sector. The implementation of this framework will require substantial organisational and financial capacity, not only for SREP implementation but also for other activities related to RE.

Tanzania's public sector will need the capacity to handle not only SREP funds and other RE activities; and not least the foreseen substantial donor financing to other climate related programmes..

The private sector's capacity to handle RE is growing, albeit still limited. The access to financing on both concessional and commercial basis is important in this context. The financial sector in Tanzania has developed considerably, but still financing for not least SME's working with RE, can be a bottleneck.

Special considerations

A key issue will be the development of sufficient capacity in both the private and public sector to identify, finance and implement a substantial increase in RE activities.

It will be a challenge to further encourage private sector participation in RE activities on a commercial basis, simultaneously with channelling substantial grants and concessional loans into RE, while taking care not to distort markets and in particular undermine the work of smaller commercial entities that are already serving varied communities.

5.5 Yemen

Brief Country Statistics

Population (millions)	Access to electricity (%)			Target for electrification access		% population using modern fuel	% population relying on solid fuel using cook stoves	Annual deaths attributed to solid fuel use
	National	Urban	Rural	%	Year			

23.6	38.2	75.0	22.0	n.a.	n.a	62.9	n.a.	6,700

Policy and Regulatory Environment

There is a National Strategy for Renewable Energy and Energy Efficiency enacted in June 2009, The Ministry of Electricity and Energy (MOEE) has elaborated a Draft Renewable Energy Law, and has also prepared a RE&EE Action Plan that focuses on wind, solar, geothermal and landfill gas areas of development. The action plans also delineates the activities to be undertaken in order to establish enabling environments and support mechanisms, clearly defining institutional and organizational charter definitions within the energy sector of the country. In particular the 2009 strategy for EE/RE focuses on:

- Decreasing the usage of fossil fuels;
- Increasing the share of RE (wind farms, geothermal, waste biogas, sewage gas
- off-grid stand-alone systems) in electricity generation (15% of total generation by2025);
- Supporting decentralization of access to RE technologies;
- Enhancing Energy Efficiency and Conservation (15% increase by 2025); and
- Establishing an electricity market and encouraging investors, through incentives, to produce RE in rural areas (electrification of 110,000 rural households).

There are also conditions in existence related to the access to land for the development of renewable energy projects and provisions for tax exemptions related to customs transfers as well as income generating streams for RE projects.

Status of Renewable Energy

Yemen is endowed with a good resource base for the development of renewable energy power, wind (up to 34,000 MW), geothermal (up to 2,900 MW), solar electric (18,600 MW) landfill gas (6 MW) and solar thermal (up to 278 MW_{th}). Programs are being implemented targeting up to 80,000 new rural RE solar based systems.

Opportunities

Yemen has around a 1 GW of generating capacity, power consumption is growing at a very fast pace in the capital city (up to 8% per year), and there is a good renewable resource base that can be used for grid connected especially from both wind and geothermal. The national utility´s master plan includes the potential development of up to 400 MW of wind to 2025.

Overall electricity access remains low at around 40 %, there is therefore an opportunity to also develop schemes for increasing rural energy access through innovative approaches that can consider special conditions in the rural areas of the country, where solar can play an important role, allowing participation of the private sector, cooperatives and auto generation. This rural access focus is considered a key element of SREP support.

Public and private capacity for SREP implementation

The power sector in the country is undergoing transformations, aiming at unbundling of the utility, with the creation of spaces for private sector participation in generation and distribution; and establishment of new regulatory activities.

The private sector capacities have concentrated historically in developing small scale thermal power generation in the country, but more recently there has been some momentum building around the participation in developing private power renewable energy, especially wind.

Special considerations

It appears to be accepted that there will continue to be a strong public sector presence in the near term developments of renewable resources. A key issue will be building capacity in both the private and public sector to identify, finance and implement a substantial increase in RE activities.

Given the immaturity of the local RE market it has already been recognised that it will be important to build scale in wind (and possibly geothermal) applications so that costs of development and future operations and maintenance can be progressively educed.

5.2 South Pacific Regional Project

In providing background on those countries recommended for inclusion in a South Pacific Regional Project there are a number of common issues which are relevant for all. For many there is limited published data on their energy statistics and the institutional capacity is limited but evolving. The points that follow draw on a recent UNDP report[6].

The issues that typify the energy sector in the South Pacific arise substantially from the specific characteristics of island economies and cannot be separated from the wider development challenges that these economies face. Pacific Island Countries (PICs) have traditionally contended with remoteness and geographical isolation. In the 21st century, they are faced with complex challenges including increasing globalization, the vulnerabilities of being economically peripheral and the threat from climate change. Rising oil prices have added another critical dimension. The PICs are amongst countries that are most vulnerable to increases in oil prices in the Asia-Pacific region. The negative impact of the extremely high exposure to international oil prices faced by PICs (both at the macro and micro level) has become clear over the last few years. The poor are being pushed further into poverty/hardship as a result of this situation.

Given the large number of remote settlements, delivery of energy particularly electricity, is critical for the provision of basic services in the PICs. Many countries have their rural populations spread over numerous small islands and the dispersed nature of settlements makes it imperative to address constraints related to extending the grid. Absence of access to electricity is common in the PICs. For instance, the Solomon Islands has most of its population spread over more than 300 populated islands. In Kiribati, less than 80,000 people live on 33 widely scattered low atolls (800sq.kms of land). The scattered habitations make a national grid impossible and the distribution of fossil fuels expensive and often unreliable.

Another key challenge is the very limited human and institutional capacities that not only constrain the delivery of energy and related services, but also impede the development of strategic and medium term interventions to address these issues. In addition, the lack of institutions that focus on rural energy access has kept the pace of rural development slow. Dependence on traditional fuels, inefficient technologies and inadequate availability of finance for energy are other key challenges.

The UNDP report also points out that in most countries energy is not a priority concern and therefore limited national resources and programmes are directed to address energy access issues. The report points out that what may work for many countries in the rest of the developing world (including Asia) may not be applicable in the PICs, due to constraining factors such as location disadvantages, scattered islands, dispersed populations and high transportation costs. In addition, the diversity of the region and the specific characteristics and nature of individual PIC precludes the possibility of across-the-board solutions.

Nevertheless, a useful starting point is regional and national programmes that investigate energy-poverty linkages in a specific PIC context, as there is a need to establish improved energy services in a manner which impacts positively on poverty/hardship. A key input to addressing poverty concerns is the enhancement of the reach of energy institutions to rural and remote areas. In this context, the private sector needs to be involved, particularly in providing decentralized energy based entrepreneurship; if large scale, rapid and widespread implementation is to be achieved. It is

[6] *Energy and Poverty in the Pacific Island Countries* – Regional Energy Programme for Poverty Reduction UNDP Regional Centre in Bangkok 2007

believed that a well-considered project supported by SREP funding can help move such programmes forward.

Brief Country Statistics

Country	Population (millions)	Access to electricity (%)			Target for electrification access		% population using modern fuel	% population relying on solid fuel using cook stoves	Annual deaths attributed to solid fuel use	% of population dependent on solid fuels[7]
		National	Urban	Rural	%	Year				
Kiribati	0.10	60.0			75	2015				
Samoa	0.18	97.0	100				18.6		Less 100	70
Solomon Islands	0.52	14.4	70.6	5.1			7.4		Less 100	95
Tonga	0.1	92.3	97.7	90.7			59.1			56
Vanuatu	0.24	19.0	61.0	7.0			14.5	6.1	Less 100	79

The notes that follow provide a brief overview of each of the countries, their current policy and regulatory environments and energy setting.

5.6.1 Kiribati

Policy and Regulatory Environment

Kiribati covers 811 sq km and consists of 33 coral atolls, 21 of which are inhabited. The three island groups (Gilbert, Line and Phoenix) spread across some 4,200 km east to west and 2,000 km north to south. The country has few natural resources and the commercially viable phosphate deposits were exhausted by 1979. Foreign financial aid accounts for 20-25% of GDP.

The Ministry of Works and Utilities is responsible for meeting the energy needs of the country in a sustainable manner and is to provide a resource centre to promote RE and encourage EE. The Energy Planning Unit coordinates the implementation of energy policies and provides advice on all energy matters. The Public Utilities Board is responsible for power, water and sewerage services. The Solar Electric Company

Status of Renewable Energy

Biomass, used for cooking and crop drying accounts for about 25% of the national energy production. Though solar power is a significant energy source for the outer islands it produces less than 1% of the total energy production. Kiribati has only a small variation in insolation from month to month allowing for efficient solar design. There is considerable potential for household electrification with solar PV on the outer islands (where per capita energy usage is low) and over the last 20 years most of the outer islands have received at least one solar pump for village water supply. It is suggested that wind resources on some islands (Christmas) are promising and on others coastal sites may be appropriate for hybrid (with solar PV) operations.

[7] WHO 2006. (2003 or latest available data). Fuel for Life. Household Energy and Health.

5.6.2 Samoa

Policy and Regulatory Environment

Samoa is a group of islands covering some 2,800 sq km; there are two main islands Upolu and Savai'i) and several smaller islands and uninhabited islets. Seasonal typhoons and active volcanism pose the major natural hazards. The economy of Samoa has traditionally been dependent on development aid, family remittances from overseas, agriculture and fishing. Agriculture employs 60% of workers and provides 90% of exports.

Energy demand is met through biomass (47%), fossil fuel (45%) and hydropower (8%). Biomass is largely used for cooking with imported petroleum products used for transportation and power generation. The Electricity Power Corporation (EPC) (wholly government owned corporation) power system consists of a grid on the two main islands, accounting for nearly all energy sales. The total installed capacity is some 37.2 MW of which 24.7MW is diesel generation with an annual production of some 112 GWh. Power system losses are reported to be high (>20%).

The Samoa National Energy Policy (2007) identified the need to promote clean and renewable energy to reduce reliance on imported fossil fuel. The Ministry of Finance has the mandated responsibility for policy and strategic planning for the energy sector. A key issue in planning is to reduce the vulnerability of the existing power grid to the annual occurrence of cyclones. The ADB is providing a $15.39 million grant and a $26.61 million loan to support this work and encourage the establishment of effective regulation and management within the power sector. The commercial viability of the power company is affected by the lack of a regulatory and appropriate financing framework.

A Renewable Energy Unit was set up in EC in 2007 to manage and develop RE projects in wind, solar, hydro and biomass.

Status of Renewable Energy

Energy demand is met by three main sources; biomass (47%), fossil fuel (45%) and hydropower (8%). The energy sector in Samoa ahs traditionally been dominated by the consumption of indigenous biomass-wood fuel and coconut residues for domestic cooking and crop drying. In the 1990s there was a rapid transformation towards the commercial energy supply based on imported petroleum and hydro generation.

The opportunities for renewables lie in solar PV – a 13 kilowatt battery storage and mini-grid system has been installed in Apolima – and solar insolation is high across the islands; efforts are underway to develop further hydro resources (<10 MW); the use of coconut oil for transportation has been tried but suspended due to lack of available oil; wind energy assessments are reported on Upolou and Savaii.

5.6.3 Solomon Islands

Policy and Regulatory Environment

The Solomon Islands are a double chain of 992 islands covering some 29,000 sq km in the Pacific Ocean. There are six main islands, Guadalcanal, Malaita, Makira, Santa Isabel, Choiseul and New Georgia. The bulk of the population depends on agriculture, fishing and forestry with rich undeveloped mineral resources. There are significant sources of water on the main islands but very limited such resources on the atolls and low-lying islands.

The installed capacity of the Solomon Islands is some 22MW with a peak demand of 12.5MW in Honiara (Guadalcanal) and 2.5MW in the outer islands. Fewer than 16% of households have access to electricity and 98% of generation is currently diesel fuelled. The tariff in Honiara reached US$0.52/kWh (2008).

The Solomon Islands Electricity Authority is the government owned statutory body responsible for power supply and distribution in all areas. Within the Ministry of Mines there is an Energy and Rural Electrification division responsible for energy policy and renewable energy development. There are however no formal policies for energy or rural electrification.

Status of Renewable Energy

There are indications of exploitable geothermal resources in four locations; a World Bank study suggests that there is potential for a 22MW run of river hydro; a number of micro-hydro schemes have been implemented; substantial hydro potential has been identified on several islands but awaits further evaluation; there is considerable solar potential but this has yet to be exploited, although the use of solar water heaters has had limited application; biomass has been used on a small scale to produce electricity and efforts are underway to encourage the use of efficient wood stoves, rather than traditional open fires; a wind atlas was reportedly being considered (2008).

5.6.4 Tonga

Policy and Regulatory Environment

Tonga is an archipelago of 169 islands (36 inhabited) covering 747 sq km in the South Pacific. There are four groups of islands and most have limestone bases formed from uplifted coral formations. The country has an open economy with a narrow export base in agricultural goods, which together with fish, make up two thirds of total exports.

The Ministry of Lands, Survey and natural resources has the primary responsibility for the energy sector and contains the Energy Planning Unit.

Electricity on the urban islands is generated solely by diesel engines. Solar power is however providing power for most of the smaller outer island with some 150 kWp installed (2004). Electrification is high (in excess of 90%) but electricity costs some US$0.45/ kWh.

In 2009 Tonga, with support from a number of donor organisations, established a comprehensive “energy roadmap” for 2010 to 2020. This focuses on increased use of renewables for grid connected supply and seeks to address issues that wil encourage greater private sector participation.

Status of Renewable Energy

The solar resources with Tonga are very good and nearly 20 years of solar powered rural electrification has confirmed its viability. The opportunity for significant grid-connected solar, without storage, may be limited.

Wind power may have applications in hybrid systems, particularly with some of the smaller diesel generators. The availability of suitable on-shore land locations may be limited due to competition for other uses.

With 65% of the land under coconuts there is considerable potential for developing coconut oil for biofuel use. There are however a number of barriers to be overcome; droughts affect production;

the rehabilitation of the coconut resource will require the replacement of a lrage number of aging trees.

5.6.5 Vanuatu

Policy and Regulatory Environment

Vanuatu is made up of more than 80 islands, 65 inhabited, over some 12,000 sq km in Oceania. The main natural resources are manganese, hardwood forests and fish. There is limited surface water and villagers on many islands and urban residents are dependent on ground water.

Vanuatu is overwhelmingly dependent on imported petroleum for commercial energy. Biomass provides some 50% of the gross national energy production with transportation using some 64% of petroleum fuel (including jet fuel), electricity about 30%. 61% of households are electrified with 36% using kerosene for lighting and 53% cooking mainly with LPG. Only about 7% of rural households are electrified, 86% use kerosene for lighting and 95% cook with wood.

The energy unit is located within the Ministry of Lands, Geology, Mines, Energy, Environment and Water Resources. It has very limited resources and deals mainly with small scale renewable technologies.

Electricity is supplied to the main urban areas by UNELCO, a privately owned utility. The peak demand is some 8.2MW (2004) and 93% of generation is from diesel sources. Current tariffs are around US$0.46/kWh.

Status of Renewable Energy

Geothermal potential has been identified on some 12 islands and an MOU has been signed to develop a small (2.5MW) geothermal project on the island of Efate, in conjunction with UNELCO.

There is some hydro potential for supplying urban grids and small rural demands. Opportunities are being explored on a number of islands.

Solar insolation at some 6kWh/m2/day suggests that there is considerable potential for the use of solar energy. There have been a number of rural PV projects totalling about 63 kWp. Further developments are under consideration

Efforts to develop a sustainable market for coconut oil as a biofuel have had limited success, partially due to regulations that discouraged further development. It is understood that UNELCO has established its own facility to produce coconut based biofuel to blend into its diesel for power production and its vehicle fleet.

APPENDIX A:

CRITERIA FOR SELECTING COUNTRY AND REGIONAL PILOTS UNDER THE PROGRAM FOR SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES

Climate Investment Funds

March 26, 2010

CRITERIA FOR SELECTING COUNTRY AND REGIONAL PILOTS UNDER THE PROGRAM FOR SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES

I. BACKGROUND

1. There is increasing consensus that addressing climate change is central to the sustainable development, economic growth and poverty reduction agenda. Increasing the resilience to climate change needs to combine both mitigation and adaptation measures. A delay in reducing greenhouse gas (GHG) emissions would significantly constrain opportunities to achieve lower stabilization levels and is likely to increase the risk of more severe climate change impacts. Climate change impacts have the potential to reverse hard-earned development gains and progress towards achieving the Millennium Development Goals.

2. Low income countries face a dual challenge of increasing the availability of electricity and other commercial fuels needed for economic development and increasing access to the 1.5 billion people who have no access to electricity and are dependent almost wholly on biomass fuels for energy services. The majority of the low income countries and populations are in Sub-Saharan Africa and Asia, and electricity access is about 25 percent in Africa and 52 percent in Asia. In Latin America low income countries have access rates typically of around 60 percent. In a vast majority of these countries fossil energy use is highest in the residential and commercial sectors.

3. The need to ramp up modern energy use in low income countries, coupled with the availability of exceptional renewable energy resources, provide a fertile opportunity to help countries develop a renewable energy base that will allow them to leap-frog into a new pattern of energy generation and use. Increased financing is vital to catalyze such a transformative use of renewable energy. Such resources are needed to overcome the challenges to achieving this potential, including:

a) weak enabling environments: few low income countries have in place an enabling environment necessary to promote renewable energy. It is necessary, therefore, to create an enabling environment by establishing the necessary policy, legal, regulatory and economic frameworks, reduce barriers to investment, improve access to knowledge and financing, and strengthen institutional capacities. These steps help reduce risks and transactions costs, and thereby encourage renewable energy investment.

b) lack of access to capital: there is a funding gap for renewable energy as commercial lenders perceive such investments as too risky. The capital costs of renewable energy investments further exacerbates the problem. When there are capital constraints, the tendency is to favor projects that may have lower upfront capital intensity.

c) need to engage public and private sector: the private sector is a critical partner, and it can be most effective in scaling up renewable energy investments if an enabling environment exists. This underscores the important role of the public sector in setting the policy and regulatory framework for private sector interventions and contributing to investments in the early stages of a transformative program.

d) lack of affordability: even with increased access to investment resources, many potential customers may have limited financial resources to make energy purchases at a scale needed to make renewable energy businesses financially viable. Long-term commercial viability is a prerequisite for sustainable and affordable energy services.

II. OBJECTIVES AND PURPOSE OF SREP

4. The aim of the Strategic Climate Fund's Program for Scaling up Renewable Energy in Low Income Countries (SREP) is to pilot and demonstrate, as a response to the challenges of climate change, 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.

5. As the foundation of economic growth, the private sector has a significant role to play in promoting renewable energy. In pursuing a strategy that will combine public sector and private sector actions, the SREP should seek to overcome economic and non-economic barriers in order to scale-up private sector investments contributing to the objectives of the SREP.

6. SREP should assist low income countries to initiate a process leading towards transformational change to low carbon energy pathways by exploiting their renewable energy potential in place of fossil-based energy supply and inefficient use of biomass.

7. Transformational change could occur through improved market and financial conditions and increased investor confidence. It leads to greater public and private sector investments in renewable energy necessary for large scale replication. This requires a better understanding of existing impediments and a focus on concrete actions to remove barriers. SREP should demonstrate that renewable energy provides a feasible pathway for economic growth and development.

8. SREP should provide experience and lessons in scaling up renewable energy, should promote sharing of lessons at the national, regional and international levels, and should increase public awareness of the opportunities for renewable energy.

9. SREP should also lead to economic, social and environmental co-benefits. Using renewable energy in place of conventional fuels could simultaneously address local air pollution reductions while reducing greenhouse gas emissions, contributing to climate resilience, and enhancing energy security.

10. SREP financing should be blended with co-financing from multilateral development bank (MDB) lending programs and other national and international, public and private funding to invest in renewable energy technologies for electricity use and thermal energy generation in low income countries.

III. SREP DESIGN PRINCIPLES

11. Building on the aim and the objectives above, SREP should:

(a) be country-led and build on, and draw benefit from, national policies so that renewable energy is fully integrated into national energy plans. SREP should assist countries in developing or strengthening policies for renewable energy;

(b) take a programmatic and outcome-focused approach for investing in renewable energy as an alternative to conventional sources, such as fossil fuels and inefficient use of biomass. An SREP program should consist of both renewable energy investments (including infrastructure to supply and deliver renewable energy), and technical assistance, together with support for policy changes to greatly increase the use of renewable energy;

(c) give priority to renewable energy investments that create “value added” in local economies. SREP should target proven renewable energy technologies that allow for the generation and productive use of energy, as well as community services such as health, education and communication;

(d) commit sufficient funding and leverage significant additional financing from MDBs, bilateral agencies/banks and from other public and private sources to achieve large scale renewable energy impacts;

(e) work in a small number of low income countries selected on the basis of objective criteria, to maximize its impact and the demonstrative effect;

(f) encourage private sector investments to significantly increase renewable energy capacity in a country's energy supply;

(g) target the entire value chain, by utilizing the transformational potential of the private sector and civil society groups (including financial intermediaries) to achieve economic development and support long-term social and environmental sustainability;

(h) seek wider economic, social and environmental co-benefits, such as reduced local pollution, increased energy security, enterprise creation, and increased social capital, particularly greater involvement and empowerment of women and other vulnerable groups;

(i) be designed and implemented with the full and effective participation and involvement of, and with respect for the rights of, indigenous peoples and local communities, building on existing mechanisms for collaboration and consultation; and

(j) proactively seek to build on synergies with other programs in the field of renewable energy, including those of the MDBs, GEF and other development partners.

IV. SCOPE OF SREP PROGRAMS

12. SREP should provide financing for renewable energy generation and use of energy using proven "new" renewable energy technologies. For purposes of SREP, new renewable energy technologies include solar, wind, bioenergy, and geothermal, as well as hydropower with capacities normally not to exceed 10 MW per facility.

13. SREP should support complementary technical assistance as this is essential for transformative and enduring change and country engagement and ownership. This could include support for planning and pre-investment studies, policy development, legal and regulatory reform, business development and capacity building (including for knowledge management and monitoring and evaluation) as an integral and complementary part of renewable energy investment operations.

V. EXPERT GROUP FOR THE SELECTION OF PILOT COUNTRIES

14. An Expert Group is to be appointed by the SREP Sub-Committee to make recommendations on the selection of country or regional pilots to be financed by the SREP *(*see *Criteria for Selecting Expert Group Members under SREP)*. This document proposes criteria and additional considerations to guide the Expert Group in advising on the selection of country or regional pilots.

VI. NUMBER OF PILOTS

15. The SREP Sub-Committee is to determine the number of country or regional pilots to be financed through the SREP, taking into account, among other things, the resources available for the program and the objective of providing scaled-up resources through the SREP pilots. In determining the number of country and regional pilots, it is important to ensure that the scale of investment for each pilot is sufficient to meet the objectives of the program. Based on the current level of pledged funding (USD 292 million), the SREP Sub-Committee has agreed that there should initially be up to six pilots.

16. The Sub-Committee is invited to keep under review the funding available to the program and to consider, if the funding increases, whether to include additional pilots.

17. The Expert Group is invited to propose a list of up to six pilots to the Sub-Committee together with a list of up to three additional countries to be considered should funds become available to finance additional pilots or should some of the selected pilots prove not to be feasible. The Expert Group is invited to inform the Sub-Committee of its views on the number of pilots for further consideration by the Sub-Committee, taking into consideration: a) estimated leverage factor, and b) absorptive capacity of the countries.

VII. CRITERIA

18. In reaching its recommendations on the selection of country and regional pilots, the Sub-Committee should consider the following criteria. The criteria should be considered from two perspectives: (i) a country's willingness to meet the criteria and to achieve the objectives of the SREP, and (ii) a country's potential and capacity to implement a SREP program. This criteria includes:

e) willingness to undertake a program for renewable energy development that could eventually move the country towards a low carbon development path in the energy sector. Conditions needed for such transformation should include:

   i) the existence of, or a willingness to, adopt, within an appropriate time frame, supportive regulatory structures and institutions (including agencies to promote/utilize renewable energy). This could include policies and regulations promoting renewable energy, such as feed-in tariffs, tax incentives, subsidies, concessional financing or renewable portfolio standards.

   ii) an enabling regulatory environment that promotes business, such as that contained in the *Doing Business Report*. For the renewable energy sector, this can include policies that support private sector participation, public-private partnerships, and availability of financing for renewable energy technologies. This can also include availability, or willingness to develop, local capacity along the renewable energy supply chain, including manufacturing, training, and operations and maintenance.

   iii) sector-wide energy development strategies that are open to integrating renewable energy into energy access and supply enhancement programs or targets for large-scale renewable energy deployment. Countries can be assessed on national and local strategies and targets for electrification, and current or projected share of renewables in the energy portfolio.

   iv) good governance within the sector. An assessment of sector governance might include commercial performance of relevant institutions, pricing and tariff practices, and competitive procurement of goods and services, the transparency and accountability of these practices and the degree to which they are subject to public oversight.

f) potential capacity for implementation, including a business friendly environment and sufficient institutional capacity. This can include a track record of renewable energy projects completed or initiated with participation of private sector, previous experience implementing and using renewable energy technologies, capacity for operating and maintaining renewable energy systems. In specific cases, the existence of a track record may not be a strict criterion and a willingness to advance in the area of renewable energy could be sufficient. The government's ability to effectively absorb additional funds should also be considered.

g) regional balance as well as balance among diverse contexts for scaling up renewable energy, such as urbanization, industrialization, dispersed rural populations and stage of renewable energy development. With respect to regional balance, it is not expected that each of the World Bank regions would be represented in the recommended list of countries, but the Expert Group is requested to recommend countries from at least three different regions.

h) natural conditions for developing renewable energy.

19. Priority consideration should be given to countries that have submitted an expression of interest to be considered as a pilot. The Expert Group should also give preference, if other considerations are equal, to least developed countries8. While regional programs are not seen as a priority, it is agreed that there should be flexibility for the Expert Group to recommend a regional grouping of a small number of states if a strong case can be made from an operational perspective.9

VIII. REPORT OF THE EXPERT GROUP

20. In presenting its recommendations to the SREP Sub-Committee, the Expert Group is requested to elaborate upon how it has taken the above criteria and other considerations into account in preparing its recommendations for country or regional pilots. The Expert Group report should include, inter alia, information on:

c) methodology and analysis leading to the group's recommendations regarding proposed country and regional pilots;

d) an assessment of key issues and challenges for the recommended pilots; and
c) conclusions and recommended list of country or regional pilots that meet the agreed number, criteria and other considerations agreed by the Sub-Committee.

8Least developed countries may include fragile states.

9 A regional or sub-regional program should be considered as one pilot under the SREP.

ANNEX 1- COUNTRY ELIGIBILITY

1. A country eligible for participating in SREP programs should be:

a) a low income country eligible for MDB concessional financing (i.e., IDA10 or a regional development bank's equivalent); and,
b) engaged in an active MDB country program. For this purpose, an "active" program means where an MDB has a lending program and/or on-going policy dialogue with the country.

2. It is expected that a country receiving financing from SREP will not receive financing from the Clean Technology Fund.

List of IDA only countries and/or similar RDB equivalents

• Afghanistan • Angola • Armenia • Bangladesh • Benin • Bhutan • Bolivia, Plurinational State of • Burkina Faso • Burundi • Cambodia • Cameroon • Central African Republic • Chad • Comoros • Congo, Democratic Republic of (formerly Zaire) • Congo, Republic of • Cote D'Ivoire • Djibouti • Ethiopia • Eritrea	• Gambia • Georgia • Ghana • Guinea • Guinea-Bissau • Guyana • Haiti • Honduras • Kenya • Kiribati • Kosovo • Kyrgyz Republic • Laos, PDR • Lesotho • Liberia • Madagascar • Malawi • Maldives • Mali • Mauritania • Moldova • Mongolia • Mozambique • Nauru	• Nepal • Nicaragua • Niger • Nigeria • Rwanda • Samoa • Sao Tome and Principe • Senegal • Solomon Islands • Sierra Leone • Sri Lanka • Tajikistan • Timor-Leste • Tanzania, United Republic of • Togo • Tonga • Tuvalu • Uganda • Uzbekistan • Vanuatu • Yemen, Republic of • Zambia

10 SREP should be limited to IDA only countries and/or similar RDB equivalents.

APPENDIX B:

CRITERIA FOR SELECTING EXPERT GROUP MEMBERS UNDER THE PROGRAM FOR SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES

Climate Investment Funds

March 26, 2010

CRITERIA FOR SELECTING EXPERT GROUP MEMBERS UNDER THE PROGRAM FOR SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES

II. BACKGROUND

1. The Climate Investment Funds (CIF) are a unique pair of financing instruments designed to support low-carbon and climate-resilient development through scaled-up financing channelled through the African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank, and World Bank Group.

2. The two CIF funds are the Clean Technology Fund (CTF), financing scaled-up demonstration, deployment and transfer of low-carbon technologies for significant greenhouse gas (GHG) reductions within country investment plans, and the Strategic Climate Fund (SCF), financing targeted programs in developing countries to pilot new climate or sectoral approaches with scaling-up potential. Three programs have been designed under the SCF: the Pilot Program for Climate Resilience (PPCR), the Forest Investment Program (FIP), and the Program for Scaling Up Renewable Energy in Low Income Countries (SREP).

3. Low income countries are well endowed with renewable energy resources, though they use a tiny fraction of their potential. To tap into this potential, the SREP has two primary objectives. First, it is designed to support low-income countries in their efforts to expand energy access and stimulate economic growth through the scaled-up deployment of renewable energy solutions. Second, it will contribute to transforming the renewable market through a programmatic approach that involves support for market creation, private sector implementation, and productive energy use.

II. OBJECTIVES AND PURPOSE OF SREP

4. The aim of the SCF Program for Scaling-up Renewable Energy in Low Income Countries (SREP) is to pilot and demonstrate, as a response to the challenges of climate change, 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.

5. As the foundation of economic growth, the private sector has a significant role to play in promoting renewable energy. In pursuing a strategy that will combine public sector and private sector actions, the SREP should seek to overcome economic and non-economic barriers in order to scale-up private sector investments contributing to the objectives of the SREP.

6. SREP should assist low income countries to initiate a process leading towards transformational change to low carbon energy pathways by exploiting their renewable energy potential in place of fossil-based energy supply and inefficient use of biomass.

7. Transformational change could occur through improved market and financial conditions and increased investor confidence. It leads to greater public and private sector investments in renewable energy necessary for large scale replication. This requires a better understanding of existing impediments and a focus on concrete actions to remove barriers. SREP should demonstrate that renewable energy provides a feasible pathway for economic growth and development.

8. SREP should provide experience and lessons in scaling up renewable energy, should promote sharing of lessons at the national, regional and international levels, and should increase public awareness of the opportunities for renewable energy.

9. SREP should also lead to economic, social and environmental co-benefits. Using renewable energy in place of conventional fuels could simultaneously address local air

pollution reductions while reducing greenhouse gas emissions, contributing to climate resilience, and enhancing energy security.

10. SREP financing should be blended with co-financing from multilateral development bank (MDB) lending programs and national and international, public and private funding to invest in renewable energy technologies for electricity use and thermal energy generation in low income countries.

IV. SREP DESIGN PRINCIPLES

11. Building on the aim and the objectives above, SREP should:

(a) be country-led and build on, and draw benefit from, national policies so that renewable energy is fully integrated into national energy plans. SREP should assist countries in developing or strengthening policies for renewable energy;

(b) take a programmatic and outcome-focused approach for investing in renewable energy as an alternative to conventional sources, such as fossil fuels and inefficient use of biomass. An SREP program should consist of both renewable energy investments (including infrastructure to supply and deliver renewable energy), and technical assistance, together with support for policy changes to greatly increase the use of renewable energy;

(c) give priority to renewable energy investments that create “value added” in local economies. SREP should target proven renewable energy technologies that allow for the generation and productive use of energy, as well as community services such as health, education and communication;

(d) commit sufficient funding and leverage significant additional financing from MDBs, bilateral agencies/banks and from other public and private sources to achieve large scale renewable energy impacts;

(e) work in a small number of low income countries selected on the basis of objective criteria, to maximize its impact and the demonstrative effect;

(f) encourage private sector investments to significantly increase renewable energy capacity in a country’s energy supply;

(g) target the entire value chain, by utilizing the transformational potential of the private sector and civil society groups (including financial intermediaries) to achieve economic development and support long-term social and environmental sustainability;

(h) seek wider economic, social and environmental co-benefits, such as reduced local pollution, increased energy security, enterprise creation, and increased social capital, particularly greater involvement and empowerment of women and other vulnerable groups;

(i) be designed and implemented with the full and effective participation and involvement of, and with respect for the rights of, indigenous peoples and local communities, building on existing mechanisms for collaboration and consultation; and,

(j) proactively seek to build on synergies with other programs in the field of renewable energy, including those of the MDBs, GEF and other development partners.

IV. EXPERT GROUP TASK AND COMPOSITION

12. An Expert Group is to be established by the SREP Sub-Committee to make recommendations on selection of country, and if appropriate, regional programs to the SREP Sub-Committee. The SREP Sub-Committee should provide to the Expert Group criteria and guidance (see, Criteria for selecting Country and Regional Pilots under SREP). The Expert Group should make recommendations to the SREP Sub-Committee on a list of country or regional pilots based on the agreed criteria.

V. GENERAL PRINCIPLES FOR SELECTING THE EXPERTS

13. It is important to emphasize that this group is being appointed to serve as an expert advisory group. Therefore, the experts should be internationally recognized senior professionals, acting in their personal capacities, chosen on the basis of their expertise, technical and operational experience. The group as a whole should include a diversity of perspectives, a diverse knowledge of renewable energy technologies, knowledge of engineering and technology, economics and financing, environment and climate change, economic and social development, the private sector, market development, and governance and institutional issues including policy and regulatory frameworks.

14. The Expert Group should be an inter-disciplinary team in order to reflect the wealth of knowledge and experience on climate change and renewable energy practices in developing countries with a focus on areas such as renewable energy policy and regulatory issues, energy technologies, rural and urban electrification, and power systems. The terms of reference and modalities for the Expert Group are described in sections VII and VIII.

15. The Expert Group should include experts from both developed and developing countries, with experience in different regions.

VI. SPECIALISTS TO BE INCLUDED IN THE EXPERT GROUP

16. While meeting the above general principles, it is proposed that the group include experts with in-depth knowledge in different disciplines and familiarity with field level implementation related to the renewable energy sector and development. It is recommended that the Expert Group consists of a maximum of eight members, and preference would be given to experts who could combine more than one profile as described below:

Development Economist

Expertise in macroeconomics and development with capabilities to assess a country's development potential and growth potential. He or she should have broad and diverse development experience. Familiarity with the economics of renewable energy is an advantage.

Energy Economist

Expertise in the public and private financing of renewable energy technologies and sustainable financing models and issues: analytical skills pertaining to economic and financial costs, carbon finance, fiscal/financial incentives including subsidies, and cross-

sectoral issues (e.g. biofuels); micro-enterprise development; micro-credit and financing models. Extensive Development experience in low income countries is preferred.

Environment and Climate Change

Expertise in environmental impact assessments of energy projects including those of renewable energy technologies (RETs); experience in assessing environmental co-benefits of clean energy projects including impacts on related sectors such as agriculture, water, natural resource management and infrastructure; familiarity with the latest methodologies and applications to promote RETs as part of climate action including Kyoto Flexible Mechanisms (CDM); familiarity with climate risk assessment. Other useful skills include knowledge of ongoing international, regional and national activities at policy and operational level and familiarity on capacity needs assessments and preparation of capacity building work programs in the renewable energy sector.

Development and Renewable Energy Policy Specialist

Expertise in: policies and regulations aimed at promoting renewable energy; institutional and organizational issues underlying climate change action and renewable energy promotion; and, institutional issues underlying delivery of development resources for clean energy. Knowledge of rules, procedures and practices as well as accountability structures that shape intergovernmental processes and relations between key sectors would be useful. The expert should be familiar with critical country polices and development processes that are aimed at poverty alleviation and increasing access to energy. Knowledge of donor financing, harmonization and coordination mechanisms, and country programming is preferred.

Private Sector Experience in Energy Sector

Experience with private sector and issues pertaining to promotion of renewable energy in low income countries; expertise in policies, incentives, enabling environment and institutions required for a conducive investment environment for private sector. Prior experience in private sector in generation of energy and delivery of energy services to the poor is preferable.

Renewable Energy Technologies

Technical expertise in grid-based as well as off-grid renewables such as small hydro, biomass, wind, CSP, solar PV and/or geothermal; expertise in renewable energy technologies that allow for the generation and productive use of energy as well as community services such as health, education, and communication; familiarity of technical issues involved in installation, inter-connections, operations, maintenance, capacity enhancement, and hybrid systems in developing country situations.

Rural and Urban Electrification

Familiarity with rural and urban electrification programs in developing countries including best practice in grid extension; connectivity and dispatch issues; utilization of RETs including mini-grids and off-grid systems; distributed generation; and policies and regulatory frameworks.

Social and Gender Development

Expertise in social and community issues, including indigenous peoples issues and rights, in promoting RETs especially in remote rural areas; strong understanding of the socio-economic and gender dimensions of energy access and sustainable energy development; experience in promoting RETs for socially and economically productive applications.

VII. TERMS OF REFERENCE

17. Once the Expert Group has been appointed by the SREP Sub-Committee, it is to prepare,
for consideration by the SREP Sub-Committee, a list of recommended country or regional pilots to be developed under the SREP. Consistent with the criteria for the selection of country and regional pilots, and following the working modalities described below, the Expert Group is invited to recommend up to six country or regional pilots. Recommended pilots should meet the criteria and other considerations agreed by the Sub-Committee. The Expert Group is also invited to propose a list of up to three additional countries to be considered by the Sub-Committee should funds become available to finance additional pilots or should some of the selected pilots prove not to be feasible.

18. The Expert Group is to submit to the Sub-Committee, together with its recommendations, a report on the methodology and analysis that led to its recommendations.

VIII. WORKING MODALITIES FOR COMPLETION OF THE WORK OF THE EXPERT GROUP

19. The following steps and working modalities are to be followed.

20. The first step in the process is for the SREP Sub-Committee to agree upon the number of pilots to be financed with the available resources, the criteria for selecting the Expert Group as well as the terms of reference and working modalities proposed in this paper. The SREP Sub-Committee is also to agree upon *Criteria for Selecting Country and Regional Pilots under the SREP.*

21. Once the criteria and terms of reference are approved, the CIF Administrative Unit will issue a call for nominations of experts. This call will be posted on the CIF website and direct outreach inviting nominations will be made to:

a) SREP Sub-Committee members,
b) SCF Trust Fund Committee members,
c) Active observers to the SCF Trust Fund Committee and the SREP Sub-Committee, and,
d) MDBs.

22. Nominations for experts submitted by any party should include an expression of interest, the expert's name, contact information, area of expertise (taking into account the areas of discipline outlined in paragraph 16) and a resume.

23. The CIF Administrative Unit and the MDB Committee will review all the nominations received for which information listed in paragraph 22 has been provided and prepare a proposal, using the criteria as guidance, to present to the SREP Sub-Committee for review and approval. The MDB Committee will endeavor to satisfy the requirements of the criteria.

The CIF Administrative Unit will confirm, prior to including an expert in the final proposal, that the expert would be available to work with the Expert Group as foreseen in the schedule below (paragraph 32).

24. Once the composition of the Expert Group is approved by the Sub-Committee, the CIF Administrative Unit will contract the experts and organize the first meeting of the expert group.

25. Once the *Criteria for Selecting Country and Regional Pilots* has been approved, the CIF Administrative Unit will inform eligible countries, through the country offices of the MDBs, of the SREP program and invite interested governments to submit a brief expression of interest to be considered as a pilot country. Countries will be invited to submit an expression of interest in advance of the working meeting of the Expert Group. All expressions of interest received by the Administrative Unit will be submitted to the Expert Group for its consideration.

26. The first organizational meeting of the Expert Group will be virtual. At the first meeting, the group will be requested to:

a) select two co-chairs: one co-chair of the Expert Group should be a national from a developing country and one co-chair should be from a donor country.
b) confirm arrangements for the Expert Group to meet for a week to undertake its analysis and work; and
c) agree on the preparatory work, including collection of relevant information, to be undertaken by Expert Group members, MDBs or the CIF Administrative Unit in advance of the meeting.

27. Following the organizational meeting, the Expert Group will meet for five days to carry out its technical analysis and review of eligible countries and to formulate its recommendations to the SREP Sub-Committee on the selection of country or regional pilots.

28. The Expert Group will be assisted by the CIF Administrative Unit during the course of its work. Arrangements will be made for the Expert Group to meet with the MDBs to discuss, on a regional basis, countries and their potential to be included in the SREP and to review the country and regional energy portfolios of the MDBs. In particular, the MDBs will be expected to share their experience and knowledge with respect to the potential capacity of the country to implement a SREP pilot program.

29. At the end of its meeting, the Expert Group will agree on a consultative process for reviewing and reaching agreement on its report and recommendations to be submitted to the SREP Sub-Committee. The Expert Group should agree upon one of its members to serve as the lead author of its report. The report and recommendations should be prepared and agreed within two weeks of the conclusion of the meeting.

30. The report and recommendations of the Expert Group will be submitted to the CIF Administrative Unit for transmittal to the SREP Sub-Committee. The Co-Chairs of the Expert Group will be invited to present the report to the Sub-Committee and to respond to questions from Sub-Committee members. The report and recommendations should be made publicly available at the same time as the report is submitted to the SREP Sub Committee for consideration.

31. If necessary, the Sub-Committee may request the Expert Group to undertake further work before it reaches a final decision on the selection of country and regional pilots.

IX. TIMELINE

32. The following timeline for the work of the Expert Group is proposed:

a) Week of February 1, 2010:

SREP Sub-Committee approval of criteria for selecting Expert Group members, terms of reference and working modalities.

b) March 29-April 30, 2010:

CIF Administrative Unit will invite expression of interest from countries.

c) February22-March 26, 2010:

Period for submissions of nominations of experts.

d) March 29-April 9, 2010:

Preparation of proposal for composition of Expert Group by MDB Committee and confirmation of availability of proposed experts.

e) April 12-26, 2010:

Circulation of proposal for approval by SREP Sub-Committee. Such approval will be by mail in accordance with the rules of procedure for the Sub-Committee.

f) April 26-May 5, 2010:

Recruitment of Expert Group members.

g) April 29, 2010:

Organizational meeting of Expert Group (virtual).

h) May 17-21, 2010:

Meeting of Expert Group (in person).

i) June 4, 2010:

Submission of the recommendations and report to the CIF Administrative Unit for distribution to the SREP Sub-Committee to assist its selection of country and regional pilots.

j) Week of June 21, 2010:

SREP Sub-Committee meeting to approve a provisional list of potential countries or regions to be considered for financing under the SREP.

k) June 28-July 23, 2010:

CIF Administrative Unit will invite countries selected to confirm their interest to participate in the program.

l)July 26-August 9, 2010:

Confirmation by the SREP Sub-Committee of final list of countries or regions. Such approval will be by mail in accordance with the rules of procedure for the Sub-Committee.

X. EXPECTED OUTPUTS

33. In reporting to the SREP Sub-Committee, the Expert Group should include information on:

e) methodology and analysis leading to the group's recommendations regarding proposed country and regional pilots;

f) an assessment of key issues and challenges for the recommended pilots; and

g) conclusions and recommended list of country or regional pilots that meet the agreed number, criteria and other considerations agreed by the Sub-Committee. The Expert Group is also invited to propose a list of up to three additional countries to be considered by the SREP Sub-Committee should funds become available to finance additional pilots or should some of the selected pilots prove not to be feasible.

34. The recommendations and the report of the Expert Group will be submitted to the SREP Sub-Committee for consideration in advance of its meeting during the week of June 21, 2010.

APPENDIX C:

SREP EXPERT GROUP
MAY 5, 2010

Expertise	Proposed Expert	Title, Organization	Country
Development Economist	Anders Serup Rasmussen	Partner, Nordic Consulting Group	Denmark
Environment and Climate Change Specialist	Stephen Thorne	Director, South South North Project	South Africa
Private Sector Specialist with Experience in Energy Sector	Michael Allen *(Rapporteur)*	Chairman, ReEx Capital Asia Ltd.	New Zealand
Renewable Energy Technologies Specialist	Oscar Coto *(Co-Chair)*	Principal, Energía, Medio Ambiente y Desarrollo, EMA S.A.	Costa Rica
Rural and Urban Electrification Specialist	Govind Raj Pokharel	Manager for Pakistan, Indonesia, and Bangladesh Programmes, SNV Netherlands Development Organisation	Nepal
Social and Gender Development Specialist	Richenda Van Leeuwen *(Co-Chair)*	Consultant	United States and United Kingdom

APPENDIX D:

Terms of Reference for SREP Expert Group Supplemental Report Preparation

A formal request by the SREP Sub Committee has been made to the co-chairs of the group to reconvene the group in preparation of a supplemental report for presentation at the SREP Sub Committee meeting in early November 2010. The report should indicate up to six alternate pilots to be recommended to the Sub Committee (budget permitting).

The official guidance provided by the Sub Committee via the CIF Admin Unit to the co-chairs is as follows:

- Up to six alternate pilots, which do not have to be ranked in order of preference
- This should include the three recommended pilots from the original report - Armenia, Liberia and Mongolia.
- Priority should be given to LDCs and low income countries identified by the OECD (the latter list is not long in terms of those countries submitting an EOI)
- The expert group should evaluate potential for consideration of a country in the MENA region
- The expert group should evaluate potential for consideration of a country in the Pacific region
- The expert group should review the potential for a regional pilot (which could be in MENA or the Pacific, or in principle elsewhere)

We will need to have the work completed and the supplemental report submitted by mid-October, for the co-chairs to present again at the next Sub Committee meeting which is planned for November 8.

It is planned that the work ahead for the EG will be achieved through a series of activities including:

I. Scheduling of two calls (initially) with the full expert group membership as follows:

a. To outline the revised scope of work for the supplemental report and timelines, as well as outlining the approach that the EG will take in addressing the requests by the SREP Sub Committee.

By way of reference, the Admin Unit is sending the EOIs and the country information used in the initial discussions to the full group.

b. Once the group has had time to review the documentation again, the second call would be to begin the process of discussion and evaluation of the appropriate countries to include in the recommendation.

We will strive to work by consensus as in the earlier discussions. A third call can be planned should we not reach consensus in the second call. It is anticipated that the calls will have a target duration of up to 3 hours.

II. A meeting of the co-chairs along with the EG rapporteur is to be organized towards the end of September in order to draft the report to be submitted in October.

III. Comments to the draft report by the members of the EG: a short period of time will be allocated in order to receive comments to the draft report.

IV. Final drafting, Submission of the report to the CIF Administration Unit and presentation at the November Sub Committee Meeting by the rapporteur and the co- chairs of the EG.

In order to implement this TOR, the co-chairs have been informed by the CIF Admin Unit that members of the EG will be allocated an initial 3 further contract days for the participation in activities I and III. The rapporteur and co-chairs will receive up to 12 additional days in order to accomplish the other additional activities described in II and IV.

The suggested dates for the two calls in activity II are as follows:

1) Thursday September 2, 9am EST
2) Thursday September 9, 9am EST

In telephone call with the Administrative Unit on this work, we raised the question of whether it would be appropriate for the EG to recommend a particular technology or technologies that could usefully be supported within a country or region (for example, if an extension was recommended to include Djibouti in a regional geothermal in Kenya and Ethiopia). The Administrative Unit indicated that they thought it would be a welcomed recommendation by the EG to address technologies. With respect to Kenya and Ethiopia, clarification was also sought as to how these two countries would be treated if we were to recommend in the supplemental report that they be included in a regional project (after they were already identified as country pilots). The Admin Unit was of the opinion that Kenya and Ethiopia would need to be assured that they would not receive less funding as result of being included in a regional program, and that additional funds would need to be assigned to cover the regional aspect. We assume that the same would be the case for any other regional pilot should it add new countries to those already included.

APPENDIX E
EXPERT GROUP CALL AGENDAS

SREP EXPERT GROUP CONFERENCE CALL

THURSDAY, SEPTEMBER 2, 2010, 9:00AM EST

AGENDA

According to the established ToR received from the CIF Admin Unit, the proposed call has the following objectives:

1. To outline the revised scope of work for the supplemental report and timelines,
2. Outlining the approach that the EG will take in addressing the requests by the SREP Sub Committee.

In order to comply with the proposed objectives, the following agenda for the conference call is proposed:

a) Introduction by CIF Admin Unit on the TOR, general comments to the work in progress, expectations, etc.
b) General discussions on issues related to timelines and scope of work for the EG.
c) Approach to be followed for the organization of work, and other issues related to information needs, etc.
d) Discussion on special issues in dealing with pilots that involve regional programs.
e) Suggested preparations for the second conference call.
f) Other issues.

SREP EXPERT GROUP CONFERENCE CALL

THURSDAY, SEPTEMBER 9, 2010, 9:00AM EST

1. Brief overview of countries under review for additional list of pilots/analysis presented (first cut)

2. MENA region discussion

3. Pacific Islands/ regional approach

5. Additional country discussion

6. Summary and final recommendations

APPENDIX F
GUIDANCE NOTE ON PPCR REGIONAL PROGRAMS

I Background

1. Following the recommendation of the Expert Group that regional programs be developed for the Caribbean and South Pacific regions, the PPCR Sub-Committee requested the expert group to undertake further analysis, in collaboration with the Multilateral Development Banks (MDBs) and relevant regional organizations, to recommend which cluster of countries should be included in each regional program.

2. To assist the PPCR Expert Group in this work, the CIF Administrative Unit, working with the MDB Committee, has been requested to prepare further guidance to clarify:

(a) the proposed objectives, organization and modalities of regional programs;

(b) indicate what kinds of activities or program components could best be undertaken at the regional level;

(c) what kinds of activities and program components would be better suited to implementation at the country level; and

(d) what would be the benefits, synergies and potential lessons to be learned from a regional approach.

3. The present note provides general guidance for regional PPCR pilots along the guidance outlined above, recognizing that the specific programming and activities for each region will be developed by the countries participating in the regional program, in consultation with the MDBs concerned and other development partners such as bilateral donors. The PPCR Expert Group is invited to use this note together with its original TOR to recommend countries to be included in the regional program for the Caribbean and the South Pacific.

II Objectives and rational of a regional approach

4**.** The implementation of a regional PPCR pilot is anchored in the overall PPCR objectives to:

(a) pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning;

(b) strengthen capacities at the national levels to integrate climate resilience into development planning;

(c) scale-up and leverage climate resilient investment, building upon other ongoing initiatives; and

(d) enable learning-by-doing and sharing of lessons at the country, regional and global levels.

5. In addition, regional PPCR pilots will aim to strengthen cooperation and capacity at the regional level to integrate climate resilience into national and appropriate regional development planning and processes.

6. A regional PPCR pilot is likely to provide significant benefits over a single-country/country-by-country approach in cases where a single country lacks adequate level of resources, knowledge, and capacity (see below) and/or where opportunities for key adaptive measures may only be realized through regional or sub-regional cooperation on the management of trans-boundary resources. It is expected that this regional approach will optimize the efficient use of PPCR resources within the region, taking into account and building on existing resources and activities at country as well as at regional level.

7. For example, Small Island Developing States (SIDS), in particular, have urgent needs to address their special vulnerability to sea level rise and to the impacts of increased intensity of climatic extreme events, including impacts on water resources, natural resources and ecosystems, cities and ports. Yet, SIDS face a number of barriers in addressing development and climate change related issues largely as a result of limited institutional and technical capacity, small size, and remote location, which would limit the ability of an individual country to benefit from PPCR by itself. 8. Regional PPCR pilots provide an opportunity to overcome many of these barriers while also promoting the transfer of lessons, replication and scale-up of activities in participating countries as outlined below.

III Types of activities at regional level

9. In line with the objectives and goals of PPCR, regional pilots should be designed to integrate climate resilience into development planning and sector policies, where relevant, and to promote scaling-up of actions and investments to achieve greater climate resilience in the participating countries within the pilot. To ensure measurable impacts over the lifetime of PPCR, activities will need to be focused.

10. Participating countries in a regional pilot should share a similar range of climate risks (derived by a similar set of hazards, exposure levels and vulnerabilities) representing a corresponding set of *common risk and vulnerability profiles*. This would enable pilot activities to focus on building responses to climate threats that have high relevance to the pilot region/sub-region and to each participating country, recognizing that activities in each participating country could vary to reflect, as necessary, its national circumstances

11. Where possible, regional activities should build on existing collaboration on climate sensitive development issues and/or on prior involvement in regional programs supported through MDBs or other development partners. This will contribute to greater sustainability beyond the timeframe of PPCR support. Depending on the degree of ongoing regional collaboration, capacities, and degree of regional political support of an existing regional institution, the strategic approach and actions on a regional level can take a range of shapes.

12. *In cases where there is currently only limited existing collaboration* with regard to development and/or climate change, the regional approach and activities may be focused on:[2]

(a) exchange of lessons learned, including through regional exchange meetings;

(b) regional technical assistance, e.g., analytical and monitoring services to provide critical climate information and to support the development of regional climate scenarios (where the size of each country does not warrant retaining specific expertise in each country);

(c) development of tools and methodologies to assess vulnerability to, and impacts of, climate change and integration of climate resilience within development planning, including private sector activities;

(d) provision of training (including training of trainers) with regard to application of such tools and vulnerability assessments and other capacity building efforts;

(e) support to regional awareness raising efforts on regional climate threats and likely impacts on a country's development.

13. *In cases where a history of regional cooperation exists,* including a mandated regional institutional set-up (for example where regional political or economic groupings are present), PPCR funded regional activities may include regional cooperation and implementation of an expanded range of issues, such as regional climate monitoring and early warning systems, identification of trans boundary opportunities to effective reduce vulnerabilities and risks, as well as inclusion of climate change in regional planning strategies, policies and financing mechanisms for strengthening climate resilience, in the medium and longer-term.

IV Types of activities to be undertaken at national level

14. The range of activities implemented within national components of the regional pilot is similar to those in PPCR country pilots. National activities will be supplemented and strengthened by the regional activities. In general, national action may include a range of activities, such as:

(a) engagement of policy-makers, including economic decision-makers and planners, in knowledge building activities on climate impact scenarios – including seminars/workshops and other events for the dissemination of applied research findings – to strengthen their understanding of how climate change will affect economic development and growth.

(b) institutional strengthening and revisions of relevant policies and/or strategies and plans to integrate climate resilience into development planning and policy reform across sectors. PPCR is to be opportunistically ambitious in taking advantage of ongoing policy reform efforts (e.g. such as upcoming revisions of PRSPs, sector policies and strategies, etc.)

(c) investments to support climate resilience in key sectors and/or in important eco-systems and/or addressing particularly vulnerable groups. This may include, for instance, implementation of measures for integrating climate resilience within spatial planning processes, or modifying building construction standards/codes along with designation of 'no-construction' areas. It may also include improving the enabling environment and access to finance for the private sector to invest in adaptive measures (including innovative adaptation technologies).

V Organization and modalities

Implementation modalities of regional and national activities

15. *Regional activities* will be implemented through a regional entity or entities in agreement with national governments. Depending on the scope of activities and degree of regional cooperation, these can be either established regional institutions, or other entities (e.g. secretariat of a regional program or initiative) able to work across the selected/participating countries in a regional pilot (e.g. a regional university or research institution, NGO, regional meteorological service agency or other).

16. *National components* of the regional pilot program will be implemented by national governments and agencies[3]. Separate legal agreements between concerned MDBs and country will be entered into for each country. *Financing through PPCR* 17. *Funding for phase 1 of regional PPCR pilots (phase 1 grants):* the maximum funds available for phase 1 activities within a regional pilot may be larger than for PPCR single country pilots due to added transaction cost. Regional pilots may request additional finance in order to adequately cover these additional transaction costs. This additional amount is to be discussed further, recognizing the importance to minimize such added transaction costs and to retain necessary funding for phase 2. .

18. *Phase 2 funding:* implementation of regional activities and national programs within a regional pilot could be supported by the PPCR grant and/or loan component (same as country pilots).[4] 19. *The total PPCR allocation for a regional pilot (including both, regional and national components of phase 1 and phase 2)* should be within the same range of financial support provided by PPCR for single country pilots. Phase 1 and 2 funding should complement and build-up existing programs and activities, including leveraging other sources of funding available at the national, regional or international levels.

VI Benefits, synergies and potential lessons to be learned from a regional approach

Benefits and Synergies

20. Regional PPCR pilots provide an opportunity to overcome many barriers to investment related to scale, resources, and capacity constraints of smaller single countries. Focusing on a regional grouping of smaller countries facing a similar set of climate risks/vulnerabilities will facilitate learning and replication of approaches to increase climate resilience across these countries, and with others in the region. Furthermore, a regional approach can share costs and ensure that benefits are more readily shared among participating countries, e.g. by taking advantage of economies of scale for developing and retaining relevant technical capacity on a regional level that would be too expensive to retain on a national level. 21. Possible types and range of benefits that may accrue include:

(a) support for and sharing of specialized expertise for addressing climate risks and impacts, including climate modeling efforts that may be too costly to pursue and/or are beyond the institutional capacity of each individual country.

(b) increased institutional and financial resources for managing climate risks. This could include the establishment/strengthening of centers for climate monitoring and early warning systems.

(c) development of risk sharing mechanisms, such as regional weather index-based insurance mechanisms which are more economically attractive if implemented at regional levels.

(d) enhancement of replication of successful approaches and innovations across and beyond participating countries, including involvement of the private sector.

(e) greater leverage of financial resources to finance/co-finance activities related to climate resilience (within PPCR strategic program and beyond).

(f) identification of, and opportunity to, support adaptation measures requiring transboundary cooperation.

22. An additional benefit of the engagement in regional pilots may be the strengthening of greater regional cooperation for environmental management and/or other development related issues. 7

Knowledge Management and Learning

23. Regional pilots provide a range of means for creating, capturing and packaging knowledge, communication and awareness raising products that aim at both country and regional stakeholders from governments, civil society and the private sector. This may result in greater awareness and acknowledgement of specific regional vulnerabilities and climate threats as well as climate resilience building approaches in the respective sub-region and increase the sub-regions visibility in international fora. This may also contribute to attracting additional resources to the region.

24. Regional PPCR pilots will include a conscious effort to disseminate and facilitate transfer of lessons learned across countries in the regional grouping through regional meetings and possible exchange visits between government implementing agencies, private sector groups, communities and/or NGOs; emphasis will be given to building on existing regional mechanisms. A regional program can also include training-of-trainers programs. These activities will include financing of PPCR funded efforts as well as enhancing links – through for example the establishment of a dedicated website and other IT supported initiatives – with on-going efforts supported entirely through the government's resources, and/or by other developments partners (e.g. UN agencies, NGOs, bilaterals, and/or sub-regional banks). A range of innovative ways of exchanging lessons should be piloted.

25. It may be an option to invite more than the participating PPCR countries within the pilot (which are a subset of countries within a specific sub-region) to benefit from the regional knowledge exchange and lessons learned initiatives, which will increase the impacts of the pilot and enhance replication of experiences and lessons learned across the entire region. This would need to be budgeted for in the regional pilot.