



**The World Bank**

Mozambique Lighting and Grid Access Project (Moz-LIGA) (P165453)

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

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Concept Stage | Date Prepared/Updated: 08-Mar-2018 | Report No: PIDISDSC23351



## BASIC INFORMATION

### A. Basic Project Data

Country Mozambique	Project ID P165453	Parent Project ID (if any)	Project Name Mozambique Ligthing and Grid Access Project (Moz-LIGA) (P165453)
Region AFRICA	Estimated Appraisal Date Aug 01, 2018	Estimated Board Date Oct 16, 2018	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Economy and Finance, Ministry of Mineral Resources and Energy	Implementing Agency Fundo de Energia (FUNAE), Electricidade de Moçambique (EdM)	

### Proposed Development Objective(s)

The Project Development Objective is to increase access to electricity for households and enterprises in Mozambique.

### Financing (in USD Million)

## SUMMARY

Total Project Cost	80.00
Total Financing	80.00
Financing Gap	0.00

## DETAILS

Total World Bank Group Financing	80.00
World Bank Lending	80.00
Environmental Assessment Category B-Partial Assessment	Concept Review Decision Track II-The review did authorize the preparation to continue



Other Decision (as needed)

## B. Introduction and Context

### Country Context

**Mozambique is a low-income country in Southeast Africa with a gross national income of US\$600 per capita and a population of 29 million.** The economy is dominated by agricultural sector that accounts for 25 percent of Mozambique's GDP, and employs about 75 percent of the population, in rural areas, more than 90 percent. Despite its key role as a fundamental source of livelihoods, the agricultural sector has not been growing at a steady pace in recent years. The service sector – commerce and low-skill services – generated a large share of employment growth in the economy, with almost two thirds of jobs created in the formal economy since 2002. The extractive sector has been a driver of the recent improvement in growth. Extractives maintained double-digit output growth in 2016; this trend continued in early 2017 with a 41 percent expansion in output. Since the end of the civil war in 1992, Mozambique was able to achieve significant economic growth at an average GDP growth of 7.7 percent facilitated by trade, manufacturing, extractive industries, transport, communication, and electricity production.

**Significant achievements in poverty reduction still remain distant.** While the national headcount poverty rate dropped by 12 percentage points between 1997 and 2003, poverty declined at a much slower pace during the consecutive six years (2003-2009), falling by only 4 percentage points to reach 52 percent in 2009 and even slower between 2009-2015. Close to half of the Mozambican population (46 percent) still lives in poverty, ranking Mozambique among the countries with the highest levels of poverty in the world. In addition, distribution of poverty is uneven across the country, with rural provinces in the center and the north accounting for a disproportionate share of the poor (about 70 percent).

**Undisclosed sovereign debt has derailed Mozambique's recent economic growth.** The disclosure in April 2016 of US\$1.4 billion in commercial loans contracted by state-owned enterprises, equivalent to roughly 10 percent of GDP, undermined investor confidence and resulted in the suspension of the International Monetary Fund (IMF) program and direct budget support by development partners (DPs). Public debt reached 120 percent of GDP in 2016 while foreign direct investment and external credit lines to the private sector declined. This scenario contributed to a slowdown in the economy, with GDP growth contracting to 3.8 percent in 2016 from 7.4 percent in 2014 and GDP per capita dropping from US\$623 to about US\$383 in the same time frame. Deteriorating economic conditions resulted in depreciation of the Mozambican metical by 51 percent since August 2014. Depleted fiscal buffers resulted in Mozambique defaulting on an interest payment on its sovereign bond in January 2017. Negotiations between the Government of Mozambique (GoM) and the IMF to agree on a new program for the country are currently ongoing and expected to be finalized by early 2018. As a consequence, GoM's access to the credit market, even for concessional lending, has been severely limited and this situation is expected to be maintained in the next 2-3 years.

**Mozambique's five-year Government Plan (2015–2019) highlights agricultural and industrial development as the basis for socioeconomic development of the country.** The five-year Government Plan presents five strategic pillars to achieve accelerated economic growth and social development and targets expanded infrastructure as a key element to enhance the productive sectors of the economy, economic diversification, and improve access to markets. This calls for rehabilitating electricity infrastructure and expanding access to electricity services and is recognized as a complementary input for the delivery of other basic social services, such as health, education, and sanitation.



## Sectoral and Institutional Context

### Institutional Context

**The current institutional structure of the power sector derives from the 1997 Electricity Law.** The Ministry of Mineral Resources and Energy (MIREME) is the government entity responsible for energy policy and planning, as well as monitoring sector performance and governance. Electricidade de Moçambique, (EDM) is the state-owned, vertically integrated utility responsible for electricity generation, transmission, and distribution countrywide. Hidroeléctrica de Cahora Bassa (HCB) operates the 2,075-MW Cahora Bassa power plant and the associated transmission system. HCB is 92.5 percent owned by Companhia Electrica do Zambeze (CEZA), and 7.5 percent by Redes Energeticas Nacionais (REN), a Portuguese Government owned entity. In May 2017, the Parliament approved the creation Autoridade Reguladora de Energia (ARENE) in an effort to separate regulatory and policy functions in MIREME. The new regulatory body has been given the authority – *inter alia* – to regulate the electricity tariff, promote and monitor competition in the power sector, monitor and enforce the terms and conditions of the licenses or concession contracts in the power sector. The Energy Fund (Fundo de Energia, FUNAE) is a public body subordinated to MIREME with the aim of promoting the development and use of different forms of low-cost power and the sustainable management of power resources. Initially setup as a fund, FUNAE today operates mostly as an implementing agency notably for off-grid generation and access projects. In addition to the Electricity Law, private investment in the electricity sector is also governed by the PPP Law (2011).

**Implementation capacity of the sector is still limited.** While MIREME defines the policy, it lacks the institutional capacity to transform high level objectives into a program that can be subsequently transferred to EDM for implementation. MIREME also lacks comprehensive power sector planning capacity, affecting the ability of the ministry to steer and coordinate the strategic approach for the sector, and to prioritize projects. Similar challenges affect the recently created ARENE that needs to build capacity as it takes on greater authority in setting tariffs for electricity as well as to ensure the promotion of competition in the sector.

### Sector Context

**Mozambique is a rich in conventional and renewable energy sources and has emerged as a regional energy hub.** Mozambique has a 7.5 GW of renewable energy potential, including 5.6 GW of hydro, 1.1 GW of wind and 0.6 GW of solar.<sup>1</sup> The country has also significant experience with gas through the Pande/Temane fields. Furthermore, gas reserves in the Rovuma Basin, offshore in Northern Mozambique, are sufficiently large to be used simultaneously for exports, major industry and power generation. Mozambique also has world class reserves of coal. Part of these reserves have sufficient quality to be exported, while a significant portion can be used for domestic power generation. Mozambique is also well positioned to engage in significant regional trade. The country is well interconnected with South Africa, the country's largest purchaser of electricity - mostly from Cahora Bassa Hydropower plant – and with other neighboring countries, with opportunities for onward trade with the wider region forming the Southern African Power Pool (SAPP).

**Since 2014, Mozambique's generation capacity has expanded to 2,410 MW with significant participation from the private sector.** In August 2014, a 175-MW gas fired IPP was commissioned at Ressano Garcia (Central Térmica de Ressano Garcia – CTRG), a joint-venture between EDM (51 percent) and Sasol (49 percent), with a 20-year PPA. In December 2015, a 120-MW Gigawatt IPP was also commissioned at Ressano Garcia. In August 2017, a 40-MW gas fired IPP (Kuvaninga) was commissioned in Chokwe. All three IPPs have signed power purchase agreements (PPA) with EDM.

**Even then, demand-supply mismatch highlights deficiencies in both generation and transmission systems.** Domestic

<sup>1</sup> Renewable Energy Atlas of Mozambique, 1<sup>st</sup> edition 2014.



peak demand reached 876 MW in 2016, with total energy consumption of 5,477 GWh at the wholesale level<sup>2</sup>, growing on average at over 10 percent annually since 2011. Mozambique, as of May 2017, had about 880 MW of grid-connected generation capacity available from HCB and EDM plants and IPPs contracted by EDM, which is virtually identical to the peak demand in 2016, with practically no reserve generation capacity. Further, Mozambique's transmission system has developed as three independent networks - northern, central and southern, compromising its ability to link supply and demand centers. The northern and the central systems are connected, albeit with a relatively weak link, while there is no internal connection with the southern system, where the most of demand is located.

**The lack of an interconnected transmission system presents a challenge for operation and security of electricity supply.** Limited high voltage network translates into overloaded medium- and low-voltage lines in some key sections of network or medium-voltage lines that have been built to reach all the districts of the country that are underutilized because they only serve electricity to public entities. Both cases present an operational challenge to transfer energy at acceptable quality levels. Operational losses, currently estimated at 26 percent of the demand, reflect the need to enhance EDM's operational and commercial performance. The collection rate, on the other hand, showed tremendous improved from 77 percent in 2009 to 98 percent in 2016.

**In spite of significant tariff increments in the recent years, EDM is experiencing a fragile financial situation.** This is due to a combination of: i) a deterioration of the macroeconomic scenario; ii) adverse conditions in the regional power market (decrease in export prices); iii) limited supply from HCB due to hydrological constraints; and iv) high electricity losses – 26% of the electricity generated is lost in the system. Despite several tariff adjustments – EDM has been accumulating operational losses – on accrual basis – as well as significant payable arrears – on cash basis. EDM's financial position also worsened by the accumulation of receivables arrears, particularly from electricity exports to ZESCO<sup>3</sup>. While EDM may have turned a corner, notably from the mid-August 2017 tariff increase, it remains exposed to several exogenous factors and its financial position remains extremely tight.

**EDM has therefore embarked on an ambitious modernization program.** The program includes: a) a corporate transformation plan; b) the improvement on the system reliability; and c) a financial recovery plan. This program is currently under implementation and is being supported by DPs through investments and technical assistance, and the Bank is supporting it through the recently approved Power Efficiency and Reliability Project (PERIP – P158249) which focuses on the rehabilitation and upgrade of the network infrastructure, the enhancement of EDM commercial and operational efficiency and the provision of technical and capacity building. PERIP includes the consolidation of EDM's management information system as well as a second phase of the revenue protection program (RPP) aimed at eliminating commercial (non-technical) losses in electricity supply from EDM's 17,000 largest customers representing more than 50 percent of the company's revenues through remote monitoring of consumption using advanced metering infrastructure. In addition, the Bank (with SE4All funds) has been supporting EDM on the analysis and revision of EDM's financial recovery plan through a cost of service study that integrates detailed financial modeling with a tariff calculation methodology that allows the tariff to reflect the efficient cost of service provision.

### Electrification Program Context

**EDM currently serves more than 1.5 million customers, however, expansion to new consumers has slowed down significantly.** The pace of electrification has reduced to 40,000 new connections in 2016 compared to 120,000 new connections annually in previous years and Mozambique's electrification rate present vast disparities between urban and rural areas (54% in urban and 6% in rural). In the previous years on-grid electrification was vastly supported by DP

<sup>2</sup> This excludes the BHP Billiton's aluminum smelter MOZAL. MOZAL's annual electricity consumption at more than 8 TWh at close to 1,000 MW of peak demand, is larger than the entire consumption for the rest of the country.

<sup>3</sup> Throughout the year 2016, Zambia Electricity Supply Company (ZESCO), accumulated arrears to EDM to the value of US\$60m. Repayment of these arrears is under negotiation between the two utilities.



financing, through initiatives such as the Energy Development and Access Project (EDAP, P108444), which contributed to increased access to EDM's network.

**The efforts to scale-up off-grid electrification by EDM and FUNAE remains nascent.** FUNAE has been active in securing government and DP funding for the implementation of off-grid power production systems. To-date, FUNAE was able to connect about 260 villages, 580 schools and 561 health centers through mini-grids. Although FUNAE does not have the mandate to operate and to provide electricity services, it has performed this task in the past without any government supervision on the level and quality of service provided. EDM is also serving some isolated areas through mini-grid systems mostly as a consequence of lack on a national interconnected system. While several initiatives are being considered to invest in mini-grids in Mozambique, there is no legal framework in place for the regulation of tariffs, concessions or legal basis to apply the public-private partnership laws for rural electrification. MIREME is currently receiving support from the EU Renewable Energy Cooperation Program (RECP) for legal assistance for a mini-grid legal framework. In addition, Power Africa, through the SPEED+ program, is supporting MIREME and ARENE with capacity building and technical assistance on legal and regulatory enabling environment for off-grid development.

**The National Electrification Strategy has offered the platform to build technical, institutional, and financial foundations of access expansion.** The government, with Bank support, sponsored and hosted several consultations and workshops for internal and external audience since October 2016 to discuss sector challenges and principles of an electrification strategy that allows Mozambique to achieve full access by 2030, in line with the U.N. Sustainable Development Goal #7 – Affordable and Clean Energy. Cabinet approval of the NES is expected by January 2018. Consensus was reached on the following overall principles for electrification:

- a. The NES focuses on developing electrification in the country (access to electricity service) independently of the geographical localization of customers (rural, urban, peri-urban) and type of clients (commercial or social) to meet that target. Electrification will be based on grid-equivalent service. Where the connection cost per consumer exceeds US\$2,000/kVA, off-grid alternatives will be considered.
- b. MIREME will take leadership as the main coordinator of the electrification program, leading the electrification planning process; EDM and FUNAE will be the main implementing agencies, in close coordination with the Energy Regulatory Authority (ARENE), and the private sector.
- c. The electrification programs should contemplate planning and execution of all investments needed to actually connect new users (in particular individual LV drops), using implementation arrangements to ensure least-cost connections.
- d. The responsibility for the provision of electricity services in specific areas has been delimited through the definition of EDM's "Own Expansion Area" (OEA). The OEA is the area (determined as 100 meters on each side of a low voltage line) in which EDM has the obligation to connect and provide electricity services to anyone that requests the service and pays for the connection charge. Non-Own Expansion Area (non-OEA) is any location that is not within the OEA. Inside the non-OEA, EDM is not obliged to connect to the grid everyone who requests service. Capital expenditures in non-OEAs will be financed according to the mechanisms developed by GoM. EDM will own these assets and, thus, is not obligated to repay them. However, households and other consumers connected in a non-OEA are EDM customers, EDM is responsible for operating and maintaining these assets, and the operational costs are recognized in the tariff.
- e. Implementation of a levy where the proceedings are earmarked to fund electrification, including appropriate fund management. Uniform tariffs set for each category of customer and the tariff is to be sustainable (reflect the efficient cost of service provision) but balanced with adequate cross subsidies for the poorest population. EDM's allowed revenues are to be sufficient for EDM to recover all operating



costs (including financing costs). Tariffs will be periodically adjusted to reflect changes in uncontrollable costs.

**Reaching universal electrification by 2030 will need US\$6.5 billion of investments across the sector value chain.** Electricity connections need to ramp up from 165,000 a year in 2018 to 350,000 in 2020 to 590,000 in average between 2025 and 2030. Quintupling the number of consumers from about 1,550,000 today to about 7,800,000 by 2030 challenges not only distribution and commercial practices but also transmission and generation. It will require a complete internal restructuring of EDM's management, operations, logistics, technical staff, and systems. It also represents a financial challenge for Mozambique as the total cost of achieving universal access is estimated by the NES in US\$6.5 billion.

**The development of the NES is simultaneously complemented by two key technical assistance.** While the NES is a policy document to support electricity access development in Mozambique, it needs to be complemented with additional technical assistance to transpose policy decisions into action plans. Two activities are paramount for the effective implementation of the NES: i) geospatial planning tool; and ii) low cost grid design techniques; these activities are also supported by the Bank, with ESMAP funding.

- f. Geospatial Planning Tool: MIREME, EDM and FUNAE have started the preparation of a Geospatial information system (GIS) planning tool that will allow planners to model least-cost electrification technologies and thus determine how to optimally expand the electrical grid, while identifying economically-viable mini-grid sites, and suggesting priority focus areas for standalone solar companies. This activity will map existing and prospective demand (households, commercial and industrial customers, mines, community facilities, etc.), existing grid and micro-grid assets, infrastructure network (roads, mobile phone posts), energy resources (solar insolation, micro-hydro sites), and then apply algorithms for least-cost option for grid extension, mini-grid, and standalone solar technology. The outputs of the planning study should be MIREME's short- to medium-term electrification planning program.
- g. Low Cost Grid Design Techniques: where grid extension is prioritized, low cost design techniques can be employed to optimize the use of resources and, thus, maximize access. This technique promotes the use of single-wire earth return (SWER) and shield wire schemes (SWS), instead of the traditional three-phase lines currently used in Mozambique for grid-based electricity access expansion when the load and the geographic conditions are adequate. Leveraging some of these techniques could easily maximize the number of villages that can be connected to the existing high-voltage network while minimizing development costs.

**The proposed project represents a coordinated effort from the Development Partners (DP) to implement the NES.** Such an effort could harmonize procedures for faster implementation and establish a pipeline of projects to support on-grid and off-grid electrification efforts in Mozambique for about US\$330 million over the immediate term across both grid and off-grid. Recognizing the need to harmonize and simplify procedures independently of the sources of financing, the European Commission, Embassies of Norway and Sweden and the World Bank are working jointly to establish a Trust Fund to be administrated by the World Bank. This will facilitate the implementation of the electrification program and will ensure that resources fully support the principles of the NES established by the GoM.

*Table 1 – Pipeline of Donor's Support for Electrification in Mozambique*

DP	Off-grid	On-grid	Project
Belgium	\$13.5		RERD 2 Renewable energy for Rural Development
DFID	\$44.5		BRILHO (Energy Africa)
Emb of Norway		\$20.0	Moz-LIGA (MDTF)
Emb of Sweden		\$20.0	Moz-LIGA (MDTF)



EU	\$59.0	\$30.0	Electrification Financing Initiative (ElectriFi) / Moz-LIGA [MDTF]
KFW		\$21.0	EDM Power Network Modernisation Programme
SIDA		\$41.0	Electrification Project
World Bank	\$10.0	\$70.0	<i>Mozambique Lighting and Grid Access Project (Moz-LIGA)</i>
<b>Total</b>	<b>\$127.0</b>	<b>\$202.0</b>	

Source: World Bank

**The proposed project presents an opportunity to explore nexus with agriculture and telecom.** The expansion of electricity access in rural areas, either through grid densification or mini-grids, need to be preferably anchored in non-residential customers to contribute to the sustainability of the service provision. Electricity demand from anchor loads, such as mills, water pumps, mobile antennas, can greatly contribute to enhance the attractiveness of certain regions for the development of electrification programs thanks to the spillover effect of electricity in regional economic development. The GIS electricity planning tool can overlay such demand centers to emerge with attractive sites for project development.

#### Relationship to CPF

The proposed operation is fully aligned with the World Bank's ongoing Country Partnership Framework (CPF) for FY17–FY21. In particular, the proposed operation will directly support, under Focus Area 1 ("Promoting Diversified Growth and Enhanced Productivity"), the strategic objective of Expanding Access and Improved Reliability of Electricity by helping increase the delivery of electricity services through grid extension and provision of off-grid solutions throughout the country. The Project would also help meet the Bank's twin goals of poverty reduction and shared prosperity, and is aligned with Sustainable Development Goal 7 (SDG7), Sustainable Energy for All (SE4ALL), and World Bank's Energy Sector Directions Paper (ESDP). Providing electricity connections will increase access to electricity services for poor households in rural and urban areas enabling opportunities to study and work, contributing to raising quality of life and improving safety at night and stimulating off-farm activity and economic interaction. Increased access to reliable electricity supply will not only lower costs and improve the profitability of business enterprises, but is also key to enabling the set-up of new private sector-led enterprises, which stimulate GDP growth.

The Bank's portfolio is well aligned with principles of 'Maximizing Finance for Development'. The proposed Project is part of a larger comprehensive World Bank engagement in the energy sector providing support across the value chain. The World Bank Group is leveraging synergies through the implementation of the Joint Implementation Plan (JIP) which aims to have a transformational impact to strengthen Mozambique's energy supply. Under the JIP, IDA financing focuses primarily on improving electricity services through grid rehabilitation and reinforcement as well as strengthening of the financial and operational functioning of the utility through the recently approved Power Efficiency and Reliability Improvement Project (PERIP) along with public sector investment in the transmission system. The proposed Project provides public sector financing for grid electrification where commercial financing is not considered viable, while also supporting increased private sector participation in off-grid service delivery. The pilot scale off-grid activities and the institutional strengthening can further support increased commercial financial flows in the future. In addition, the new approaches for on-grid and off-grid electrification identified in the NES will be incorporated in the proposed Project to optimize resources for electricity expansion. The private sector could play a substantial role in developing the potentially large energy sector projects, and the proceeds from regional energy trade could be used to supplement finance for access and system expansion at the national level.



### C. Proposed Development Objective(s)

The Project Development Objective is to increase access to electricity for households and enterprises in Mozambique.

#### Key Results (From PCN)

##### PDO level indicators:

- People provided with new or improved electricity services
- Commercial enterprises provided with electricity services
- Community facilities (health, education, administrative buildings) provided with electricity services

### D. Concept Description

The proposed Project will support the expansion of access to peri-urban and rural areas by harnessing and extending existing grid network in OEA and Non-OEA areas and by piloting mini-grids in Non-OEA areas. The Project will support three components that aims at connecting on-grid and off-grid households based on a sustainable approach to electrification that incorporates proven international experience, technical assistance and capacity building support.

**Component 1: On-grid electrification (US\$67 million IDA).** The on-grid electrification component will finance the design, materials and construction works required to connect all households in high population density peri-urban areas located close to existing electricity networks (both in OEA and non-OEA areas). This component will be implemented by EDM and it is expected to provide connections to about 150,000 households (approximately 900,000 beneficiaries). This component will pilot the introduction of new implementation arrangements (e.g., clearer responsibilities for each implementing agency and enhanced supervision arrangements) and new procurement arrangements (e.g., procurement of main equipment in bulk and independent contracts for construction and installation) to maximize the resources available and efficiently implement the Project with the expectation to reduce cost and reach more customers.

**Component 2: Off-grid electrification through mini-grids (US\$10 million IDA).** This component will be implemented by FUNAE and will support the implementation of mini-grids, on a pilot basis, whose connection to the national grid is not viable in the short- and medium-term. The component will pilot the implementation of the off-grid business model proposed in the NES, where Solar PV mini-grids (with battery storage) are clustered on geographical basis and developed using a PPP model where FUNAE invests in land, distribution network and basic support infrastructure, and the private sector invests in, operates and maintains the generation facilities, and sells power to EDM under a Power Purchase Agreement. EDM would be responsible for retail distribution of electricity and billing collection, reducing collection risks from the private operator's side. Typically, the schemes will be implemented in areas of 150-400 prospective users and approximate demand of 250-500kVA.

**Component 3: Technical Assistance and Implementation Support (US\$3 million IDA).** This component will finance various technical assistance, capacity building activities and implementation support to MIREME, EDM, FUNAE and ARENE to ensure project sustainability and the monitoring of the impact of the interventions devised and implemented within the other components. The team will explore in detail the activities to be carried out by other DP, particularly those for the newly created ARENE, to ensure complementarity on the activities to be supported under this component. While these activities will be determined during Project preparation, some preliminary areas of support could include:

- h. Technical assistance on GIS electrification planning and monitoring: this subcomponent will support the effective implementation of the Geospatial planning tool with capacity building for the GIS steering group



(integrated by MIREME, EDM and FUNAE). In conjunction with the planned geospatial electrification planning tool, organizational arrangements and capacity strengthening needs will be identified to maintain a comprehensive national GIS database and allow for up-dated geospatial electrification planning in the future.

- i. Consumer awareness campaign and customer satisfactory survey: this subcomponent will finance the design and implementation of consumer education campaign and satisfactory survey for the provision of on-grid and off-grid electricity services, safety measures and the efficient use of electricity.
- j. Technical Assistance and Capacity Building on Regulatory Support: This subcomponent will support the provision of consultancy services that will be required to complement and build capacity on regulatory aspects derived from electrification processes, like, technical standards for isolated systems, licensing procedures, tariff applications, data collection and dissemination of monitoring activities, etc.
- k. Implementation support: This subcomponent will support project management-related expenses such as the financing of external audit, oversight of implementation of the environmental and safeguards instruments for the investments, as well as the oversight of health and safety aspects during construction and operation, office equipment, and incremental operating costs for EDM and FUNAE.

## SAFEGUARDS

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

The investment program, although to be confirmed, is thus likely to be composed of a large number of small-scale and dispersed interventions that comprise urban and rural areas of Mozambique. Given the nature, scale and scope of the infrastructure investments planned, no significant environmental or social impacts are foreseen and no protected areas for nature conservation, species or habitats of particular interest will be directly or indirectly affected. The proposed rating for the project is Category B. It is expected that most of the potential adverse environmental and social impacts associated with the project investments, including the ones to be potentially developed by private sector (under component 2), will be avoided and/or mitigated through provisions adopted during the project preparation phase and/or the development of the technical designs. An Environmental and Social Management Framework (ESMF) will be prepared by the borrower comprising, at a minimum, a set of Environmental and Social Management Plans (along the lines of OP 4.01) to be adopted by EDM, FUNAE and contractors, with additional guidelines prepared to address natural habitats and cultural heritage issues, as needed, and determine once the indicative investment program is available. Screening, supervision and monitoring procedures will be included in the ESMF. In addition, preliminary assessments should be conducted by EDM of current operating conditions regarding the management of effluents and emissions, and contaminated soils, to identify potential environmental liabilities, and especially the presence of hazardous materials in transformers and capacitors at old sub-stations. If needed, in such cases, the handling and disposal of such materials, including worker and public safety, will be an important consideration of ESMF.

### B. Borrower's Institutional Capacity for Safeguard Policies

EDM has an Environmental and Social Unit (ESU) responsible for assessment and implementation of social and environmental aspects. The unit has recently executed two World Bank financed projects (the Electricity Development Access Project [EDAP - P108444] and the Power Efficiency and Reliability Improvement Project [PERIP - P158249]. These projects allowed EDM to gain experience on the World Bank safeguard requirements. FUNAE also recently implemented



and completed the EDAP and has built capacity in assessing and implementing safeguard requirements as well. The proposed ESMF will be prepared and implemented by EDM's existing ESU and FUNAE. Capacity in both entities will be further strengthened under the project through technical assistance (Component 3) to ensure that safeguards policies and applicable national environmental and social regulations are complied. The ESMF will include the environmental and social management roles and responsibilities of the contractors and the supervising engineers. In addition, an engineering/safeguards supervision and monitoring and evaluation consultant for implementation support for the proposed interventions, will be hired to support the EDM-FUNAE agencies. A proposal of institutional strengthening program should also be part of the ESMF and will consider ongoing and proposed activities by EDM that could potentially stretch out its safeguards capacity and staffing.

#### C. Environmental and Social Safeguards Specialists on the Team

Paulo Jorge Temba Sithoe, Environmental Safeguards Specialist

Eden Gabriel Vieira Dava, Social Safeguards Specialist

Maria Do Socorro Alves Da Cunha, Social Safeguards Specialist

#### D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The objective of most investments considered under the project is to increase access to electricity in Mozambique. Installation or construction of short LV extensions, limited MV extensions, and some additional networks may require site and land clearance for Right-of-Way (RoW) that could lead to loss of vegetation and associated fauna, soil disturbance and erosion, increased runoff and sedimentation of water bodies, people's temporary or permanent physical displacement, including issues of community and worker's health and safety. Potential adverse environmental and social impacts of the project are expected to be moderate, reversible and temporary. An Environmental and Social Management Framework (ESMF) will be prepared by the borrower, to set forth mechanisms for screening, supervision and monitoring during implementation, including clear roles and responsibilities of client contractors and supervisors including a proposal of institutional strengthening program for EDM and FUNAE. The ESMF will comprise generic Environmental and Social Management Plan (ESMP) and subset of guidelines and code of conduct for implementers. Both ESMF and ESMPs will be consulted upon and publicly disclosed.
Natural Habitats OP/BP 4.04	TBD	To be defined, as project activities may include civil works with potential negative impacts on natural habitats (soil, water, mainly), demanding specific



		provisions for mitigation on natural habitats that will be included in the ESMF.
Forests OP/BP 4.36	No	This policy is not triggered. The area in which the project will be implemented is not known to include any forests defined under this policy. Project design will include measures to avoid areas of forest
Pest Management OP 4.09	No	Activities to be supported by this project will not involve the use of pesticides or biological control of pest management in rights-of-ways areas.
Physical Cultural Resources OP/BP 4.11	Yes	Although the project will not be involved in major civil works or large movements of earth in areas containing sites deemed physical cultural resources. To ensure due diligence, Chance Find procedures will be included in the ESMF and ESMPs to address OP/BP 4.11 basic requirements.
Indigenous Peoples OP/BP 4.10	No	There are no Indigenous People in the project area.
Involuntary Resettlement OP/BP 4.12	Yes	The project could likely finance activities such as new facilities under Component 2, or activities that include land acquisition, delimitation of rights-of-way and others with eventual conflict within rural communities and land ownership, resulting in involuntary resettlement of people and/or loss of (or access to) assets, means of livelihood or resources.
Safety of Dams OP/BP 4.37	No	This policy is not triggered as project activities will not involve the use of dams.
Projects on International Waterways OP/BP 7.50	No	The policy is not triggered, as project activities, will not involve the use of international waterways.
Projects in Disputed Areas OP/BP 7.60	No	This policy is not triggered. The project is not taking place in disputed areas.

#### E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Aug 15, 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

The safeguard-related studies will be launched in March 2018 once a better definition of the project is discussed with the government implementing agencies. It is expected to be finalized by July 2018. ESMF and RPF will be prepared by EDM and FUNAE for components 1 and 2 respectively (including project investments to be potentially developed by the private sector under component 2), consulted upon and properly disclosed prior to appraisal. The ESMF will include a robust screening process, clear guidance on preparation of specific plans/instruments during implementation and courses of actions to be taken/implemented should any of the triggered policies apply to any of the subproject.

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