



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 11-Mar-2019 | Report No: PIDISDSC24411



BASIC INFORMATION

A. Basic Project Data

Country Lesotho	Project ID P166936	Parent Project ID (if any)	Project Name Lesotho Renewable Energy & Energy Access Project (P166936)
Region AFRICA	Estimated Appraisal Date Mar 22, 2019	Estimated Board Date May 16, 2019	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Finance	Implementing Agency Ministry of Energy, Mining and Water Affairs	

Proposed Development Objective(s)

The Project Development Objective is to scale up renewable energy-based off-grid electrification and increase access to electricity in rural and peri-urban areas of Lesotho

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	52.90
Total Financing	52.90
of which IBRD/IDA	40.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	40.00
IDA Credit	40.00

Non-World Bank Group Financing

Trust Funds	12.90
Climate Investment Funds	12.90



Environmental Assessment Category

B - Partial Assessment

Concept Review Decision

Track II-The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. The Kingdom of Lesotho is a mountainous country in Southern Africa, with a unique geographical situation as it is surrounded by only South Africa. Roughly 80 percent of Lesotho's land is more than 1,800 meters above sea level; the average elevation is 2,161 m¹. Lesotho has a population of 2.1 million people, of which more than 99 percent are ethnic Basotho². 60 percent of Basotho live in the districts of Berea, Leribe, Maseru, and Mafeteng, in the arable lowlands. The remaining population lives in six districts that include the Senqu River Valley and comparatively more mountainous lands. Population growth has slowed since the early 1990s, from two percent a year to slightly more than one percent. Lesotho diaspora living abroad is approximately 135,000³ people, mostly educated professionals and mining workers in South Africa. Most people live in rural areas, but the share of the urban population has increased substantially, from 14 percent in 1990 to 27 percent in 2015.
2. Lesotho's economy has changed structurally in the last two decades; once based on remittances and agriculture, the country's economic growth is now driven by value-added output in the service sectors, such as wholesale and retail trade, and in manufacturing sectors, such as textile manufacture and mining. Economic growth is steady but has slowed down since 2011. As a result, unemployment and poverty levels are high. In 2015, the broad unemployment rate was 28 percent, and 43 percent among the youth (ages 15 to 24). The national poverty rate was 56 percent, among the highest in Africa.

Sectoral and Institutional Context

3. Lesotho's energy sector is characterized by a high reliance on biomass (wood and dung) and imported fuels (coal and petroleum products). As of 2016, electricity, which makes up only 4 percent of Lesotho's energy balance, is serving only 38 percent of the population with generation from the Muela hydropower plant (72MW) and imports from Mozambique and South Africa (60 MW and 90 MW, respectively). The rest of the population relies on multiple fuel sources to meet their energy needs. In rural areas, biomass is used for cooking and heating, and candles and paraffin for lighting. In urban areas, households rely less on biomass and more on paraffin and gas for heating and cooking. For lighting, urban households rely on a combination of electricity, paraffin and candles.
4. The Electricity sector in Lesotho is vertically unbundled with the Lesotho Highlands Development Authority (LHDA) having the mandate to generate electricity; and the Lesotho Electricity Corporation (LEC) having the mandate for transmission and distribution of electricity, and management of off-grid stations (mini-hydro and diesel) in the mountainous areas of Semonkong and Mantšonyane. LEC is responsible for electrification within its service territory.

¹ GoL, "2016 Population and Housing Census Preliminary Results Report", 2017

² World Bank Development Indicators

³ ACP Observatory of Migrations, IOM, 2014.



Outside the LEC service territory, rural electrification efforts are currently managed by the Rural Electrification Unit (REU) of the Department of Energy (DoE).

5. The electricity sector is regulated by the Lesotho Electricity and Water Authority (LEWA) with the mandate to promote the expansion of electricity supply in Lesotho, where it is economically viable and cost effective; ensure the operation and development of a safe, efficient and economic electricity sector; protect the interests of all classes of electricity consumers as to the terms, conditions and price of supply; and ensure that electrification is accelerated. Lesotho Electricity and Water Authority (LEWA) manages the universal access fund (about 18 million Maloti⁴ annually), which is the seed money used to promote national electrification.
6. Installed generation capacity in Lesotho totals 155MW⁵ and currently meets demand, although more than half of the supply is from imports of electricity. LHDA provides 40 percent of the generation capacity through the 72MW Muela hydropower plant; the rest being supplied with imports coming from ESKOM (South Africa) and EDM (Mozambique) – mostly coal-based power generation assets. According to LEC's projections, peak power demand is expected to grow to 204 MW by 2020 and 432 MW by 2030. In 2016 to 2017, LEC imported 373 GWh of electricity from South Africa (Eskom) and Mozambique (EDM) at prices which range from Maloti (M) 0.77 to 1.50 per kWh, substantially higher than purchases from Muela (M 0.13 per kWh); electricity imports amounted to 86 percent of LEC's supply costs⁶.
7. Lesotho is fortunate to have an abundance of renewable energy (RE) potential. Solar, wind, and hydropower resource potential surpasses its relatively modest energy needs. Realizing the potential of these resources is a focus of the Government's Vision 2020 Strategy and National Strategic Development Plan 2019 to 2023, viewed to be a potential catalyst for job creation and growth in private sector investment. Investment in RE is viewed as a means for addressing many of the energy sector challenges faced by Lesotho, as it would contribute to reduce Lesotho's dependence on electricity imports, alleviate fuel imports and use of wood fuel resources, provide decentralized electricity for rural development and leverage private sector investment. Despite its low market penetration, demonstrated cost effectiveness of decentralized RE technologies powered by solar photovoltaic (PV), wind, or micro-hydro could bring access to modern energy services to the Basotho who currently rely on biomass and kerosene to meet their energy needs.
8. The Government of Lesotho (GoL), with the help of development partners, has made some progress in grid-scale RE development. Lesotho's main source of power generation is the 72MW Muela hydropower plant. There is also a small 281kW solar photovoltaic (PV) installation at the Moshoeshoe I International Airport and several small hydropower plants in the country totaling around 3 MW capacity. Some large-scale PV and wind projects are currently promoted and studied by private investors, which may lead to several public private partnerships (PPP) or independent power producers (IPP) in the next few years. This aspect of RE development is covered in the SREP Investment Plan for Lesotho⁷, supported by the African Development Bank (AfDB) and other partners.

Relationship to CPF

9. The proposed project directly contributes the WBG's Country Partnership Framework (2016 to 2020) for the Kingdom of Lesotho⁸. Focus area 1 looks at Improving Efficiency and Effectiveness of the Public Sector; among the objectives

⁴ 1 US\$ = 12.5 Maluti (May 2018)

⁵ LEC Annual Report 2016 – 2017

⁶ LEC Annual Report 2016 - 2017

⁷ https://www.climateinvestmentfunds.org/sites/cif_enc/files/srep_investment_plan_lesotho.pdf

⁸ Kingdom of Lesotho: Country Partnership Framework 2016 - 2020



is improving basic education outcomes and health outcomes. By increasing access to electricity services to rural areas, social services like health and education will be easier to provide, and this will improve service delivery at schools (i.e. increase access and school completion rates) and clinics, leading to better health outcomes (i.e. HIV/AIDS awareness, prevention and treatment; TB treatment, maternal and child health and infant mortality) in the mountainous poor rural communities.

10. The project also contributes to focus area 2, Promoting Private Sector Jobs Creation particularly on objective (i) improve the business environment and diversify the economy; and objective (iv) increasing water and renewable energy supply for industry, agriculture and export opportunities. This project looks at promoting private sector led investments in off-grid electrification and distributed RE technologies. These electrification initiatives will create jobs in the construction and electrical appliance manufacturing and retailing, as well as create and sustain general business activities in rural areas. It will further help rural communities grow by facilitating income generating activities. In terms of diversification of the economy and renewable energy development, the project will facilitate the development of solar PV energy. With these focus areas, the project is hence aligned with the World Bank Group twin goals, to reduce extreme poverty and improve shared prosperity.

C. Proposed Development Objective(s)

11. The Project Development Objective is to scale up renewable energy-based off-grid electrification in rural and peri-urban areas of Lesotho.

Key Results (From PCN)

12. Key results expected from the Lesotho Renewable Energy and Energy Access Project (formerly the Lesotho Electricity Sector Development Project) would be:
 - At least US\$ 20 million of additional financing for clean energy investment leveraged.
 - At least 9,000 rural households connected to the proposed micro-grids.
 - At least 29,000 rural households provided with access to electricity to SHS or other distributed technologies.
 - At least 200,000 rural Basotho people provided with electricity, of which 50% of women.
 - At least 200 water points provided with access to electricity by solar pumps.
 - At least 30,000 MWh/year in supply of electricity generated from RE in off-grid areas.
 - At least 40,000 tCO₂eq of Green House Gas (GHG) emissions avoided.

D. Concept Description

13. The project is aligned with the GoL-endorsed Scaling-Up Renewable Energy Program (SREP) Investment Plan. Approved by the SREP Sub-Committee on December 14, 2017, the SREP Investment Plan consists of two core investment focused components. These investment components include (i) On-grid RE Technologies and (ii) Distributed RE Technologies. The program plans to enable the increased adoption of RE technologies through the development of commercial on-grid and off-grid RE markets. The project also aligns with the GoL's Vision 2020 goals to increase private sector investment in infrastructure and promote increased use of RE.
14. This project will specifically deal with the investment of Distributed RE Technologies. The project consists of financing support for micro-grids and other distributed RE technologies. Almost 60 percent of Basotho do not have access to electricity and rely mostly on biomass to meet their energy needs. The GoL views improving access to modern energy



services as a vital step in improving the livelihoods and economic opportunities for its people. Lesotho is largely mountainous and has low population density in the remote villages. This makes rural electrification using grid extensions financially unviable. Micro-grids and other off-grid technologies (i.e. Solar Home Systems) have been viewed as a preferred option for delivering electricity services to off-grid households.

15. The activities under the off-grid component will complement on-going projects and analytical activities that are being funded by other donor partners. Just as well, additional financing for this project by other donors expressing interest will be explored after project approval.
16. Solar PV mini grids have not yet been installed in Lesotho. Notwithstanding, there is substantial private sector and development partner interest in developing them. OnePower, a local private company involved in solar PV installations has identified potential sites for solar PV mini grids and is about to commission its first pilot PV mini grid in a community located on the outskirts of Maseru town.
17. The GoL has had some experience in implementing SHS activities: the REU - through a Global Environmental Facility (GEF) financed pilot project, distributed SHS to 300 households in the Linakaneng region in the Eastern highlands in 2014; the pilot ended up not being successful, by lack of maintenance mechanism. Also, since 2007, the UNDP and GEF have supported a program to promote the use of RE technologies for basic household needs like lighting, radios and cell phone charging; this project – whose sustainability is still to be assessed - installed 1,537 SHSs in the districts of Mokhotlong, Thaba-Tseka and Qacha's Nek.
18. This project will be implemented by the Department of Energy (DoE), within the Ministry of Energy, Mining and Water Affairs.
19. The SREP and IDA resources under this Lesotho Renewable Energy and Energy Access Project shall be used to fund the following components:

Component 1: Investment in Micro-grids: The funds will be used to support an initial round of tenders to procure micro-grid concessionaires. The funds could be made available in the form of attractive loans and subsidy to private micro-grids operators and investors, to complement private investment and incentivize potential operators. The intention of using these funds in the initial tenders would be to increase developer interest with the aim of attracting highly qualified bidders with track record of successfully operating micro-grids. Priority areas for privately operated micro-grids would be identified based on the site screening executed under the electrification masterplan. It is expected that the DoE will run the tenders, and private developers would build, own and operate these micro-grids and sell service directly to the rural customers. If the tariffs for specific zones are found to be too high or outside the prices being offered in other zones, then the use of SREP grant funds could be used to buy down the tariff. Funds may also be lent to the companies through the DoE.

Component 2: Investment on other distributed RE Technologies: The funds would be channeled via the DoE for on-lending to RE developers, vendors and individual commercial or residential borrowers, to manufacture, supply, maintain or use distributed RE technologies. There is currently no financial institution in Lesotho that offers financial products, specifically for RE technologies. Additional support could be provided for training of DoE on different RE technologies' financial specificities, and on how to evaluate RE projects. This component would also provide complementary support to the EU and UNDP-GEF initiatives for the establishment of local energy centers having been viewed as the most realistic option for bringing decentralized RE technologies to dispersed areas. The funds are intended to increase access to capital for RE vendors and their customers. The RE technologies supported could



include SHS and ICS⁹ devices to include solar irrigation, solar water pumps and solar water heaters. The exact set of technologies will be determined during project preparation based on discussions with DoE and the results of their pilot projects. Individual solar products will need to be compliant with the Lighting Africa standards.

Component 3: Technical Assistance and Project Management Support to DoE: This component will finance various technical assistance and capacity building activities to ensure DoE and other sector stakeholders have adequate technical, planning, and supervision capacity to implement the off-grid electrification activities. This TA component will also support the institutional strengthening and enabling environment for the off-grid electricity sector in Lesotho, and would finance studies aiming to provide more synergy between Energy and the other sectors.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The Project will be implemented nation-wide in the peri-urban and rural areas of Lesotho which currently lack access to electricity supplied from the national grid. Specific geographical locations for the sub-projects have not been identified yet, but will be selected on a demand-driven basis during the implementation phase of the project. Once the nature, scope and location of the sub-projects are known, site-specific environmental and social impact assessments, proportionate to the nature and scope of the sub-projects, will be carried out and include comprehensive description of the biophysical characteristics of the sub-project sites relevant to the safeguard analysis.

B. Borrower’s Institutional Capacity for Safeguard Policies

The Project will be implemented by a project implementing unit under the Ministry of Energy, Mining and Water Affairs of Lesotho. The Ministry has not implemented World Bank funded projects before, and therefore, the project will make provisions for the recruitment of staff dedicated to environmental and social management of the project. In particular, the Ministry will be supported by an ad hoc project implementation unit (PIU) formed with DoE staff and assisted by individual consultants; the latter will provide external expertise to fast track the project implementation’s initial phase while contributing to capacity building within the PIU.

C. Environmental and Social Safeguards Specialists on the Team

Kisa Mfalila, Environmental Specialist
Sangeeta Kumari, Social Specialist
Mantsebo Moipone Amelia Ndlovu, Social Specialist
Ntaoleng Celestina Mochaba, Environmental Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
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⁹ ICS: Improved Cooking Systems.



The Project is classified as Category B as it will finance energy investments aimed at scaling up renewable-energy based on off-grid electrification such as micro-grids, solar irrigation, solar water pumps, solar water heaters to be mounted or installed on Photovoltaic (PV) arrays or rooftops of buildings. The impacts of the investments under Components 1 (Micro-grids) and 2 (other distributed RE Technologies) will largely be positive. Socially, providing access to electricity to communities who currently have no access to the national grid, will have significant positive impacts on the quality of life of the communities, such as access to health care facilities and schools. Investments in renewable energy will also have long-term positive impacts in reducing greenhouse gas emissions (GHG) by replacing the use of biomass and paraffin lamps at household level.

Environmental Assessment OP/BP 4.01

Yes

However, during the construction phase of the project, short-term and site-specific negative environmental impacts are anticipated from site clearing activities and earth works tied with the construction of access roads, PV arrays, temporary buildings and laydown areas, resulting in direct negative impacts on soil and water bodies. These impacts would occur over a relatively short-timeframe with a relatively low intensity due to the minimal environmental footprint of the sub-projects.

Other environmental, health and safety issues will likely occur from disposal and recycling of batteries at the end of their life cycle.

For component 1 that is likely to entail minimum construction and civil works, relative labor influx will be assessed and where needed, actionable labor influx management plans will be developed to mitigate any adverse impacts on the host communities. Additionally, it is recommended that for unskilled labor the project should engage local labor to minimize labor influx and its associated adverse impacts such as increased demand and competition for local social and health services, goods and services, price hikes and crowding out of local consumers, social conflicts within and between communities, increased risk of spread of communicable diseases, and



increased rates of illicit behavior and crime. It will therefore be important to develop site-specific measures before the contractors start work, and update them as necessary to reflect project developments. Incorporating social mitigation measures into the civil works contract with appropriate mechanisms for addressing non-compliance will be important.

Component 3 (Technical Assistance) will not finance physical investments. Therefore, no direct environmental impacts are anticipated.

Performance Standards for Private Sector Activities OP/BP 4.03	No	The proposed Project will not apply World Bank Group Performance Standards.
Natural Habitats OP/BP 4.04	Yes	The policy is triggered should a sub-project site be selected close to or within a natural habitat as defined by the policy. The ESMF will provide guidance on screening and appropriate mitigation measures to ensure excavation works do not alter or cause destruction of any critical or sensitive natural habitats especially wetlands. The ESMF will also stipulate that any impact of natural habitats should be identified in the respective ESIA/ESMP of the sub-projects. It is proposed that there be a single ESMF for entire project.
Forests OP/BP 4.36	No	The proposed Project will not support physical works located within forested areas or plantations and will not include open up new forested areas. Any selected activity that will trigger the policy will be ineligible for financing under the Project. This will be clearly stated in the ESMF.
Pest Management OP 4.09	No	The proposed Project will not involve procurement of pesticides or fertilizers and does not have the potential to lead to increased use of pesticides or fertilizers. Any selected activity that will trigger the policy will be ineligible for financing under the Project. This will be clearly stated in the ESMF.
Physical Cultural Resources OP/BP 4.11	Yes	Sub-projects to be funded by the Project have not been identified yet. However, the policy is triggered. The ESMF will include Chance Find Procedures (CFP) and measures to screen for and manage potential impacts on cultural heritage or property that could be affected by earthworks. In addition, construction contracts containing excavation works will include Chance Find Procedures as a requirement for the contractor.



Indigenous Peoples OP/BP 4.10	No	<p>The policy will not be triggered as there are no indigenous peoples in Lesotho.</p>
Involuntary Resettlement OP/BP 4.12	Yes	<p>Components 1 (Micro-grids) may have limited land acquisition or subsequent loss of assets, income or restricted access to resources (whether related to private or communal resources) related to the construction of renewable energy-based mini-grids. Therefore, Involuntary Resettlement OP 4.12 is triggered to address any adverse impacts. Since the exact location of the works is not yet known, for Component 1 a Resettlement Policy Framework should be prepared, consulted and disclosed in-country and on World Bank external website prior to appraisal. This should address any negative impacts of the potential land acquisition that might cause loss of assets, income or livelihoods. In case land acquisition and/or resettlement is required in relation to the construction for Component 1, the Resettlement Policy Framework will guide the preparation of site-specific Resettlement Action Plans for the deployment of renewable energy-based mini-grids. The Resettlement Policy Framework will therefore guide the PMU in avoidance, minimization and mitigation of any potential resettlement impact. All RAPs will be prepared in a consultative process and will be disclosed thereafter.</p>
Safety of Dams OP/BP 4.37	TBD	<p>The small hydro systems to be supported by the Project are below 10MW generation capacity designed as run-of-river projects consisting of 1.5 to 2 meter height weirs constructed to divert river water to the turbines (powerhouse). Once the river water passes through the turbines and electricity is generated, the water is returned to the river downstream. The system does not involve impoundment/reservoir formation behind the weir and there will not be any alterations/changes in river flows downstream of the powerhouse.</p>
Projects on International Waterways OP/BP 7.50	TBD	<p>Majority of the rivers in Lesotho are classified as International Waterways. Once the nature, scope and location of the sub-projects is confirmed, a visual survey and assessment of the sub-project sites will be carried to confirm existence of international waterways within the sub-project areas and subsequently, notification to the riparian countries will be issued.</p>



Projects in Disputed Areas OP/BP 7.60	No	The project will not be located in any known disputed areas as defined in the policy.
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E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Nov 16, 2018

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

An Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF) will be prepared, consulted on and disclosed both in-country and on the Bank's external website before appraisal.

CONTACT POINT

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APPROVAL

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