ANNEX II: TERMS OF REFERENCE

1. BACKGROUND INFORMATION

1.1. Beneficiary country

Republic of Kiribati

1.2. Contracting Authority

The National Authorising Officer, Ministry of Finance and Economic Development, Republic of Kiribati.

1.3. Relevant country background

As a small Pacific Island Country with no proven reserves of conventional energy, Kiribati is highly dependent on imported fuels for electricity generation, transport and cooking. Energy use is dominated by the main urban centres at Tarawa and Kiritimati. Biomass is estimated to constitute around 25% of the gross national energy supply and is used for household cooking and copra drying in rural areas. Solar PV is an important source of energy in outer islands, but only accounts for less than 1% of national energy consumption. On the outer islands the per capita energy use is very low, and energy is often solely used for lighting and cooking with solar and biomass the main sources of energy. Electricity in rural areas comes from solar home systems with the exception of small generator use for government housing around the island council offices. Petroleum use is mainly kerosene used for lighting or cooking and to operate a few motorcycles and outboard powered boats.

The Government of Kiribati struggles with the high cost of importing fossil fuels, in particular to the outer islands. In order to keep the import of fossil fuels at a minimum, the Government has long had a policy of utilizing renewable energy and local resource for outer island electrification and associated development. Due to the better standard of living and economic opportunities that electricity brings, migration to the capital is reduced. To date roughly 34% of outer island homes have solar lighting services installed with an additional 20% indicating a desire for electrification. Typical systems include a 100 Wp panel and 100 Ah battery. Previously there have been minimal efforts to develop electricity beyond basic lighting, however there is a clear demand and need for electricity for small business development and for supporting modern education. This will be a key component in the effort to improve outer island socio-economic conditions.

The Kiribati Solar Energy Company (KSEC) has been installing solar energy systems since 1984. In 1992 the structure of the company was changed to a solar utility company whereby solar installations would be made and maintained by the company, with ownership retained by KSEC and electricity services sold to users for a fee. As a Renewable Energy Service Company (RESCO) KSEC is responsible for providing all technical and maintenance support and ensuring that the solar installations remain operational, providing reliable power. In 1992 KSEC completed a JICA trial project electrifying 56 households on North Tarawa managed under the solar utility concept. In 1994 this was supplemented by an EU project electrifying 250 households using solar energy. Under the 8th EDF the number of households, maneabas, schools and clinics electrified by solar under the management of KSEC rose to 2000.

1.4. Current state of affairs in the relevant sector

Issues identified by the Kiribati National Energy Policy, the Pacific Renewable Energy Assessment 2004 and Pacific Islands Energy Policy and Strategic Planning Project 2008 were taken into consideration when planning activities for EDF-10. This was combined with lessons learnt by KSEC over the last 20 years to ensure implementation of the most cost-effective activities and programmes. The project needs to address the following key areas:

Improved management required at KSEC: improved management tools will be essential to efficiently manage the increasing number of solar installations. Inconsistent duties and taxes applicable to renewable energy systems and limited financial capacity at the major energy bodies were identified as issues in the sector assessments. Whilst these issues are not solely attributable to KSEC, KSEC can play an important role in working with the other energy bodies to address these issues. In addition the Kiribati National Energy Policy (approved in 2009) states the need for improved documentation on the impact of solar electricity on the development of the outer islands; improved management and record keeping at KSEC would work towards this aim. Improved communications between KSEC island technicians and the Tarawa based management is also required.

Further training for outer island technicians required: the poor maintenance of solar systems is most likely due to a lack of essential skills and trainings to KSEC current island technicians on the outer islands. Thus, KSEC needs to properly train its island technicians and ensure that they all have sufficient technical knowledge and experience. Training should also cover business management and customer service, which have been identified as weaknesses.

Larger sized systems required: the need for electricity for productive use in addition to electricity for lighting has been identified. Professionals, including teachers, often require basic office equipments. Small businesses can use electricity to increase or diversify business; for example increased opening hours through lighting provision, community entertainment services through the use of video equipment, and the ability to keep food longer by refrigeration.

1.5. Related programmes and other donor activities:

Recent projects with a similar focus or complementary actions in Kiribati include;

OLPC Oceania: The One Laptop Per Child project aims at distributing 5,000 small specially designed laptops called OLPCs in the Pacific Islands, to improve education through computer literacy.

PIGGAREP: The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) project, funded by the GEF and co-financing partners, commenced in 2007. It will fund, among others, a climate change mitigation plan and RE awareness campaigns.

EC Solar Energy Projects: The first EC-funded pilot project electrified 250 households in the islands of North Tarawa, Nonouti and Marakei. The second EC-funded project under EDF-8 (8 ACP KI 02) expanded the electrification to all 18 islands of the Gilbert Group of Atolls, by providing the solar home systems to an extra 1,700 households, and electrifying almost 100 community halls (maneabas).

UNDP: Will be funding the USD 35,000 “Maintaining Renewable Energy Systems in Kiribati through Technical Training” project for upgrading KSEC’s information management software.

Italian Government: Several projects including PV water pumping, PV/diesel hybrid system, wind monitoring, coconut oil refinery for biofuels. Total amount: USD 761,000.

Japanese Government: Application for 400 kWp grid-connected PV system on South Tarawa has been made to Japanese Embassy in June 2009. Approval pending. Estimated cost: USD 5 million.

Taiwan Government: very recently this year, 2011, Taiwan has offered funding of $100,000 to the Kiribati Government. The project is on simple solar PV lighting systems for schools on outer islands and is coordinated by the Ministry of Education. In March 2011, the installation started in which KSEC was involved and KSEC would also be responsible for installing the remaining systems as agreed in the contract signed by the two parties.

2. OBJECTIVE, PURPOSE & EXPECTED RESULTS

2.1. Overall objective

The overall objective of the project of which this contract will be a part is as follows:

"*To address the current socio-economic imbalance between the urban and rural areas by achieving a more equitable distribution of resources to the outer islands, as agreed in the Country Strategy Paper for 10th EDF signed between the Republic of Kiribati and the European Commission. The project purpose is to foster social development by improving living conditions through electric lighting and small appliance power and by electrifying public facilities. Solar electrification will be introduced at households, maneabas, small businesses and schools*."

2.2. Purpose

The purpose of this contract is to engage a long term technical adviser who will assist the National Authorising Officer (NAO) and Kiribati Solar Energy Company Ltd (KSEC) to ensure delivery of the project deliverables and outputs and to ensure the efficient and successful implementation of the project with the aim that the project objectives are met according to schedule and budget.

2.3. Results to be achieved by the Consultant

At the end of the consultancy the following expected key results have been identified to be achieved by the consultant:

1. Comprehensive list of the 600 homes/households on the outer islands that will be installed with solar lighting is produced and endorsed by the PSC.
2. Comprehensive list of the 6 schools and 120 teachers' residences on outer islands to be supplied with solar providing lighting, power to laptops, computers, entertainment appliances etc is produced and endorsed by the PSC.
3. Comprehensive list of the 30 Community halls (maneabas) to be provided with basic lighting and electrification services is produced and endorsed by the PSC.
4. A comprehensive action plan to implement solar lighting and systems to the 600 homes/households, 120 teachers' residences, and 30 community halls is produced and endorsed by the PSC.
5. Implementation of the action plans is completed according to schedule and budget provided for in the financing agreement.
6. Procurement of all the required short TAs to provide the necessary trainings, undertake engineering for installation and/or commissioning of equipments, and to do the required feasibility study.
7. In-country trainings/workshops to KSEC staff, outer island technicians etc are completed.

8. Procurement of the necessary operational + specialized equipments needed for the sustainability of the project completed.
9. KSEC Office fully renovated to accommodate the PV grid connect system.
10. Assist in the evaluation of tenders, selection of supply contractor completed + Supply contract signed with the appropriate company and equipments received at Betio Port.
11. Assist and supervise the installation and commissioning of solar electrification work commenced in at least 3 outer islands.
12. Contribute to writing of the Inception report, progress and final reports for activities under PE No.1 and all the subsequent PEs prepared, submitted to the NAO and accepted by the EU.
13. Assist auditors where required and necessary to complete each Financial Audit for each PE No.1 and all the subsequent PEs.
14. Assist in preparation of PEs and the necessary amendments to the financing agreement as required.

3. ASSUMPTIONS & RISKS

3.1. Assumptions underlying the project intervention

The following assumptions have been identified in the Logical Framework for the project:

- Existing transportation routes to the outer islands are maintained.
- KSEC has sufficient revenue to pay for training of its staff.
- Turnover of KSEC technicians is low so knowledge and experience is not easily lost.
- Ministry of Education and Church owned schools which will be covered by the project have funds for additional equipment.
- There is sufficient cash on the islands to make businesses worthwhile.
- There are 600 homes and households that want solar home system and that they are prepared to pay KSEC the monthly service fee.
- Teachers and/or Ministry of Education have enough money to afford new appliances that may be required for the teachers' residences.
- There is complementary funding from PIGGAREP for a refresher technical training course, training of trainers' course and business development training.
- There is sufficient electrical storage capacity available in Kiritimati island to allow a 24hr connection.
- There is Grid connection available for connection at the Tarawa, KSEC headquarters to engage the power utility in developing renewable energy sources on Tarawa.
- Funding is provided by the Italian government for the electrification of 1 school and from OLPC for the supply of 500 laptops and co-ordination and distribution.
- Small businesses exist with need for electricity or people wishing to establish new businesses with electricity requirement.
- More people and communities are willing to have installed their solar PV systems.

3.2. Risks

There are no major risks identified for the project and based on past experiences, there are minimal risks.

4. SCOPE OF THE WORK

4.1. General

4.1.1. Project description

The Government of Kiribati following the signing of the Financing Agreement in the first quarter of 2010, will receive a grant of €4.1 million from the EU through the 10th European Development Fund or EDF10 for the project, Solar Energy for Outer Islands.

The project is basically an expansion of previous solar energy projects. The aim is to foster social development by improving living conditions through a provision of solar electrification for basic electricity services for rural households, communities and institutions. In this EDF10 project, the expected results or outputs are the electrification of 600 households, 120 teachers' residences, 30 community halls (maneabas), 100 small private businesses and 6 schools. At the same time, institutional strengthening for the Kiribati Solar Energy Company (KSEC) and capacity building for its technicians will be enhanced or provided.

KSEC will be responsible for implementing the project. KSEC has been installing solar PV systems since 1984. In 1992, the structure of the company was changed to a solar utility company whereby solar installations would be made and maintained by the company, with ownership retained by KSEC and electricity services sold to users for a fee. As a Renewable Energy Service Company (RESCO), KSEC is responsible for providing all technical and maintenance support and ensuring that the systems remain operational, providing reliable power. By 2010, the number of households, maneabas, schools and clinics electrified by solar PV power under the management of KSEC had risen to over 2000.

According to the Financing Agreement, the project is to be implemented via annual programme estimates. The first programme estimate thus will implement the project in the first year or from 2011. The total period of the project will span 4 years with a total funding of €4.1 m. As the Kiribati Government is the beneficiary, the National Authorising Officer (NAO)[1] located within the Ministry of Finance and Economic Development represents the Kiribati Government. The NAO works closely with KSEC and monitors the execution and implementation of the project. The technical adviser is therefore they key person who will assist both the NAO and KSEC to ensure the delivery of the project deliverables and outputs or to ensure the efficient and successful implementation of the project with the aim that the project objectives are met according to schedule and budget.

4.1.2. Geographical area to be covered

The 10th EDF Solar Energy Project will take place on the *outer islands of Kiribati*, as it is focussed on providing solar PV electricity to outer island households and communities. The project will also cover South Tarawa particularly KSEC headquarters at Betio for which the PV grid-connect system (10kW) will be installed. The project team will also be managed by KSEC, from the headquarters located in Betio, Tarawa.

[1] Secretary to the Ministry of Finance & Economic Development

4.1.3. Target groups

The major target groups of this project include: Kiribati Solar Energy Company Ltd, communities on outer islands (600 households + 30 community halls), teachers (120 residences), small businesses on outer islands (100), secondary schools on outer islands (6 schools), and communities in Poland – Kiritimati.

4.2. Specific activities

The Technical Advisor (TA) will work closely with and report to the Project Manager (PM), the CEO of KSEC. He/She is also expected to work along with the NAO as and when required. In general, the TA will provide technical and managerial guidance and advice to ensure the successful delivery of expected outputs and the technical assurance of the project. In addition, the TA should ensure that the project is implemented smoothly according to schedule, budget, EDF10 rules and procedures and that the project objectives are met successfully. More specifically, the duties of TA will include, but not limited to the following:

- Assist in preparation and production of quarterly and annual implementation plans.
- Assist in preparation and production of detailed operational programme estimates based on the logical framework.
- Preparation of the project implementation progress report and budget.
- In consultation with project accountant, assist to establish a permanent internal, technical and financial, monitoring system to the project.
- In consultation with the project accountant assist to prepare financial + technical reports and to present the reports to the project steering committee meeting, NAO and the EU.
- Provide updates, advice and recommendations to the CEO and PSC for necessary actions.
- Assist the ROM missions to undertake monitoring and evaluation of project.
- Assist to identify the need for short-term TAs in specific technical fields for capacity building to KSEC workforce and prepare TORs and launching of the tenders for the recruitment needed for the project.
- Assist in supervising and conducting of logistics works and certain technical trainings within TA's expertise.
- Provide advice on the scientific and technical knowledge, in particular to guide the PM in project planning that will involve the implementation of monitoring and evaluation plan with indicator, baseline and target for each output, and the detailed annual work plan and budget on the basis of the logical framework.
- Provide advice to ensure that the outputs which are to arise from the project are of high quality and meet the stated objectives.
- Serve as a source of objective technical advice at the planning, management and implementation levels. In particular, the consultant will assist the PMU in completing the supply tender dossier if this has not been completed, evaluating the bids, assisting in contracting, and supervise the installation of equipments.
- Liaise with Project Accountant to provide and advice on budget planning and progress.
- Participate in and attend the Steering Committee meeting with PM to provide assessment of the quality, quantity and timeliness of progress against the work plan.
- Advise PM for monitoring and reporting requirements such as the preparation of Quarterly Progress Report, Annual Project Report and Project Implementation Review.
- Capacity building of counterparts and other local staff to ensure effective skills and responsibility transfer. In this respect, it is expected that the TA will work closely with and support the locally recruited Technical Project Engineer(s) or Technical Supervisor(s) in all technical matters related to the project
-

- The Consultant must also observe the latest Communication and Visibility Manual for EU External Actions concerning acknowledgement of EU financing of the project where appropriate.

4.2.1. Responsible body

The project will be managed and implemented by Kiribati Solar Energy Company Ltd (KSEC).

4.2.2. Management structure

While the project will be managed and implemented by KSEC, it will report to the National Authorising Officer (NAO), Ministry of Public Works & Utilities (MPWU) and the European Commission for the Pacific. The project shall be implemented by programmes estimates through an indirect public decentralized operations. The contracting authority is the NAO while the project supervisor shall be the MPWU.

For the activities implemented through programme estimates, a steering committee shall be set up to oversee and validate the overall direction and policy of the project. The project steering committee shall meet at least once every quarter in a year. It shall be responsible for verifying the proposed programmes estimate. The PSC shall be made up of:

- A representative of the NAO, the contracting authority,
- A CEO of KSEC, or his/her representative,
- Imprest administrator and imprest accounting officer for the project designated in the programme estimate,
- A representative of the EC Delegation with observer status,
- A Director in Education of the Ministry of Education, or his/her rep,
- Other authorities as seen appropriate.

4.2.3. Facilities to be provided by the Contracting Authority and/or other parties

An office space will be provided with the necessary equipments will be provided by KSEC which are part of programme estimate no.2.

5. LOGISTICS AND TIMING

5.1. Location

Betio, Tarawa, Republic of Kiribati

5.2. Commencement date & Period of implementation

The intended commencement date is as early as possible from end of January 2012, depending on the availability of the expert. The period of implementation of the contract will follow the duration of each programme estimate, which is normally 12 months from the date of signature by the EU. The expert is expected to ***assist during the key phases of the project***: evaluation of tender and preparation of contracting documents (**approx. 1 man-month**), supervision of installation of equipments on outer islands **(approx. 12 man-month**), monitoring of equipments **(approx. 3 man-month**) and compilation of all relevant reports (**approx. 2 man-month**) a total of 18 man-month. Please refer to Articles 4 and 5 of the Special Conditions of the Service Contract for the actual commencement date and period of implementation.

It is intended however that subject to performance and funding availability the TA will be retained for the duration of the operational phase of the project, subject to performance and funding availability.

6. REQUIREMENTS

6.1. Personnel

6.1.1. Key experts

The consultant will be composed of only one key expert, the team leader. The estimated man-month for the performance of this contract is 18 man-months cf. above 5.2).

Key Expert 1: Team Leader

Qualifications

The key expert must have an internationally recognized first degree as a minimum, or preferably a postgraduate degree in Renewable Energy, Energy Management, Project Management and other related technical fields.

General Professional experience and skills

The following profiles and basic minimum requirements are expected of the key experts for this contract:

- At least 3 years work experience and proven skills and expertise in the design, specification and installation of solar photovoltaic systems for stand-alone domestic applications and solar hybrid systems in developing countries;
- At least 3 years work experience in international and project development, particularly in rural energy, micro enterprise development, technical training and capacity building;
- Demonstrated understanding of the practical implementation steps required under Clean Development Mechanism is an advantage;
- Demonstrated high level technical writing and communications skills in particular in the preparation of technical reports, technical specifications, technical training materials and presentations;
- Highly developed personal communication and people skills with evidence of track record in effective team work and collaboration;
- Must be familiar with Small Pacific Island States including Kiribati. Having working experience in Kiribati is an advantage;
- Must have at least 3 years experience in the energy sector in small island states. Experience in operation of small developing island utilities, in particular in the Pacific, would be an advantage.

6.1.2. Other experts

The consultant will be required to assist in the recruitment of short term TAs in the field related to electrical or solar PV engineering for the installation and commissioning of equipments and/or solar PV systems. The TA should also be able to carry out economic analysis or feasibility studies and to carry out specific technical trainings required for the training of island technicians and staff at KSEC. It is anticipated that 100 man could be more adapted potentially).

CVs of other key experts other than the key consultant should not be submitted in the tender (not necessary). The consultant shall select hire other experts as required according to the needs and requirements of the project during the actual implementation phase. The selection criteria to be used to select and recruit short term TAs shall be transparent and based on the agreed criteria between KSEC CEO, NAO and EU.

6.1.3. Support staff & backstopping

Support staff and backstopping will be provided by KSEC staff.

6.2. Office accommodation

Office accommodation of a reasonable standard will be provided by KSEC.

6.3. Facilities to be provided by the Consultant

The consultant shall have his/her own laptops while KSEC will assist to provide other things as may be required from time to time.

6.4. Equipments

No equipments is to be purchased on behalf of the contracting authority / beneficiary country as part of this service contract or transferred to the contracting authority / beneficiary country at the end of this contract. Any equipment related to this contract which is to be acquired by the beneficiary country must be purchased by means of a separate supply tender procedure.

6.5. Incidental expenditure

The Provision for incidental expenditure covers the ancillary and exceptional eligible expenditure incurred under this contract and includes only the international travel costs to and from Kiribati, and the per diem and accommodation costs while in Tarawa only. It cannot be used for costs which should be covered by the Consultant as part of its fee rates, as defined above. Its use is governed by the provisions in the General Conditions and the notes in Annex V of the contract.

The international travel(s) to and from Kiribati will be included in the budget.

Any subsistence allowances to be paid for missions undertaken as part of this contract must not exceed the per diem rates published on the Web site below while local per diem rate applies for local travels within Kiribati:

http://ec.europa.eu/europeaid/work/procedures/index_en.htm at the start of each such mission.

6.6. Expenditure verification

The Provision for expenditure verification relates to the fees of the auditor who has been charged with the expenditure verification of this contract in order to proceed with the payment of further pre-financing instalments if any and/or interim payments if any.

The Provision for expenditure verification for this contract is AUD15,000. This amount must be included without modification in the Budget breakdown.

7. REPORTS

7.1. Reporting requirements

Please refer to Article 26 of the General Conditions. Interim reports must be prepared every six months during the period of implementation of the tasks. They must be provided along with the corresponding invoice, the financial report and an expenditure verification report defined in Article 28 of the General Conditions. There must be a final report, a final invoice and the financial report accompanied by an expenditure verification report at the end of the period of implementation of the tasks. The draft final report must be submitted at least one month before the end of the period of implementation of the tasks. Note that these interim and final reports are additional to any required in Section 4.2 of these Terms of Reference.

Each report shall consist of a narrative section and a financial section. The financial section must contain details of the time inputs of the experts, of the incidental expenditure and of the provision for expenditure verification.

To summarise, in addition to the documents, reports and output which could be specified under the duties and responsibilities of each key expert above the Consultant shall provide the following reports:

Name of report	Content	Time of submission
Inception Report	Analysis of existing situation and plan of work for the project – maximum 20 pages for the main text excluding annexes.	No later than 1 month after the start of the implementation
6 month Progress Report	Short description of progress (technical and financial) including problems and issues encountered; planned activities for the ensuing 6 months accompanied by an invoice and the expenditure verification report – max 20 pages for main texts excluding annexes.	No later than 1 month after the end of each 6 month implementation period of each PE.
Draft Final Report	Short description of achievements including problems encountered and recommendations – max 50 pages for main text excluding annxes.	No later than 1 month after the end of the implementation period of each PE.
Final Report	Short description of achievements including problems encountered and recommendations; a final invoice and the financial report accompanied by the expenditure verification report.	Within 1 month of receiving comments on the draft final report from the Project Manager identified in the contract.

7.2. Submission & approval of reports

Three copies of the reports referred to above must be submitted to the Project Manager identified in the contract. The reports must be written in English. The Project Manager is responsible for approving the reports.

8. MONITORING AND EVALUATION

8.1. Definition of indicators

The performance measures will include accomplishment of the specific duties as listed in 4.2 above as well as compliance with the reporting requirements in 7.1 above.

8.2. Special requirements