Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)
## BASIC INFORMATION

### A. Basic Project Data

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Project Name</th>
<th>Parent Project ID (if any)</th>
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<tbody>
<tr>
<td>Africa</td>
<td>P164354</td>
<td>Mozambique - Malawi Regional Interconnector Project</td>
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<table>
<thead>
<tr>
<th>Region</th>
<th>Estimated Appraisal Date</th>
<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
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<tr>
<td>AFRICA</td>
<td>12-Aug-2019</td>
<td>12-Sep-2019</td>
<td>Energy &amp; Extractives</td>
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<table>
<thead>
<tr>
<th>Financing Instrument</th>
<th>Borrower(s)</th>
<th>Implementing Agency</th>
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<tbody>
<tr>
<td>Investment Project Financing</td>
<td>Ministry of Finance</td>
<td>Electricidade de Mocambique, Electricity Supply Corporation of Malawi, Ltd</td>
</tr>
</tbody>
</table>

### Proposed Development Objective(s)

The project development objective is to interconnect Malawi and Mozambique’s transmission systems to enable them to engage in bilateral and regional power trade in the Southern African Power Pool.

### Components

- **Component 1: Construction of the Transmission Interconnector and associated substations**
- **Component 2: Implementation Support and Capacity Building**

## PROJECT FINANCING DATA (US$, Millions)

### SUMMARY

<table>
<thead>
<tr>
<th>Total Project Cost</th>
<th>130.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Financing</td>
<td>130.00</td>
</tr>
</tbody>
</table>

**of which IBRD/IDA**

- 57.00

**Financing Gap**

- 0.00

### DETAILS

**World Bank Group Financing**

- International Development Association (IDA) | 57.00
IDA Credit | 15.00
ID Grant | 42.00

**Non-World Bank Group Financing**

- Counterpart Funding | 7.00
- Borrower/Recipient | 7.00
- Other Sources | 66.00
- GERMANY, Govt. of (Except for BMZ) | 42.00
- NORWAY, Gov. of (except for Ministry of Foreign Affairs) | 24.00

**Environmental Assessment Category**

**A-Full Assessment**

**Decision**

The review did authorize the team to appraise and negotiate

Other Decision (as needed)
B. Introduction and Context

Country Context

Regional Context

1. Mozambique and Malawi are part of the Southern Africa region that boasts of a diverse and significant resource endowments. The Southern Africa region covers a vast geographical area of about nine million square kilometers and is home to over 340 million people, with total GDP of about US$ 690 million (2017). The sixteen countries in the region are members of the Southern African Development Community (SADC), established in 1992 to promote socio-economic integration and political and security cooperation. South Africa is the region’s economic engine. A number of the lower income but large countries, such as DRC, Mozambique, Tanzania, Zambia, or Zimbabwe, are endowed with large and diverse natural resources and have significant potential to drive the growth and economic diversification of the region.

2. Regional integration is Southern Africa’s political and economic priority, and energy has been identified as one of the priority areas. Equitable regional integration has been one of the principal founding objectives of the SADC, with a vision of moving the region towards a common market, monetary union, and eventually an economic union with single currency. Energy has been identified as one of the SADC’s key areas for regional development and integration, to exploit the economies of scale, the diversity in the energy resource endowments, and the complementarities of these resources in terms of costs and resilience to external shocks, whether market or climate related.

3. Southern Africa Power Pool is now the most advanced in promoting regional electricity trade. Recognizing the importance of regional energy integration, in 1995 SADC created the Southern African Power Pool (SAPP), whose members include SADC’s twelve non-island countries. The main objectives of the SAPP are to promote cooperation in the regional electricity planning and operation; facilitate regional trading; increase access to electricity in rural areas; and ensure attractive investment environment. The SAPP has established a sound governance structure at the policy and operating levels, developed functioning multilateral competitive markets, and established a Coordination Center, which advises on feasibility of transmission arrangements for bilateral trade; operates the competitive markets; and monitors the operation of the power pool and adherence to the operating rules.

Mozambique

4. Mozambique is a low-income country in Southeast Africa with a gross domestic product of US$417 per capita and a population of about 30 million. It is well positioned for global trade, with four of the six neighboring countries being landlocked and is bordered by the Indian Ocean to the east. The country is endowed with ample arable land, water, energy, and mineral resources and newly discovered natural gas offshore. The economy is strongly influenced by agricultural sector that accounts for 22 percent of Mozambique’s GDP but employs about 71 percent of the population. Close to 94 percent of the poor are engaged in agriculture and most of them are rural residents. The extractives sector has been a driver of the recent improvement in GDP growth, maintaining double-digit output growth in 2016. This trend continued in early 2017 with a 41 percent expansion in output mostly driven by mineral exports.

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1 SADC was established in 1992. SADC member countries are Angola, Botswana, Comoros, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia, and Zimbabwe. (https://www.sadc.int).
2 The SAPP is the first and the most advanced power pool on the continent. Sub-Saharan Africa has three other power pools, with varying degree of institutional development and physical integration: West Africa Power Pool (WAPP); East Africa Power Pool (EAPP); and Central Africa Power Pool (CAPP).
5. **The economy is expected to continue to grow at a more moderate pace, but fiscal outlook remains fragile.** GDP growth is projected to firm-up gradually towards 4.1 percent by 2020, with upward revisions contingent on progress in exports of liquified natural gas (LNG). A reduction in direct budget support from donors and project lending equivalent to 5 percent of GDP, together with an increase in the cost of domestic financing were unanticipated fiscal shocks. The overall fiscal deficit fell from 7.1 percent of GDP in 2016 to 4.6 percent in 2017 due to increased revenue collection efforts and spending controls. However, an increase in domestic borrowing and the accumulation of arrears to private suppliers highlights the difficulties in controlling public finances and budgetary pressures will continue to be elevated. Additional costs linked to the roll-out of the electoral cycle in 2019 and the implementation of decentralization reforms are likely to add to spending pressures. When taken together with the high cost of debt service and the persistent fiscal risks from state-owned enterprises, a fragile fiscal outlook becomes evident.

6. **Poverty is expected to remain high.** The population share of the poor measured at US$1.9 per day per capita (2011 PPP) is projected to decline by less than one percentage point -- from 60.8 percent to 59.9 percent -- between 2017 and 2020. Such stagnation of poverty reduction is expected because GDP growth in per capita terms is weak, dominated by export-oriented extractive industries, and concentrated in relatively more prosperous urban areas. Due to high population growth and the absence of adequate safety nets, the number of poor households are expected to increase.

7. **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 expanding access to electricity services to all Mozambicans by 2030 to support the young and growing population with productive opportunities.

**Malawi**

8. **Malawi is located in South-East Africa with a population of about 18.5 million people.** The population growth rate is estimated at 2.8 percent per annum and is expected to reach 23 million by 2025. Malawi remains an overwhelmingly rural economy, however, the country is urbanizing relatively quickly at an annual rate of around 3.5 percent, higher than the average for Sub-Saharan Africa.

9. **The economy is largely agrarian, and poverty remains widespread.** Agriculture contributes about 30 percent of GDP, over 80 percent of total export earnings, and 85 percent of employment. The prevalence of low-productivity rain-fed agriculture constrains poverty reduction. Macroeconomic instability over the years and the predominantly agricultural economic structure, have contributed to the slow pace of poverty reduction. Current estimates using the international poverty line of US$1.90 per day indicate that 69.4 percent of the population is classified as being poor in 2017⁶. Malawi is ranked 170 out of 188 countries on the United Nations Human Development Index (UNDP, 2016).

10. **Medium-term economic prospects appear positive as the country recovers from the two years of weather-induced shocks.** The agriculture sector is heavily dependent on rainfall. In recent years, climate variability has led to a recurrence of floods and droughts in various parts of Malawi. Real GDP growth picked up to 4 percent in 2017. Inflation dropped from 9.9 percent in March 2018 to 9.3 percent by March 2019⁷. The Government of Malawi (GoMA) recently launched the medium-term strategy (third Malawi Growth and Development Strategy – MGDS III 2017 - 2022), looking beyond the recent crisis, to establish strong foundations for economic recovery and growth. The MGDS III has five main pillars, namely: (i) Agriculture and Climate Change Management; (ii) Education and Skills Development; (iii) Transport and

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5 2018 Malawi Population and Housing Census - Preliminary Report (December 2018)
7 National Statistical Office.
ICT Infrastructure; (iv) Energy, Industry and Tourism Development; and (v) Health and Population Management. Economic patterns show signs of positive structural change, with the share of agricultural employment falling and that of more productive sectors like industry and services increasing.

**Sectoral and Institutional Context**

**Table 1 Key Parameters in Mozambique and Malawi Power Sectors**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mozambique</th>
<th>Malawi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Access rate</td>
<td>31% overall with 52% in the urban areas and 4% in rural areas.</td>
<td>11% overall with 42% in the urban areas and 3% in rural areas.</td>
</tr>
<tr>
<td>Number of electricity customers</td>
<td>1,890,555</td>
<td>409,540</td>
</tr>
<tr>
<td>Installed capacity</td>
<td>2,580 MW of which 911 MW are available for domestic consumption</td>
<td>482MW</td>
</tr>
<tr>
<td>Energy mix</td>
<td>56% Hydro, 42% Gas, and 2% Imported</td>
<td>75% Hydro, 25% Thermal</td>
</tr>
<tr>
<td>% of private sector in generation</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Average cost of service</td>
<td>US$ 0.12/kWh</td>
<td>US$ 0.18/kWh</td>
</tr>
<tr>
<td>Average tariff</td>
<td>US$ 0.1/kWh</td>
<td>US$ 0.12/kWh</td>
</tr>
<tr>
<td>Average T&amp;D losses</td>
<td>26%</td>
<td>18%</td>
</tr>
<tr>
<td>Electricity bill collection rate</td>
<td>97%</td>
<td>93%</td>
</tr>
</tbody>
</table>

**Mozambique Power Sector**

11. **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 with operations in generation, transmission, and distribution countrywide. Hidroeléctrica de Cahora Bassa (HCB) is the largest power generation company, in charge of operating the 2,075-MW Cahora Bassa power plant and the associated transmission system; the generation sector is complemented by IPPs that have signed power purchase agreements (PPA) with EDM. In May 2017, the Parliament approved the creation of 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, and 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 energy and the sustainable management of energy resources. Initially setup as a fund, FUNAE today mostly implements off-grid access projects. In addition to the Electricity Law, private investments in the electricity sector are also governed by the Public-Private Partnership (PPP) Law (2011).

12. The Mozambican power sector has been developed with a two-fold objective to meet domestic electricity demand through EDM and to develop the export market as an anchor demand to exploit the large indigenous energy resources. Both these strategic objectives have competing needs due to the large investment requirements. In October 2018, the Government of Mozambique approved: i) the National Electrification Strategy focused universal access to electricity services by 2030 and ii) the Power System Integrated Master Plan 2018 – 2042. These two policy documents describe the development of the power sector in the least-cost manner and outline the investments planned in the short, medium and long-term.

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13. **The Mozambican power system is integrated with SAPP mainly through its connections with the South African network (and Eswatini), complemented by interconnections with Zimbabwe.** The regional integration strategy also includes the construction of two additional high-voltage transmission lines from Tete to the Maputo region, under the “Sociedade Nacional de Transporte de Energia (STE)” project. Each STE line is about 1,400 km long, one being a direct-current (DC) 500 kV line for bulk transmission of electricity from the Zambezi hydropower plant to the SAPP network, and the other line being an alternating current (AC) 400 kV line that would add more offtake points in Mozambique and would thus serve both the domestic and export markets. The STE lines and associated generation plants are to be developed in phases. Phase 1 includes the construction of a 400-MW gas based power plant at Temane, to be developed as an IPP project (Central Térmica de Temane or CTT) and a 560-km high-voltage (400 kV) transmission line from Temane to Maputo (Temane Transmission Project or TTP). TTP is part of the STE AC line, to be developed as a publicly funded project with EDM as its main sponsor. This integrated CTT/TTP project is being supported by IDA under the proposed Temane Regional Electricity Project (TREP) (P160427). The TREP aims to provide the additional generation that would enable Mozambique to trade power with Malawi.

14. **Mozambique is already taking advantage of its surplus energy availability and existing interconnectors to the regional power pool.** Energy exports are generally increasing with a greater share being given to the regional market. The large increase in bilateral trade in 2015 and 2016 was due to a regional drought which placed the region in a supply deficit. The diverse sources of energy (particularly gas) are not prone to seasonal or climate variations, which enables the country to sustain its levels of power production even when neighboring countries which are hydro dominant are impacted by droughts. An increasing share of power traded in the market is noted in the most recent years showcasing a higher level of confidence in the market.

15. **EDM is experiencing a fragile financial situation.** This has been due to a combination of: i) a deteriorating macroeconomic situation; ii) retail tariffs not recovering the cost of power purchases and operations; (iii) capital expenditures for rehabilitation of the network and increasing energy access not being adequately funded; iv) adverse conditions in the regional power market (decrease in export prices); v) limited supply from HCB due to hydrological constraints; and vi) high electricity losses estimated at 27 percent (in 2017). Despite several tariff adjustments, EDM has been accumulating operational losses on an accrual basis as well as significant payable arrears on cash basis. EDM’s financial position also worsened due to the accumulation of receivables arrears, particularly from electricity exports to ZESCO.\(^9\) Despite a partial debt restructuring process and a more regular electricity supply from HCB in 2018, EDM remains exposed to several exogenous factors and its financial position remains tight. To address this situation, the Government has been implementing a Financial Strengthening Plan which includes (i) performance contract of EDM through the implementation of PERIP’s Component 2 to reduce system losses, from 29 percent in 2018 down to 19 percent in 2024; (ii) a recapitalization process of EDM in line with the recommendations of the Cost of Service Study (50 percent recapitalization); (iii) capex for electricity access projects financed according to the NES; and (iv) electricity tariff adjusted in line with domestic inflation and full pass-through of generation costs.

**Malawi Power Sector**

16. The power system in Malawi until August 2016 had been vertically integrated with the national power utility ESCOM being responsible for generation, transmission and distribution of electricity. Reforms in the sector led to the unbundling of ESCOM in January 2017 into a generation company (EGENCO) and a Transmission and Distribution entity (ESCOM); the latter having the Single Buyer, and System and Market Operations departments. The objectives of these reforms were to allow for private investment in the sector particularly in the generation segment, improve the

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\(^9\) 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.

\(^{10}\) Power Efficiency and Reliability Improvement Project (P158249) – financed by the World Bank
performance of ESCOM, and strengthen the regulatory framework. These reforms were supported by the Millennium Challenge Corporation (MCC) Compact of the US Government, and by the World Bank. Malawi has an energy regulator Malawi Energy Regulatory Authority (MERA) since 2004.

17. Malawi is experiencing severe power supply constraints further exemplified by lack of connection to SAPP. As of December 2018, the country had a total installed generation capacity of 482MW, of which 75 percent is from hydropower resources along the Shire River. The country’s demand is estimated to be around 440MW leading to a supply deficit. Over the recent years, exposure to climate variability has led to reduced water levels in Lake Malawi and in the Shire River, resulting in lower generation levels (as low as 150MW) than the installed capacity which has led to prolonged load shedding of up to 12-16 hours a day. The Government has therefore resorted to expensive diesel generation of 78 MW in January 2018.

18. The GoMA is addressing these power supply challenges through an Integrated Resource Plan (IRP) that was funded under the World Bank Energy Sector Project (ESP). The IRP lays out the least cost generation and transmission expansion plan for the country for the period 2017 - 2037. The Malawi - Mozambique interconnector is selected as a priority investment and least cost option in all the scenarios examined under the IRP with its earliest commissioning in 2021. Other least cost options include the development of Mpatamanga hydro power plant (308MW), the Kamwamba Coal plant (300MW) and solar generation. The Government has recently concluded the awarding of solar IPP projects for a total generation capacity of 120MW, and an unsolicited IPP for a 40MW hydro power plant.

19. The weak financial position of the utility ESCOM hampers its ability to undertake investments and ensure reliable service delivery. The average electricity tariff is insufficient to meet ESCOM’s cash flow requirements. Due to its financial situation, the utility has no borrowing capacity and the Government has been assuming debt for meeting ESCOM’s capital expenditure needs. As a result of its financial position, ESCOM (i) has not been able to perform regular operation and maintenance (O&M), which has led to poor customer service including service interruptions and increased restoration time; and (ii) has focused on only connecting high value customers able to afford the connection charge. The average tariff for 2018/19 is MWK 88.02 (about US$0.12) and will increase to MWK 95.15 (about US$0.13) in 2021/22.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)
The project development objective is to interconnect Malawi and Mozambique’s transmission systems to enable them to engage in bilateral and regional power trade in the Southern African Power Pool.

Key Results

20. The project is expected to achieve the following results:

(a) Transmission line constructed under the project (km)
(b) Wheeling capacity enabled by the project (MW)

D. Project Description

21. The proposed project aims to create a transmission link between Malawi and Mozambique to meet increasing electricity demand in Malawi, and to open up expanded trading opportunities in the Southern African Power Pool. The 218km, 400kV High Voltage Alternating Current (HVAC) transmission line will start at Matambo in Tete Province in Central Mozambique and will cross the Malawian border into Mwanza and end at Phombeya in Balaka district in Southern Malawi. The substation works required in Mozambique and Malawi are also included in the project.
22. The project includes the following components:

Component 1: Mozambique – Malawi Power Transmission Infrastructure (US$ 127m)

23. This component will have two sub-components:

- **Sub-component 1-A: Construction of the Transmission Interconnector and associated substations – Mozambique side.** On the Mozambique side, this would include construction of approximately 135 km of 400kV transmission line, including a 1.7km river crossing across the Zambezi river in Tete, the extension of the existing Matambo 220 kV substation and installation of a new 400kV Substation bay. In addition to the proposed IDA grant, this sub-component will be co-financed with a World Bank administered grant from Norwegian Trust Fund (NTF), and a grant from the Government of Germany to be administered by KfW.

- **Sub-component 1-B: Construction of the Transmission Interconnector, and extension of Phombeya substation – Malawi side.** On the Malawi side, this would include construction of approximately 75 km of a 400kV transmission line, and extension of the existing Phombeya Substation. In addition to the IDA credit, this sub-component will be co-financed with a grant from the European Union (EU) to be administered by KfW.

Component 2: Technical Assistance (TA) and Capacity Building (US$3 million)

24. This component will support the implementing agencies (EDM and ESCOM) in project management, including safeguards supervision and a monitoring consultant for the transmission line, and related capacity building and training. It will also support market development studies to identify scope and contractual arrangements for the additional capacity on the line and future options for public-private participation in regional transmission projects. The work under this TA will complement capacity building activities in other Bank projects under preparation in Mozambique and Malawi, including the proposed Temane Regional Electricity Project (P160427) and the Malawi Electricity Access Project (P099626).

E. Implementation

Institutional and Implementation Arrangements

25. **Implementing Institutions.** ESCOM and EDM will be responsible for the implementation of the Malawi and Mozambique portions of the project respectively. In order to manage the coordination and address any issues that arise as a result of the regional nature of the project, a three-level structure has been put in place and is fully operational.

- **A joint Project Steering Committee,** comprised of senior staff from the Ministry of Natural Resources, Energy and Mining; Ministry of Finance, Economic Planning and Development; and ESCOM in Malawi, and the Ministry of Mineral Resources and Energy, Ministry of Economy and Finance and EDM in Mozambique, will provide oversight to address any inter-Governmental or inter-utility issues that need to be resolved at Government level. Such discussions at Ministerial level may be facilitated by the two CMUs as needed.
• **A joint Project Coordination Committee**, comprised of senior management from the two utilities, reports to the Project Steering Committee. The Committee is responsible for high level project coordination and for referring any critical issues to the Steering Committee. The Project Coordination Committee will submit an overall project progress report to the Project Steering Committee. The report will describe the status of the implementation of the Procurement Plans, physical progress, and financial reports for a period of twelve months. A joint Project Coordination Committee will be supported by a project coordinator consultant to consolidate information from both utilities.

• **ESCOM and EDM each have a Project Implementation Unit (PIU).** For the two utilities the PIUs include at least a Project Manager, a Project Engineer, a Social and Environmental Specialist, Procurement Specialist, Financial Management Specialist and technical specialists including transmission line and substation engineers and a staff member familiar with World Bank Procurement guidelines. EDM and ESCOM have jointly procured a contract for the feasibility study of the project under a single contract. This contract is paid by the World Bank administered Norwegian Trust Fund. The ESCOM and EDM Project Managers, with input from the Financial Management Specialists from the respective PIUs will be responsible for financial reporting of the ESCOM and EDM parts respectively. Training and capacity building for the ESCOM and EDM PIUs will be included in the project.

26. There are five key agreements governing the implementation and operation of the transmission interconnection. These agreements have been agreed and signed in April 2019. They are (i) the Project Implementation Agreement between EDM and ESCOM; (ii) the Maintenance Agreement between ESCOM and EDM; (iii) the System Operating Agreement between EDM and ESCOM; (iv) the Wheeling Agreement between EDM and ESCOM and (v) the Power Purchase Agreement between EDM and ESCOM. The Wheeling Agreement will specify a monthly payment rate from ESCOM to EDM which will cover part of the investments for the Mozambique portion of the line, irrespective of the amount of power transferred along the line. The agreements were signed on April 10, 2019.

**F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)**

The proposed 218 km Reg. Interconnector Line of which 142 km is in Mozambique, and 76 km in Malawi, runs from the Matambo substation in Tete, Moz, to the Phombeya substation in Balaka, Malawi. In Moz, line route starts in the Matambo region, most of it being in meso-plateau areas, or in flattened areas formed by small hills. The Eastern extremity of the alignment, near the Malawi border, is characterized by numerous hills, sometimes with steep slopes of between 6-25%. The project is in the Zambezi River Basin, passing through the eco-region of the Zambezian forest. In Malawi, the proposed project is located in Southern Region, in the districts of Mwanza, Neno and Balaka, that have a much higher population density than the Malawi national average, and also the highest poverty rates (63 percent). Majority (88.0%) of the households affected by the project are small holder subsistence farming households. The area is characterized by the Rift Valley Escarpment near Mwanza border, and Plateau area stretching towards Balaka. The project is located in the Zambezian and Mopane woodland ecoregion and is situated in the Shire River Basin. A 2km wide proxy alignment has been determined and ESIA/ESMP and RPF have been prepared in accordance with the laws of Malawi and Moz and WB safeguards policies and have been reviewed by the Bank. The exact scale of resettlement will be available after RAP preparation. However, initial findings from the assessment of a 2km wide proxy alignment indicate that the project will impact approx. 266 households in Malawi and 221 households in Moz. If this alignment is selected, relocation is likely as approx. 40 principal
structures in Malawi and 23 principal structures in Moz are located in the 2km wide proxy alignment. The issue of the legally required width of the special protection zone imposed by law for transmission lines in Moz will be met during RAP preparation. Thus, a 100-meter-wide corridor will be selected for RAP preparation in accordance with Moz Land Law, unless an alternative legally feasible arrangement is agreed with the Bank regarding width of special protection zone. The associated E&S impacts though site specific and mitigable, could generate complexities as these are new developments in poor rural areas, across national jurisdictions with possible migrants living across borders and involving physical or economic displacement. The project also traverses through sensitive ecosystems in the Zambezi and Shire river basins.

G. Environmental and Social Safeguards Specialists on the Team

Salma Omar, Social Specialist
Clarisse Torrens Borges Dall Acqua, Environmental Specialist
Ian Munro Gray, Environmental Specialist
Herbert Oule, Environmental Specialist
Mercy Chimpokosera-Mseu, Environmental Specialist
Paulo Jorge Temba Sithoe, Environmental Specialist
Eden Gabriel Vieira Dava, Social Specialist
Violette Mwikali Wambua, Social Specialist

<table>
<thead>
<tr>
<th>SAFEGUARD POLICIES THAT MIGHT APPLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safeguard Policies</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Environmental Assessment OP/BP 4.01</td>
</tr>
</tbody>
</table>
fossils, human graves, shrines sacred trees, or groves in the course of excavation during project implementation. There is also potential for the presence of remnant UXOs in the project area and adequate measures including a protocol for dealing with the UXOs has been outlined in the ESIA/ESMP. Impacts will occur as a result of construction and maintenance activities which includes installation of transmission towers, construction of access roads, rights-of-way (ROW) clearing and site preparation which may lead to loss of vegetation and associated fauna, soil disturbance and erosion, increased runoff and sedimentation of water bodies. A 2km wide proxy alignment has been defined and Country specific Environmental and Social Impact Assessments/Environmental and Social Management Plans (ESIAs/ESMPs) have been prepared for environmental and social risk identification, mitigation and management. The ESIAs/ESMPs present comprehensive guidance for contractors/subcontractors and consultant engineers including set of subspecific plans (Waste Management Plan, Revegetation Plan, Stakeholder Engagement and Communication Plan, Emergency Response Plan, Chance Finds Procedures and Labour Influx/Camp Management Plans, Community and Occupational Health and Safety Plans - referencing the WBG Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution - among others). They also include detailed institutional arrangements, supervision, monitoring and evaluation mechanisms, conflict resolution and grievance redress mechanisms as well as a capacity building strategy with estimated budget to strengthen the overall capacity of ESCOM and EDM to oversee the implementation of the ESMP by contractors and subcontractors. Obtaining of the required permits with regard to water use, waste disposal, etc. is the responsibility of the Contractor. Any permits to be obtained for construction, monitoring and updating licenses and permits are responsibility of the Owner’s Engineer. The commencement of construction would not be authorized until the Contractors have prepared the C-ESMP to be approved by the Client and the Bank.
<table>
<thead>
<tr>
<th>Performance Standards for Private Sector Activities OP/BP 4.03</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>While no significant negative impacts on natural habitats are anticipated by project works, the project is traversing the Shire River Basin, and the Zambezi River Basin, which have a number of large and small rivers. Therefore, this policy is triggered given the types of works, the potential locations, and associated environmental conditions. The mitigation measures for these risks are addressed in the Environmental and Social Impact Assessment/Environmental and Social Management Plan (ESIA/ESMP) for the project to ensure effective compliance with the policy requirements. The transmission line will cross areas of natural habitats, but will not affect critical natural habitats areas. According to the proposed transmission line corridor (including substation proposed sites) and the environmental studies undertaken, no established conservation area will be directly affected. ESCOM and EDM will undertake monitoring and coordination with local authorities to discourage deforestation as a result of greater access to areas crossed by the transmission corridor. The site-specific impacts identified include potential impact on natural habitat and the habitat fragmentation and impact on wildlife. Potential impact on Majete Game Reserve and the Lisungwe escarpment is avoided by rerouting the transmission line away from these areas and to avoid direct impacts and habitat fragmentation and allowing continuous movement and connectivity of wildlife. To address potential impacts on impairments of natural habitats and associated flora communities during operation phase, due to the RoW’s maintenance of regular vegetation clearing, the mitigation measures are, among others, to maintain all work inside the access road and RoW footprint to reduce encroachment on natural habits; clearly mark the extent of vegetation control in the RoW, identity and mark the vegetation to be preserved along section; use of mechanical methods for vegetation control inside the RoW, with forbid use of chemical pesticides to control vegetation; properly disposal of organic material removed; and implementation of an AIS monitoring program following the project</td>
<td></td>
</tr>
<tr>
<td>Natural Habitats OP/BP 4.04</td>
<td>Yes</td>
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construction and site revegetation in sensitive areas, forest reserves and forest stands, considering conduction along with RoW management. Impacts on bird and bat mortality will be mitigated through specific design measures on the transmission line to avoid the mortality of bird and bat species due to collisions and electrocution with high voltage power line are also considered, through the adoption of adequate engineering solution and mitigation measures during construction and operation phases. Bird diverters will be installed on transmission lines during construction phase along ecologically sensitive areas for birds. These diverters will be positioned on the top wire to make the line more visible. For the current project, it is proposed to place bird diverters while the line crosses the Zambezi Rivers along a 4 km stretch (2 km each side of a central axis represented by the river), as the river is considered to be a regional corridor for migratory birds.

During construction phase, the mitigation measures are: to establish a revegetation Plan for the loss of natural habitats, promote the use of native species and any other species of conservation concern; place bird diverters on the top wire to make the line more visible to birds, near ecologically sensitive areas, such as river crossings; installation of indicator lights at night for high towers such as those required for the crossing of the rivers; undertake bird nest surveys within 2 weeks before clearing to identify nests of protected or endangered species; where a protected or endangered species is nesting, do not undertake tree clearing within a radius of 500 m, wait until the nest is deserted; and, compensate any loss of breeding/nesting sites by the creation of suitable habitats elsewhere, notably from enhancement of degraded habitats.

During operation phase, the mitigation measures are: implement a bird mortality program in partnership with local communities that will review mitigation measures according to their efficiency and develop specific mitigation measures for species that are involved in bird mortality; make sure land planning by local authorities avoids the implementation of infrastructure or land uses that may constitute an attraction for birds, such as
landfill; undertake tree planting and implementation of artificial perching devices to reduce bird interactions with the powerline; and, schedule RoW management activities to avoid breeding and nesting seasons of bird species with special status.

This policy is triggered given that the project is traversing areas that have woodlands and natural forests. The mitigation measures for these risks are addressed in the Environmental and Social Impact Assessment/Environmental and Social Management Plan (ESIA/ESMP) for the project. Moreover, the route of the proposed transmission line was designed to avoid the Thambani Forest Reserve in Malawi and any known areas of high biodiversity importance. Direct impact on the Majete Game Reserve and the Lisungwe escarpment or the Thambani Forest Reserve are avoided incorporating a shift in the corridor in the design. Additional measures to avoid or reduce habitat fragmentation, allow continuous movement and connectivity of wildlife, and avoid bird and bat collision is included in the ESIA/ESMP. Mitigation measures to protect this area will involve the local administrations and ESCOM and EDM and will be further detailed as needed.

The project will not involve the purchase, manufacture or use of pesticides nor will it lead to increased/changed use of pesticides. The ESIA/ESMP clearly states the use of mechanical methods for vegetation control inside the RoW, which forbid the use of chemical pesticides to control vegetation.

As part of the preparation of the ESIA/ESMP a field survey was undertaken to identify and register in an inventory of any cultural and/or archaeological heritage sites. A review of the 218km length of the line aimed at identifying and documenting any traces of cultural and archaeological sites/remains along the powerline corridor and in adjacent areas to the proposed powerline yielded one known location (Salifosi graveyard) of PCR 20m outside the ROW. In spite of that, however, the proposed operation’s physical works, excavations and impounding have the potential to encounter both known and unknown physical and cultural resources.
Therefore, if any PCR is encountered, the project will use the Chance Finds Procedures elaborated in the ESIAs/ESMPs.

<table>
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<tr>
<th>Indigenous Peoples OP/BP 4.10</th>
<th>No</th>
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<tr>
<td>This policy is not applicable to Malawi and it is not triggered in Mozambique since there are no groups in the project area that meet the policy definition.</td>
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The Mozambique-Malawi Regional Interconnector Transmission Line project will entail land acquisition and displacement (both economic and physical) of people to acquire the Right of Way for the transmission line. Construction and associated civil works at the implementation stage will affect land, assets, and livelihoods. The exact scale of resettlement impacts will be clarified during implementation when TL design/route has been finalized. However, initial assessments based on a 55m proxy alignment located on the central axis of the 2km wide corridor indicate that the project is expected to impact approximately 266 households with an estimated 1,328 individuals in Malawi and approximately 221 households with an estimated population of 795 persons in Mozambique. A number of households may require to be relocated as approximately 45 principal structures belonging to 34 households (17 percent of the total impacted households) in Malawi and approximately 40 primary structures belonging to 40 different households in Mozambique are located in a 55m proxy alignment located on the central axis of the 2km wide corridor. During RAP preparation, a section specifying if there are any migrants from the other country among the PAPs, and the situation of these PAPs along the border will require attention as well as targeted livelihoods restoration measures including measures to ensure that they are treated in a manner consistent with Bank policies on both sides of the border. Replacement land for housing has been identified and will need to be assessed for suitability during RAP implementation. The initial studies from a 2km wide proxy alignment show that majority of potential PAPs are small scale farmers that will lose their crop fields (main source of subsistence/income).
Resettlement Policy Frameworks that clarify the principles, legal and institutional procedures for resettlement and rehabilitation to be applied to individual investments have been prepared, consulted upon and reviewed by the Bank and the regulatory agencies in Malawi and Mozambique and have been disclosed in both countries.

The RPFs serve as the basis for the preparation of RAPs which will be prepared in accordance to the laws of Malawi, Mozambique and the WB safeguards policies. For the Mozambique section of the line, it may be necessary to disclose a substantially complete RAP that satisfies Bank policies and is approved by the Bank, but it is subject to completion of formal requirements according to Mozambican law. Resettlement costs will be borne by the Governments of Mozambique and Malawi.

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<tr>
<th>Safety of Dams OP/BP 4.37</th>
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<tr>
<td>Projects on International Waterways OP/BP 7.50</td>
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<tr>
<td>Projects in Disputed Areas OP/BP 7.60</td>
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**KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT**

**A. Summary of Key Safeguard Issues**

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

   The project is not anticipated to lead to large scale irreversible environmental and social impacts. However, it has a high risk rating based on the operation’s large footprint that may generate complexities because of new developments in greenfield areas, across two national jurisdictions with possible migrants living across borders.

   Safeguard issues and impacts associated with the proposed project include the potential physical or economic displacement of approximately 2,123 individuals (based on an assessment of a 55m proxy alignment located on the central axis of the 2km wide corridor) to provide for the Right of Way of the transmission line; community and occupational health and safety concerns during construction; labour/worker influx, whose profile has been rated medium, and associated concerns such as risk of GBV/SEA (assessed to be of moderate to substantial risk), illicit behaviour, disease transmission, child exploitation etc.; possibility of encountering archeological relics, fossils, human graves, shrines sacred trees, or groves in the course of excavation during project implementation; There is also potential for the presence of remnant UXOs in the project area and adequate measures including a protocol for dealing with the UXOs has been outlined in the ESIA/ESMP.

   The main negative impacts of the Project are mostly associated with the clearance and establishment of the Right-of-Way (RoW). The project’s negative impacts with medium or greater residual significance include: (i) the direct loss, degradation and fragmentation of important habitats and vegetation caused by the vegetation clearance in the RoW;
(ii) the indirect additional degradation of natural habitats along the RoW during the operational phase, in particular due to the expanse of agriculture and natural resources exploitation along the RoW, given the increased ease of access to presently inaccessible areas; (iii) the direct resettlement impacts caused by the establishment of the RoW, generating the need to relocate families and compensate for affected built structures, farm lands and fruit trees; and (iv) increased mortality of birds (particularly birds with large wings spans), due to collisions and electrocution with the line and towers.

In addition, there are prevailing safeguards implementation and management capacity constraints in both ESCOM and EDM which are likely to be aggravated by the transboundary nature and scope of the project.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:
This is a greenfield project and therefore traverses agricultural and forest lands where there has been no prior large construction works. Anticipated future activities in the area include the construction of a one stop border post between Malawi and Mozambique which while not in the direct project area may never the less engender cumulative impacts. Impacts arising from loss of vegetation, especially along the wayleave, are to be minimized through the chosen alignment and the selective removal of vegetation under the powerline, together with implementation of a revegetation plan to identify and replace important species.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.
Alternative routing to avoid human settlements, forests and areas of critical habitat has been considered in the decision for the final line routing of this transmission line.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.
The project will be implemented by ESCOM and EDM both of which will set up Project Implementation Units that will have overall responsibility for safeguards management, oversee preparation and implementation of safeguard instruments.

ESCOM. Based on the assessment of safeguards implementation in preceding projects, i.e. the Energy Sector Support Project (P099626), ESCOM’s capacity to manage social safeguards is deemed weak and inadequate. ESCOM, however, has committed to a corporate reorganization that will see the hiring and maintaining experienced safeguards officers for this and other operations. With regard to this project, it is recommended that ESCOM hires i. an Environment/Health and Safety specialist and ii. a Social Safeguards Specialist in the event that the reorganization does not happen, is delayed or is deemed inadequate by the time of project effectiveness. Evidence of the necessary safeguard capacity put in place should be set as a condition for negotiations. In addition it is recommended that the project sets aside funds for safeguards capacity building in the course of project implementation. In ensuring compliance with and enforcement of national regulations and requirements on environmental and social management during construction, it is proposed that further support be sought through the district level environment departments.

EDM. EDM is undergoing a corporate reorganization and the placement and capacity of its environmental and social personnel is in uncertain, with the planning and operations responsibilities formerly assigned to the Environmental and Social Unit (ESU), now being allocated to two different units. While it is expected that EDM will establish its internal environmental and social management functions in the near future, and existing personnel currently assigned to the planning unit will be responsible for the preparation of safeguards instruments, EDM does not presently have sufficient institutional capacity to handle the safeguard issues related to a regional project. EDM’s environmental and social management capacity will be strengthened under the project through technical assistance in Components B, and through ongoing Bank-funded project implemented by EDM (Power Efficiency and Reliability Improvement Project - P158249).
5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The key stakeholders are the utilities, communities and customers that will benefit from the project, Project Affected Persons/Households and Communities, line ministries, regulatory bodies, national agencies, Private Sector, and CSOs. Extensive Public Consultations were carried out during project preparation including consultations in the preparation of the ESIAs/ESMPs, and RPFs. The safeguard instruments that have been prepared will be disclosed through press release, ESCOM and EDM websites, World Bank external website and hard copies will be made available at the affected district council offices, and at ESCOM and EDM’s regional offices for ease of access to the general public.

### B. Disclosure Requirements

<table>
<thead>
<tr>
<th>Environmental Assessment/Audit/Management Plan/Other</th>
<th>Date of receipt by the Bank</th>
<th>Date of submission for disclosure</th>
<th>For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors</th>
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<tr>
<td><strong>&quot;In country&quot; Disclosure</strong></td>
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<tr>
<th>Resettlement Action Plan/Framework/Policy Process</th>
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<td>28-Jun-2019</td>
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ESCOM websites; Hard copies at the affected district council offices and at ESCOM’s regional offices.
EDM's website.

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?
Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?
Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?
Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?
No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?
Yes

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?
Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?
Yes

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?
Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?
Yes

OP/BP 4.36 - Forests

Has the sector-wide analysis of policy and institutional issues and constraints been carried out?
No
Does the project design include satisfactory measures to overcome these constraints?
Yes

Does the project finance commercial harvesting, and if so, does it include provisions for certification system?
No

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank for disclosure?
Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?
Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?
Yes

Have costs related to safeguard policy measures been included in the project cost?
Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?
Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?
Yes

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|                      | Zayra Luz Gabriela Romo Mercado

Approved By

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|-----------------------|---------------------|-----------------
| Practice Manager/Manager: | Sudeshna Ghosh Banerjee | 26-Jul-2019
| Country Director:     | Vijay Pillai        | 01-Aug-2019 |