

**Terms of Reference**  
**Preparation of the Scaling-up Renewable Energy Program (SREP) Investment Plan**  
**– Lesotho Energy Sector Development Project**

## INTRODUCTION

Lesotho, a small country of 2.2 million people, is completely surrounded by the Republic of South Africa. Highlands constitute more than two-thirds of the country, of which less than 10 percent is suitable for cultivation.

Over the last two decades Lesotho has diversified its economy from a reliance predominantly on subsistence agriculture and remittances to an economy based on manufacturing and water exports and services. It has achieved moderate economic growth, taking advantage of the preferential trade regime under the US African Growth and Opportunity Act. However, these structural transformations have not been sufficient to enable the economy to achieve high sustainable growth rates to withstand the external shocks, or substantially to improve Lesotho's social indicators.

Indeed, poverty remains high with 40% of the population living below the poverty line. Poverty is concentrated in populations living in rural isolated areas, 72.4% of the population, with limited income opportunities and high cost of service delivery due to the country's difficult terrain and scattered settlements (population density at 72.3 inhabitants per square kilometer). As a consequence, Lesotho's highland population has been migrating to the lowlands, attracted by economic opportunity and better services. As people move, Maseru, the capital, has emerged as an important economic node with the potential to become a growth hub and a key driver of Lesotho's development.

Electricity is supplied mainly by Lesotho's own 'Muela Hydro Power Plant (72 MW) and imports from South Africa and Mozambique (55 MW). This is insufficient to supply the current estimated peak demand of about 145 MW, of which a significant proportion comes from manufacturing/garment industry. Estimates of the future supply/demand gap vary. The World Bank estimates that the gap may increase to 130 MW by 2020. A recent study commissioned by IFC puts the gap at between 210 MW (4.2% annual growth scenario) and 315 MW (9% annual growth scenario), also by 2020.

As a result of power shortages in South Africa in 2008, ESKOM (the South African utility) reduced the supply of electricity to Lesotho and other neighbouring countries, leading to widespread load-shedding in that year. There are fears that further load shedding might be required in the future until generation investments are completed in South Africa and other demand-side measures are implemented. For this reason the Government of Lesotho wishes the country to become self-sufficient in the next few years. However to date this remains an informal policy, as further analysis is required. In particular, the Government needs to assess the economic impact of such a policy, including the cost premium that would result from full self-sufficiency.

1. Lesotho has been selected as one of the countries eligible for the Scaling Up Renewable Energy Program in Low Income Countries (SREP). The objective of the SREP is to pilot and demonstrate the economic, social and environmental viability of development pathways in the energy sector by creating new economic opportunities and increasing energy access through the use of renewable energy. SREP has approved the indicative allocation of US\$ 30 million for Lesotho. The SREP will endorse the investment plans from the new countries on a first-come, first-served basis taking into account the quality of the investment plans, regardless of funding availability, but funding for the projects and programs proposed in the investment plans will be contingent upon the availability of funds under the SREP.
2. The Government is committed to promoting the development of renewable energy in Lesotho and to that end, expressed its interest to be one of the pilot countries under SREP and was selected in the pilot country list. The GOL therefore seeks to engage a firm consultant to assist it with the development of a renewable energy investment plan for SREP.
3. The consultant should also note that some of the projects are at an early stage (e.g. prefeasibility stage) and that data may be lacking. In providing a proposal to undertake this work, the consultant should have access to its own sources of data, which may be adapted for use for Lesotho.

## **OBJECTIVES**

4. The objective of this assignment is to support the GoL to prepare a renewable energy investment plan for consideration by the SREP for funding. The plan should be comprehensive, clear and effective in demonstrating how SREP resources and other donor and private sector financing would be used in Lesotho to overcome current obstacles to the wider penetration of renewable energy.
5. The study will be conducted in two phases. Phase I will assess the potential and costs of applicable renewable energy technologies, prioritize potential interventions and facilitate discussions of these results with stakeholders. Based on the outcomes of Phase I, Phase II will develop the draft investment plan in for the prioritized renewable energy investments that can be undertaken.

## **SCOPE OF WORK**

6. In order to achieve the above objective, the Consultant shall carry out the following principal tasks.

### **PHASE 1 – Assessment of Renewable Energy Technologies for Lesotho and Identification of Priority Renewable Energy Projects to Receive SREP funding**

#### **Task 1: Compile background information on the country and energy sector overview**

7. Under this task the Consultant is specifically expected to:
  - Prepare a background section with description of the country context, including main demographic, social and economic indicators as of the most recent date.
  - Prepare an overview of the energy sector, including (a) basic energy balance (for at least 2009-2014/15); (b) description of the sector structure; (b) legislation and

regulatory framework; (c) electricity generation, transmission and distribution assets; (d) electricity generation mix; (e) tariffs and tariff structures; (f) key entities involved in regulation of the energy sector, and (g) key challenges facing the sector.

- Prepare an overview of the estimated potential for various renewable energy technologies and detailed renewable energy penetration targets as well as the review of on-going and planned activities and projects in Lesotho in the field of renewable energy. Include in the overview the expected country-specific environmental and social opportunities and risks (social, environmental, technical, financial, etc.) associated with the development of the considered renewable energy technologies in Lesotho.
- Summarize the key barriers (technical, regulatory, financial, social, environmental) hindering the development of renewable energy technologies reviewed and proposed measures to overcome them. This activity should provide a detailed description of availability of private or other government financing for renewable energy projects, including terms of financing, discuss bottlenecks to development of renewable energy associated with availability and/or terms of financing.

## **Task 2: Conduct a comprehensive assessment of various renewable energy technologies applicable in Lesotho**

8. Under this task the Consultant is specifically expected to:

- Assess the levelized economic costs (LECs) of various renewable energy technologies, including micro-grids, wind, solar, geothermal, biomass, biogas, hydro power (less than 10MW capacity), hybrids/mini grids and any other technology suggested by the Government of Lesotho. Build a supply cost curve using the potential and estimated LECs of renewable energy technologies.
- Simulate combinations of assessed renewable energy based electricity generation options for meeting the electricity demand considering the planned commissioning of the generation plants under construction, those projects for which feasibility studies are currently being prepared, and their future availability to meet domestic demand. The simulation analysis shall be conducted assuming base-case electricity demand growth scenario and commercial and concessional financing terms for all types of new generation assets.
- Determine generic environmental and social opportunities, risks and costs of various renewable energy generation technologies considered for Lesotho. Based on the available information on the physical, natural and social environment of various provincial areas of the country, identify those areas where environmental and social risks and benefits of individual renewable energy technologies are expected to be particularly significant and/or areas where additional information is required to estimate these risks and benefits. The analysis will be based on the World Bank's safeguard policies as well as national environmental legislation.
- Based on the above analysis, determine the viable and least cost renewable options which should be pursued in Lesotho. Besides the purely economic considerations, evaluation of technologies should also consider other costs and benefits, including, but not limited to: energy security, training costs, local employment and economic development, reduction of greenhouse gas (GHG) emissions, environmental and

social costs. If some of the economic and other benefits / disadvantages are not quantifiable, the Consultant should provide a description of those benefits / impacts.

**Task 3: Identify specific prospective renewable energy projects for SREP funding**

9. Under this task the Consultant is specifically expected to:

- Identify specific renewable energy projects based on the above analysis, existing assessments of renewable energy resources and potential; pre-feasibility and feasibility studies; as well as resource mapping.
- Conduct trade-off analysis of promising renewable energy projects considering advantages and disadvantages, and prioritize the projects based on at least four criteria agreed with the Government. The criteria may also include, but not be limited to, LECs, employment impacts, energy security, GHG reduction, finance-ability, the technical and financial capacity of proponents, timetable for development etc.
- Recommend workable business models and financing schemes for the identified priority projects, including discussion of the potential sources of funding, support if any, from the providers of funds and the technical and financial capacity of developers and operators of the project. As part of this activity, the Consultant should review existing financial mechanisms used for renewable energy projects, and consider whether it is best to expand those same mechanisms to cover the new renewable energy technologies or set up new financial mechanisms.
- Conduct environmental and social screening and ensure that environment and social safeguards requirements of the World Bank and GOL are adequately addressed as part of the identification of specific renewable energy projects for inclusion in the investment plan. Depending on the scope and nature of the projects: (i) identify possible gaps in the coverage of the expected positive and negative environmental and social impacts of the proposed projects, pointing out whether the existing information and data gaps will preclude proper analysis/prioritization of a project and will need to be filled in before it is recommended for the inclusion into the investment plan; (ii) note any environmental and social issues (such as land issues or disputes, local pollution or noise etc.) . As part of this activity, the Consultant should also discuss the potential gender benefits from identified priority renewable energy projects.

**PHASE 2 – Preparation of Draft SREP Investment Plan for Lesotho**

**Task 4: Prepare the draft Investment Plan for developing renewable energy in Lesotho, based on the findings from Phase 1 analysis and the consultations with key stakeholders.**

10. As part of this task, the Consultant is specifically expected to:

- Prepare the draft Investment Plan following the structure defined in Annex A, based on prioritized list of renewable energy investments. The draft Investment Plan, among other key aspects, shall: (a) describe the role of SREP in initiating a process leading to transformational growth; (b) describe likely development impacts and co-benefits from SREP investments; (c) provide estimates of the financing requested from SREP; and (d) assess the absorptive capacity of SREP and leveraged resources.

- Prepare concept briefs of the priority investments for SREP funding as per template presented in Annex B.
- Facilitate further consultations with a broad segment of stakeholders, including civil society and traditional organizations, on the Investment Plan and proposed specific investments, including their potential environmental and social impacts and benefit, and the level of public support for the proposed investments.
- Identify the issues, including environment and social, that need to be addressed in order to successfully allow the implementation of the proposed Investment Plan.

15. The Investment Plan shall also meet the requirements of, and be compatible with, the procedures and goals of the SREP. The draft investment plan will be revised and finalized in response to comments received from stakeholders.

### **IMPLEMENTATION**

16. The Consultant shall closely coordinate the implementation of the activity with the SREP focal point and the task force team and will report to the designated staff of the task force team. The Consultant should closely collaborate with the project team representing the Multilateral Development Banks (MDBs), utilities, and other stakeholders and keep them posted/up-to-date on the progress, deliverables and issues during all stages of the project. The Consultant should consult with and ensure the investment plan is broadly supported by the key stakeholders in Lesotho.

### **DEADLINES AND DELIVERABLES**

17. The Consultant should submit the following reports and deliverables as specific in the below Table 1. All reports and deliverables should be submitted in English language. The Consultant should also make available all the relevant analytical material in MS Word, MS Excel or other software format.

**Table 1: Consultant Deliverables**

<b>Deliverable</b>	<b>Deadline</b>
Task 1 and Task 2 Reports	Contract signing + 7 weeks
Task 3 Report	Contract signing + 10 weeks
Draft Investment Plan	Contract signing + 14 weeks
Consultation meetings and comments	
Final Investment Plan	Contract signing + 22 weeks

### **CONSULTANT QUALIFICATIONS**

18. The consultant will be a firm.

19. The firm to be contracted is expected to bring together a balanced level of national and international expertise. Consortiums of local and international firms are particularly encouraged. The Consultant that will perform the scope of work shall contain, but not be limited to, the following key expertise:

- A broad range of knowledge, skills and experience covering energy planning, renewable energy, economic and financial analysis of energy investment projects, and the following minimum qualifications:
- Expertise in developing and managing energy projects or programs and in renewable energy investments such as solar PV, wind, biomass and biogas projects;
- Expertise in conducting environmental and social screening of energy projects, programs or investments, including good knowledge of the World Bank's safeguard policies;
- Expertise in design and implementation of national energy plans or SREP investment plans, inclusive of a mix of energy technologies (diesel, hydro, solar, geothermal, and wind etc);
- Expertise in technical assessment, economic and financial analysis of energy sector projects or programs, including renewable energy projects;
- Expertise in the areas of policy and regulatory requirements in energy sector development, including renewable energy development;
- Expertise in rural electrification through grid extension, off-grid renewable energy and mini and micro-grid projects;
- Relevant experience in the energy sector of Lesotho;
- Experience in conducting key stakeholder workshops and consultations;
- Experience in working with government;
- Experience in working on donor funded and supported projects and working with multilateral and bilateral donors;

## ANNEX A: INVESTMENT PLAN TEMPLATE

- 1) Proposal Summary (2 pages)
  - a. Objectives
  - b. Expected outcomes
  - c. Program criteria, priorities and budget
- 2) Country Context (2 pages)
  - a. Energy sector description (market structure, demand supply, and dispatch composition, electricity cost and pricing) incl. renewable energy status
  - b. Gap/barrier analysis; needs assessment
- 3) Renewable Energy Sector Context (2 pages)
  - a. Analysis of Renewable Energy options (technology, cost, mitigation potential, barriers, environmental and social benefits and impacts)
  - b. Government plans or strategy for the sector (willingness to move towards renewable energy investments, existing or envisioned policy, regulation, plans, and resource allocation)
  - c. Institutional structure and capacity (technical, operational, financial, environmental and social, equipment supply, information)
  - d. Role of private sector and leverage of resources
  - e. Ongoing/planned investment by other development partners
- 4) Contribution to National Energy Roadmap (2 pages)
  - a. Likely development impacts and co-benefits of SREP investment
  - b. How SREP investment will initiate a process leading towards transformational growth
- 5) Program Description (6-8 pages)
  - a. Capacity building and advisory services
  - b. Investment preparation activities
  - c. Technology deployment investments
  - d. Parallel activities to be funded by other development partners
  - e. Environmental, social and gender risks, impacts and co-benefits, including a summary of provisions for further environmental and social assessments, consultations and development of mitigation and compensations measures as part of the implementation of any project identified in the IP, in view of World Bank safeguard policies and national legislation.
- 6) Financing Plan and Instruments (3-4 pages)
  - a. Budget envelop for investments
  - b. Costs and sources of funding
  - c. SREP assistance (grant, concessional debt, etc.)
  - d. Recipients of funding
- 7) Additional Development Activities (2-3 pages)

- a. Leverage complementary co-financing with other development partners such as bilateral organizations, private sector, and financial institutions
- 8) Implementation Potential with Risk Assessment (2 pages)
    - a. Country/regional risks - institutional, technology, environmental, social, financial
    - b. Absorptive capacity for SREP and leveraged resources
  - 9) Monitoring and Evaluation (1/2 page)
    - a. Results framework table

#### Annexes

Information should be included in annexes on the following areas:

- Assessment of countries absorptive capacity
- Stakeholder consultations
- Co-benefits
- Existing activities in the field of renewable energy, particularly activities of other development partners
- Independent Technical Review: matrix addressing comments and Government/MDB responses
- Social and environmental issues, benefits and constraints, including provisions for, and guidance on, further environmental and social assessments, consultations and development of mitigation and compensations measures and plans as part of the implementation of any project identified in the IP, in view of World Bank safeguard policies and national legislation.

Note that the Independent Technical Review report should be submitted as a separate file.



## **ANNEX B: CONCEPT BRIEF TEMPLATE**

For each Investment Plan component, an investment concept brief (maximum two pages) should be provided as annex that includes:

- Problem statement (1-2 paragraphs)
- Proposed contribution to initiating transformation with reference to NERM(1-2 paragraphs)
- Implementation readiness (1-2 paragraphs)
- Environmental and social issues / constraints and recommended level of environmental and social assessments, consultations and mitigation/compensation plans to be done during Project preparation as per World Bank's safeguard policies (1-2 paragraphs)
- Rationale for SREP financing (1-2 paragraphs)
- Results indicators
- Financing plan
- Project preparation timetable
- Requests, if any, for investment preparation funding