

**PROJECT INFORMATION DOCUMENT (PID)  
IDENTIFICATION/CONCEPT STAGE**

Report No.: PIDC72941

<b>Project Name</b>	Lesotho Scaling Renewable Energy Program (SREP) Investment Plan (IP)
<b>Region</b>	AFRICA
<b>Country</b>	Lesotho
<b>Lending Instrument</b>	IPF
<b>Project ID</b>	P160583
<b>Borrower Name</b>	Ministry of Finance, Ministry of Development Planning
<b>Implementing Agency</b>	Ministry of Energy, Mining and Water Affairs
<b>Environment Category</b>	B - Partial Assessment
<b>Date PID Prepared</b>	11-Jul-2016
<b>Estimated Date of Approval</b>	30-Sep-2016
<b>Initiation Note Review Decision</b>	The review did authorize the preparation to continue

**I. Introduction and Context**

**Country Context**

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. Lesotho, with its relatively cost-effective labour and abundant natural resources (diamonds and surplus water), is well placed to take advantage of its unique location. 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.

**Sectoral and Institutional Context**

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. Although this has not been repeated, 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. Notwithstanding the absence of a formal policy, the Government of Lesotho is considering several generation options:

-Kobong Pump Storage Scheme. Identified as the preferred option for the hydropower component provided for under Phase 2 of the Lesotho Highlands Water Project, the proposed 1200MW scheme could potentially cover the future domestic demand of peak and intermediate loads for Lesotho. This would eliminate the need for the import of expensive peak and standard energy and for export of peak energy. The revenues from the export could also be used for import of less expensive off-peak energy for the pumping mode and for socio-economic development of Lesotho. The Kobong Pump Storage Scheme would take advantage of the existing Katse reservoir constructed under Phase 1A of the LHWP. This would allow a transfer capacity (export) of 1,000 MW of peak power, with a peak capacity of 200 MW available for domestic use in Lesotho. There are currently several key issues relating to this project. The optimum installed capacity, and the operation mode of the power station, still need to be determined as part of the generation system in the Southern African Power

Pool. The scheme would require energy to pump water to the reservoir during off-peak hours to ensure availability during peak hours. Thus the scheme itself does not reduce power dependency. Furthermore it would require significant strengthening of the existing transmission lines between the two countries.

-Letseng wind farm. PowerNet, a private developer, is developing a 35MW wind farm at Letseng. It has made good progress, although it is now struggling to secure the necessary land rights for the project site.

-Wind measurement project. IFC's PPP Advisory Services unit is advising the Government on a nationwide wind measurement project, with the support of several donors, including the World Bank's ESMAP unit.

-Small hydropower schemes. The Government has previously commissioned a desktop study of several small hydro schemes. It is now in discussion with IFC about the possibility of IFC's PPP Advisory Services team supporting the Government in taking one or more of them through feasibility and developing them as PPPs.

-Solar PV. Lesotho has good solar potential. The Government has received a number of unsolicited proposals, ranging from 10MW from a Chinese investor to 50MW from a consortium of Spanish / South African developers. The Government is reluctant to engage on these proposals without fully understanding what its needs are (how much solar power it requires and where on the national grid). It is therefore in discussion with IFC about the possibility of Lesotho being a pilot country for a standardized, competitively tendered solar PV PPP model that IFC is developing internally.

-Solar home systems. The Government has expressed interest in exploring models to increase the rollout of solar home systems, as part of its rural electrification initiative. IFC is working on generic PPP models (working with South Africa's Department of Energy on a pilot basis). The Government is interested in exploring the potential application of these models in Lesotho. It will be noted that these opportunities are all renewable energy projects. In practice this is inevitable.

Lesotho has very limited methane resources (less than 10MW) and utility-scale liquid fuel generation is prohibitively expensive given the significant distance from the nearest fuel terminal (Durban) and the country's high altitude (resulting in efficiency losses of up to 10%).

### **Relationship to CAS/CPS/CPF**

The new CPS has been prepared and submitted to the Board for discussion on 06/30/2016. It will be for the period FY16-19. SREP would come under Focus Area II: Private Sector Jobs Creation, which includes water and renewable energy supply for industrial, agriculture and export opportunities.

## **II. Project Development Objective(s)**

### **Proposed Development Objective(s)**

The proposed development objective is to support the Government of Lesotho to prepare a renewable energy investment plan for consideration by the SREP for funding.

### **Key Results**

SREP Investment plan prepared

## **III. Preliminary Description**

### **Concept Description**

The project will provide 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.

The project will include 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.

## **IV. Safeguard Policies that Might Apply**

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>	<b>TBD</b>
Environmental Assessment OP/BP 4.01	<b>x</b>		
Natural Habitats OP/BP 4.04		<b>x</b>	
Forests OP/BP 4.36		<b>x</b>	
Pest Management OP 4.09		<b>x</b>	
Physical Cultural Resources OP/BP 4.11		<b>x</b>	
Indigenous Peoples OP/BP 4.10		<b>x</b>	
Involuntary Resettlement OP/BP 4.12		<b>x</b>	
Safety of Dams OP/BP 4.37		<b>x</b>	

Projects on International Waterways OP/BP 7.50		x	
Projects in Disputed Areas OP/BP 7.60		x	

## V. Financing (in USD Million)

Total Project Cost:	0.3	Total Bank Financing:	0
Financing Gap:	0		
<b>Financing Source</b>			<b>Amount</b>
Strategic Climate Fund Grant			0.3

## VI. Contact point

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