



# Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 20-Sep-2023 | Report No: PIDC36024



**BASIC INFORMATION**

**A. Basic Project Data**

Project Beneficiary(ies) Mozambique	Operation ID P179797	Operation Name Green Energy Corridors Project	
Region EASTERN AND SOUTHERN AFRICA	Estimated Appraisal Date 29-Jan-2024	Estimated Approval Date 13-Feb-2025	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing (IPF)	Borrower(s) Ministry of Economy and Finance	Implementing Agency Electricidade de Moçambique (EDM), Ministry of Mineral Resources and Energy, Gabinete De Implementação Do Projecto Hidroeléctrico De Mphanda Nkuwa (GMNK)	

**Proposed Development Objective(s)**

Enhance transmission capacity for domestic and regional markets and support renewable electricity capacity addition in Mozambique.

**PROJECT FINANCING DATA (US\$, Millions)**

**Maximizing Finance for Development**

Is this an MFD-Enabling Project (MFD-EP)? Yes

Is this project Private Capital Enabling (PCE)? Yes

**SUMMARY**

<b>Total Operation Cost</b>	<b>336.00</b>
<b>Total Financing</b>	<b>133.00</b>
<b>of which IBRD/IDA</b>	<b>100.00</b>
<b>Financing Gap</b>	<b>203.00</b>

**DETAILS**



World Bank Group Financing	
International Development Association (IDA)	100.00
IDA Grant	100.00
Non-World Bank Group Financing	
Other Sources	33.00
African Development Bank	33.00

  

Environmental and Social Risk Classification	Concept Review Decision
High	The review did authorize the preparation to continue

## B. Introduction and Context

### Country Context

1. **Mozambique enjoys a strategic location and ample resources for development.** It borders Tanzania, Malawi, Zambia, Zimbabwe, South Africa, and Eswatini. Its long Indian Ocean coastline of 2,500 kilometers faces east to Madagascar. Four of the six countries it borders are landlocked and dependent on Mozambique as an entry point to global markets through three deep seaports. Mozambique’s strong ties to the region’s economic engine, South Africa, underscore the importance of its economic, political, and social development to the stability and growth of Southern Africa as a whole. About 51 percent of Mozambique’s population is women and girls, and about two-thirds of its estimated 33 million people live and work in rural areas. The country is endowed with ample arable land, water, energy, mineral resources and offshore natural gas. Despite the geographic and resource advantages, the country is also highly prone to natural disasters and climate risks such as cyclones, flooding, extreme heat, earthquakes, tsunamis, and water scarcity.<sup>1</sup>

2. **Mozambique’s long spell of rapid economic growth was briefly stalled due to natural disasters and the COVID-19 pandemic, but economic recovery has gained momentum.** Economic growth accelerated remarkably following the end of the civil war in 1992, with a compound annual growth rate (CAGR) of real per capita gross domestic product (GDP) of 4.7 percent between 1992 and 2015. However, growth decelerated sharply following the hidden debt crisis in 2016 during which undisclosed debts in the amount of US\$1.3 billion led to a crisis of economic governance.<sup>2</sup> The real per capita GDP CAGR dropped to 0.4 percent for the period 2016-2019. Natural disasters in 2019, including Cyclones Idai and Kenneth, and the COVID-19 pandemic further pushed real per capita GDP growth down to a CAGR of -2.3 percent for 2019-2021.<sup>3</sup> Growth rebounded in 2022, with a 4.1 percent increase in GDP, and is expected to reach 6 percent over 2023-2025, driven by continued recovery in services, increased liquefied natural gas production, and high commodity prices.<sup>4</sup>

<sup>1</sup> <https://thinkhazard.org/en/report/170-mozambique>

<sup>2</sup> World Bank, [Mozambique’s “hidden debts”: Turning a crisis into an opportunity for reform, April 2022](#)

<sup>3</sup> IMF, World Economic Outlook, October 2022

<sup>4</sup> World Bank. 2023. Mozambique Country Economic Memorandum © World Bank.

<https://www.worldbank.org/en/country/mozambique/publication/mozambique-economic-update-9>



3. **The slowdown in economic growth was exacerbated by an armed insurgency in Northern Mozambique.** Since October 2017, the province of Cabo Delgado, which lags much of the rest of the country in terms of socioeconomic and development indicators, has been experiencing an armed insurgency. To date, the conflict has resulted in over 4,500 fatalities, with just over 800,000 people displaced from their homes – down from the peak in November 2022 of 1 million. The increased security has also supported a growing trend of returns, with 420,000 formerly displaced people having returned to their homes. However, the humanitarian situation remains critical, with around two million people in the three northern provinces of Niassa, Cabo Delgado, and Nampula in need of basic assistance.

4. **Poverty and inequality levels are high, even compared to other Sub-Saharan African (SSA) countries.** GDP per capita stands at US\$535 which is around the same level as Malawi but significantly lower than other neighboring countries (Tanzania US\$1,245, Zambia US\$1,348, Zimbabwe US\$2,420, South Africa US\$6,738).<sup>5</sup> The historic extractives-led growth strategy has not been inclusive, benefiting limited sections of the economy. The national Gini index stands at 0.47<sup>6</sup> accounting for one of the highest levels of inequality in Sub-Saharan Africa (SSA) and nearly two-thirds of the population lives in poverty. The Human Capital Index, which measures a country's ability to mobilize the economic and professional potential of its citizens, stands at 0.36, amongst the lowest rankings worldwide reflecting that the low levels of human capital are a structural constraint to rapid and inclusive growth in the country.

5. **Mozambique is expected to become a global gas player since large natural gas reserves were discovered in the early 2010s.** The country is estimated to have 100 trillion cubic feet (tcf) of gas—the third-largest gas reserves in Sub-Saharan Africa after Nigeria and Senegal. In November 2022, Mozambique passed a major milestone when it began exporting liquified natural gas (LNG) from the Coral South Floating LNG facility. In addition, two, larger-scale onshore LNG projects are in development: the TotalEnergies-operated Mozambique LNG, and the ExxonMobil-operated Rovuma LNG (15.2 mmtpa), which is still in the early planning stages. To put this capacity in context, the global LNG trade was about 380 mmtpa in 2021, with Mozambique's existing and proposed capacity of 32 mmtpa roughly accounting for 8 percent of the global market. Large-scale LNG production in the second half of the decade is expected to boost growth and fiscal revenue for Mozambique.

## Regional Context

6. **Mozambique is part of the Southern Africa region that possesses diverse and significant resource endowments.** The Southern Africa region covers a vast geographical area of about 9 million km<sup>2</sup> and is home to over 350 million people, with total GDP of about US\$721 billion (2018).<sup>7</sup> The 16 countries in the region are members of the Southern African Development Community (SADC), which was established in 1992 to promote socioeconomic integration and political and security cooperation.<sup>8</sup> South Africa is the region's economic engine. Several lower income but large countries such as the Democratic Republic of Congo, 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.

<sup>5</sup> IMF, World Economic Outlook, October 2022

<sup>6</sup> World Bank, 2022

<sup>7</sup> SADC Regional Indicative Strategic Development Plan (RISDP), 2020 – 2030; [https://www.sadc.int/sites/default/files/2021-08/RISDP\\_2020-2030.pdf](https://www.sadc.int/sites/default/files/2021-08/RISDP_2020-2030.pdf)

<sup>8</sup> The SADC member countries are Angola, Botswana, the Union of Comoros, Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia, and Zimbabwe. (<https://www.sadc.int>).



7. **Electricity demand in the Southern African Power Pool (SAPP) is expected to more than double by 2040, driven by expansion of electricity access and growth in economic activities in the region.** The SAPP was established in 1995 to integrate the power systems of SADC's 12 non-island countries. It is now the most advanced power pool in Africa in terms of volume of energy trade and market structure. As of 2021, the average access to electricity in the SADC countries was about 46 percent, ranging from less than 20 percent in Malawi and DRC to about 90 percent in South Africa. Electricity access is expected to rapidly increase in the coming years as countries implement electrification programs towards achieving near universal access by 2030, in line with the United Nations Sustainable Development Goal 7 (SDG7). Coupled with expected economic growth in the region, the regional peak electricity demand is expected to rise from about 50 GW in 2021 to over 110 GW in 2040, with an increase in generation from about 300 TWh to 700 TWh over the same period.<sup>9</sup>

8. **In recent years, supply issues, particularly in South Africa, have resulted in rapidly widening demand-supply gap in the SAPP member countries, with profound economic implications and limiting the progress towards universal access to electricity.** In 2020, the supply and demand shortfall in SAPP member countries was 2,000MW and it is expected to increase up to 10,000 MW in 2023. South Africa has been facing increasing power supply shortages due to old and under-maintained coal generation fleet and lack of investment in the power system. The current on-grid power supply gap in South Africa is estimated to be between 4 to 6 GW and is also noticeable in other SAPP members. Several countries have bilateral electricity purchase agreements with South Africa and their electricity imports will be impacted as South Africa is likely to prioritize meeting its domestic demand over exports. The supply-demand gap may further widen as expansion of electricity access in the region increases electricity demand. The increasing supply shortage can be best addressed by concerted efforts across the SAPP member countries, particularly by leveraging low-cost and renewable energy resources in the region.

**Mozambique is already a major electricity exporter in the SAPP region and building key transmission segments in the country could further integrate its power system with the SAPP, enabling increased regional power trade and evacuation of electricity from Mozambique.** Mozambique exports over 60 percent of its electricity to South Africa from the 2,075 MW Cahora Bassa hydropower station (HCB) in northern Mozambique (Tete region), through a long-term contract between HCB and Eskom (1,330 MW of HCB's total capacity is committed to Eskom, South Africa, under a long-term PPA that ends in 2029). It also exports electricity through short-term bilateral contracts with seven countries and through SAPP day-ahead market. In 2021 and 2022, Mozambique accounted for 73 percent of the exports to the SAPP's Day-Ahead Market. While additional interconnectors are planned, the existing segments within the Mozambique transmission network feeding into the interconnection points are congested and need to be strengthened to fully unlock the regional electricity trade potential of the proposed interconnectors. As part of the SAPP transmission backbone, a 400kV transmission line to connect Malawi with Mozambique, via Matambo, is under construction and expected to be complete in 2024. Another 400kV line to connect Zambia via Cataxa is planned. However, the existing 220 kV line connecting Songo converter substation of the HCB to Matambo, and the capacity of the Matambo and Cataxa substations, are insufficient to evacuate power at scale from HCB or from future renewable power plants in the region. The Songo-Matambo transmission segment requires strengthening to enable increased power trade through the interconnection points. Separately, a 400kV transmission line connecting Tanzania and Mozambique is also proposed, which will require as a precondition upgrading the Alto Molocue-Nampula transmission network in Mozambique to 400kV.

#### Sectoral and Institutional Context

<sup>9</sup> Based on the SAPP Pool Plan of 2017. An updated SAPP masterplan is expected to be available by early 2024.



9. **The legislative and institutional structure of the power sector in Mozambique has substantially evolved with the recent revision of the Electricity Law in 2022 mapping out the future structure of the sector.** The Ministry of Mineral Resources and Energy (*Ministério dos Recursos Minerais e Energia, MIREME*) spearheads development of the sector acting as the Government agency responsible for energy policy and planning. The national electricity utility, Electricity of Mozambique (*Electricidade de Moçambique, EDM*), is a state-owned, vertically integrated power utility in charge of electricity generation, transmission, and distribution countrywide.<sup>10</sup> The Energy Regulatory Authority (*Autoridade Reguladora de Energia, ARENE*) was established in May 2017 to provide regulatory oversight of the sector. The Energy Fund (*Fundo de Energia, FUNAE*) is a public entity which promotes development of power options for off-grid electrification. Private sector participation has materialized in the power generation segment, through independent power producers (IPPs) with power purchase agreements (PPAs) with EDM.<sup>11</sup> In 2020, the Institute for Management of Government Shares (*Instituto de Gestão das Participações do Estado, IGEPE*), was given the oversight responsibility for EDM as part of its mandate to manage the Government's stake in commercial enterprises. The new electricity law of 2022 highlights the needs for a strong Independent System Operator (ISO). In parallel, the operation of the national transmission, currently operated by EDM, can be embedded into system operation functions, based on GOM approval. The law emphasizes achieving universal provision of quality and reliable electricity. The law also strengthens ARENE's role in public procurement of power generation and in electricity tariff setting.

10. **Mozambique is rapidly increasing electricity access, but additional investments are required along the electricity supply chain to achieve universal access by 2030 and support economic growth.** Electricity access in Mozambique has increased by 15 percentage points in the last five years and now stands at 41 percent, comparable to the sub-Saharan African average access rate of 42 percent. The objective to connect all Mozambicans to electricity by 2030 is articulated in the *Programa Nacional de Energia para Todos* (Electricity for All National Program) under the National Electrification Strategy (NES). Electricity access is particularly low in the high population regions in the North and Center of the country. The rate of electrification has increased substantially in recent years, with over 350,000 connections made in 2022. However, at this rate, Mozambique will only reach about 60 percent grid electricity access by 2030. Achieving full grid electrification will require a rapid scale-up of connection rate (a 20 percent annual growth in number of connections between 2023 and 2030).

11. **In the previous decade, Mozambique has significantly expanded the electricity generation base, with an increasingly important role of private investments.** Since 2014, Mozambique has added about 600MW in installed generation capacity, with nearly 500 MW commissioned as IPPs. Mozambique's current installed capacity is around 2.8 GW while peak domestic demand stands at just over 1 GW. IPPs currently cover about 18 percent of generation, with another IPP of 450 MW, the Temane power plant, under construction. Mozambique's current generation capacity is comprised of 76 percent hydropower, 18 percent gas, and 6 percent solar.

12. **Mozambique has the potential to become a Renewable Energy Powerhouse within the Southern Africa region and accelerate access to electricity through low-cost and low-carbon energy for the people in Mozambique and the region.** The country is endowed with large untapped hydropower in Tete region and a significant undeveloped solar

<sup>10</sup> The Hidroeléctrica de Cahora Bassa (HCB) operates the 2,075 MW Cahora Bassa power plant and the associated transmission system of which 300 MW firm capacity and 350 MW flexible capacity is dedicated for domestic supply and the balance is for exports.

<sup>11</sup> 170 MW gas-fired Central Térmica de Ressano Garcia (CTRG) plant, 2014; the 120 MW gas-fired Gigawatt Power Plant in Ressano Garcia, 2015; the 40 MW Kuvananga gas-fired power plant in Gaza Province, 2017; the 40 MW Mocuba PV plant in Zambezia Province, 2019; and the 100 MW Karpower HFO plant, 2018.



renewable energy potential in the north and wind power in various regions that far exceed projected domestic demand. The Renewable Energy Atlas of Mozambique (2013) put the estimates for hydro, solar, and wind energy potential at 5.6GW, 18.6 GW, and 23,000 GW, respectively. Developing such resources at scale and economically requires larger aggregated demand from the regional market. Such an approach, with the power sector getting a significant income from exports, would make the prospects for accelerating expansion of domestic access to electricity more realistic, removing a major barrier to the country's economic and social development.

13. **Large-scale competitive procurement of renewable power developers in Mozambique has been limited due to a lack of unified policy and regulatory framework and transmission network constraints.** The competitive procurement of renewable power developers has so far been informed by the relevant sections of the Electricity Law (1997 and 2022), the PPP Law (2011), and the Decree on PPP Regulation (2013). Yet there is a lack of unified regulatory guidelines for large-scale competitive procurement of RE, deriving from the legal framework provided by these existing laws, which still opens the door for non-competitive procurement as exceptions. The capacity of the ongoing RE programs is also limited due to transmission constraints and low capacity of aggregator substations in the renewable resource rich areas of the country. Inadequate network capacity and potential impact of the recently procured solar power plants on grid stability has led to an increase in the actual realized cost of these projects and is limiting Mozambique's ability to launch procurement of larger scale plants. These constraints are limiting RE development to small size plants preventing Mozambique from achieving cost-reductions through economies of scale in RE development that have been observed globally.

14. **Supporting development of Mozambique's RE potential, in particular the proposed Mphanda Nkuwa Hydropower Plant, will have far-reaching implications towards greening electricity supply in the SAPP.** The proposed Mphanda Nkuwa Hydroelectric Project is a 1,500 MW hydropower plant on the Zambezi River, about 60 kilometers downstream of the HCB. It is among the least-cost options identified in the Mozambique Power System Development Masterplan (2018-2043) and a priority project in the SAPP Regional Power Pool Plan (2017). The project is a high priority investment for the GoM, which created the Mphanda Nkuwa Hydroelectric Project Implementation Office (GMNK) in 2019 to coordinate the development of the project. The Government has mandated EDM and HCB to structure and lead the development of the project with MIREME. A consortium led by Électricité de France (EDF), and comprising of Total Energies, Sumitomo Corporation and Kansai Electric Power Company has been identified as the preferred bidder in the selection of the Strategic Partner to develop the project. The project will be developed on a limited recourse or non-recourse project finance basis through the establishment of a project company. The Strategic Partner is expected to be the majority shareholder in the project company alongside the GoM owned entities (EDM and HCB). A new transmission system encompassing a 1,300 km, 550 kV, high voltage DC transmission line connecting Cataxa to Maputo is expected to evacuate power from the project. Developing the project, and other RE potential in Mozambique, will require substantial public financing towards infrastructure of public goods nature (i.e., transmission infrastructure) and for risk mitigation of private investments, as well as creating appropriate enabling environment to maximize the value for money from the different sources of financing.

15. **There is a need to continue and sustain the pace of reform aligned with the pace of the power sector growth.** The new Electricity Law highlights the creation of new institutions and leaves open sector structure to future decisions by the Council of Ministers regarding competition. With the sector being currently far from maturity, very few operating agents, and low level of access (with electrification being a key priority), it is understood that wholesale competition will not be viable in the short-term, and it will take several years to put enabling conditions in place. However, transmission system is expected to evolve rapidly with the incorporation of new private generators. As such, necessary reform measures include ensuring independent economic dispatch of generation, systematic least cost generation and transmission



expansion planning and timely implementation of identified investments in both segments. While legally unbundling transmission from other segments in the supply chain is the standard best practice to incorporate wholesale competition, it is important to first implement other actions compatible with the early stages of sector evolution. This could include implementing functional and accounting separation of the transmission segment, which will enable assessing the operational performance of the transmission segment and determine revenue requirement towards transmission function. This process could lead to the establishment of an Independent System Operation, which could later also become Market Operator once wholesale competition is introduced.

#### Relationship to CPF

16. **The proposed project is aligned with Mozambique Country Partnership Framework (CPF) for FY2023-27, which has the overarching goal to support Mozambique progress toward green, resilient, and inclusive development (GRID).** The three higher-level outcomes are (i) more inclusive institutions; (ii) inclusive green job creation; and (iii) improved human capital and women’s empowerment. The proposed project aims to develop climate resilient transmission infrastructure to evacuate renewable energy from Mozambique for domestic and SAPP demand, improve stability and reliability of Mozambique’s electricity supply, and support development of renewable energy at scale, all of which are aligned with the GRID approach of the CPF. The proposed project will directly support CPF objective 4 on enabling green growth through sustainable use of natural resources and objective 6 on expanding infrastructure services.

### C. Proposed Development Objective(s)

Enhance transmission capacity for domestic and regional markets and support renewable electricity capacity addition in Mozambique.

#### Key Results (From PCN)

The proposed PrDO level indicators are:

- a. Transmission capacity increased (MVA)
- b. Renewable energy capacity addition enabled (MW)

### D. Concept Description

**Component 1: Strengthen transmission infrastructure and improve system operation (proposed financing amount US\$80 million; financing gap US\$193 million)**

***Sub-component 1.1 – Transmission infrastructure (proposed financing amount US\$70 million; financing gap US\$193 million)***

17. The project will finance two transmission segments:

- A. *Songo – Cataxa – Matambo transmission corridor upgrade with a new 400kV line (145 km) and 400/220 kV substations expansion.* The existing 110 kV transmission line that connects the HCB with the national transmission network is highly constrained, preventing additional supply to the central and northern regions of the country. It is also inadequate for feeding the upcoming interconnections to Zambia and Malawi. The upgrade will enable evacuation of renewable energy developed in the region and strengthen the future interconnection with Zambia and Malawi.





- B. *New 400 kV transmission line Alto Molocue – Namialo (approximately 300 km), and the respective 400/220 kV substations expansion and 220 kV network reinforcement (Namialo – Nacala 220kV Transmission Line and Namialo – Nampula 220kV Transmission Line).* This line will extend the Chimuara-Alto Molocue 400 kV line, currently under construction. The line will allow for providing adequate power supply in an area with high industrial growth and increasing electricity access in the most populous regions of Mozambique. This transmission segment is a precondition for the eventual interconnection with Tanzania.

18. **The total financing gap for these transmission segments is about US\$193 million – options to fill the gap will be explored during project preparation.** The cost estimate for the Songo – Cataxa – Matambo corridor is US\$96 million and for the Alto Molocuo – Namialo segment is about US\$200 million. AfDB is at advanced preparation stage for grant financing of US\$33 million towards the Songo – Cataxa – Matambo corridor, which could be complemented by the proposed project to complete this segment. Other development partners have also indicated interest in providing credit financing towards the proposed transmission projects. These co-financing options, and other options (including preparing a subsequent project for the Alto Molocuo – Namialo segment) will be explored during project preparation.

***Sub-component – 1.2 Strengthening system operation (proposed financing amount US\$10 million)***

19. Currently, the transmission network in Mozambique is divided into three, disconnected segments, controlled by HCB (northern system), SAPP/Zimbabwe (central system) and South Africa-ESKOM (southern system). EDM is in the process of establishing the National Control Center for improving grid stability, reliability, and dispatch. EDM is currently also upgrading its Supervisory Control and Data Acquisition/Energy Management System (SCADA/EMS) solutions to optimize the management of transmission system and to eventually become a SAPP Control Area. Both initiatives are supported by other development partners. However, additional investments are required in the transmission system to improve system stability, control, and reliability, particularly to accommodate system integration and larger deployment of RE. The required investments will be identified during project preparation.

**Component 2: Enable renewable energy at scale (proposed financing amount US\$10 million; financing gap US\$10 million)**

***Sub-component 2.1 – Early readiness support for the Mphanda Nkuwa Hydroelectric Project (proposed financing amount US\$10 million)***

20. **The Government has sought the World Bank’s support towards the Mphanda Nkuwa Hydroelectric Project, including operationalization of and technical assistance to the GMNK, financing for the proposed transmission lines, and partial risk guarantee (PRG) for the hydropower plant.** The project will support preparatory work at the GMNK, potentially leading up to financial close with the strategic partners. This will include: (i) operationalization of the GMNK office; (ii) procurement of transaction advisors (including legal advisors) with a comprehensive scope of work, encompassing both commercial and legal advice, to assist GMNK in negotiating the commercial arrangement with the selected chosen Strategic Partner responsible for building, owning, operating, and transferring the hydropower project; (iii) procurement of technical advisors (engineering consultants) to advise the GMNK in design negotiations with the Strategic Partner; (iv) create a panel of experts on dam safety and environmental and social safeguards; and (v) transmission feasibility studies.

***Sub-component 2.2 – Technical readiness towards strengthening competitive procurement of RE at larger scale (financing gap US\$10 million)***



21. **The Government has highlighted the need to have a coordinated national program for large-scale deployment of RE, that goes beyond fragmented initiatives, to realize the scale and efficiency of competitive procurement of RE in Mozambique's energy transition.** This would require efforts on multiple fronts including adequate policy and regulatory reforms, assessments for site identification (including more granular resource assessments and pre-feasibility and feasibility studies), investment in strengthening transmission infrastructure to facilitate evacuation of RE at scale while ensuring network stability, evaluating the role of storage (battery as well as pumped hydro) in scaling RE, and identification of residual risks to private investment in competitive procurement of large-scale RE in Mozambique and adequate risk mitigation initiatives, including financing instruments such as PRG, blended finance, etc.

22. **The following areas of support are proposed for the project, with exact details to be identified during project preparation:** (i) identification of network connection requirements and associated strengthening of the transmission system and other infrastructure requirements (access roads); (ii) preparation of adequate regulations for competitive selection of investors and contractors for RE projects; (iii) support for planning and selection of RE projects; (iv) technical assistance towards preparation of transactions (e.g., pre-feasibility and feasibility studies, resource assessments, ESIA); (v) risk assessment for and of RE projects and their impact on sector's supply demand balance and its financial position (including impact on tariffs, risks to EDM and the Government); (vi) transaction advisory support (legal, technical, financial/commercial) where needed to complement existing initiatives; (vii) marketing strategies for electricity generated by RE projects; and (viii) capacity building of ARENE, EDM and MIREME.

### **Component 3: Technical Assistance and institutional support (proposed financing amount US\$10 million)**

23. **In order to respond to the rapid evolution of the sector, the functions of an Independent System Operator (ISO) are critical to ensure a reliable electricity system operation, as well as ensuring compliance with Mozambique's grid code and the SAPP rules.** While a National Control Center is under development there is a need to define the framework and functions of the ISO beyond the establishment of the technical components. EDM has prepared a roadmap for strengthening the system operation function, which identifies areas of support, including extensive capacity building and training in necessary competence areas. In relation to the ISO establishment, the proposed project could include (i) institutional support for its establishing, including defining the role of the ISO in system operations and planning; (ii) operational support to the system operator; and (iii) capacity building. This institutional support component will also address the need for the broader institutional and operational structuring of the power sector (including structuring of generation, transmission, distribution, and supply functions, defining overall target market structure of the sector and a transition path towards attaining it), in line with the Electricity Law adopted in 2022. The proposed areas of support will be further discussed and firmed up during the preparation of the project. A specific Action Plan could be agreed to support the different milestones for its establishment through Performance Based Conditions (PBCs).

24. **This component will also provide technical assistance (TA) and capacity building support to implementing agencies.** Such support will include capacity building of the project implementing agencies in areas relevant to the implementation of the program, technical assistance towards establishing the project implementing units within the agencies, and implementation support towards the program. The specific TA and implementation support activities will be identified during project preparation.

### **Performance Based Conditions (PBCs)**

25. **The project is expected to include PBCs towards achieving sector operational and institutional reforms.** The detailed PBCs and the associated financing amounts to be unlocked by achieving the PBCs will be decided during project preparation. The PBCs will be designed to ensure continued application of the operational and financial reforms agreed



in the FSP, which are currently under implementation. The PBCs will also be tied to development and adoption of sector institutional and governance reform roadmap that will be supported under Component 3. The PBCs will be designed to ensure that the implementing agencies have adequate resources unlocked (with some buffer) ahead of each year of the project to be able to award contracts in time for smooth completion by the end of the project. Therefore, a pre-defined proportion of the financing allocated to Component-1 will not be subject to any PBCs and will be made available at the start of the project itself (provided the disbursement conditions have been met), while additional pre-defined amounts will be made available each year subject to meeting the defined PBCs. Component 2 will not be subject to any PBC since it will finance activities designed to strengthen the enabling environment for RE in Mozambique, and is aligned with the overall reform efforts. Component 3, which will provide technical assistance towards sector operational and institutional improvements will not be subject to any PBCs since it will enable the implementing agencies to achieve the PBCs that unlock financing for Component 1.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Area OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

26. The Project is likely to generate a wide range of significant adverse risks and impacts on human populations and the environment through its physical investments, such risks must be assessed and managed in line with ESS1. Component 1 is anticipated to induce the following risks and impacts; possible risks of exclusion of marginalized groups in project design and benefits and lack of meaningful consultations during project design and implementation, involuntary resettlement due to land acquisition needs, labor conditions and occupational health and safety, community health and safety such as GBV/SEA/SH, spread of communicable diseases, accidents with increase in heavy vehicles and construction works, environmental pollution (solid & hazardous waste, noise and dust emissions), soil erosion, biodiversity loss and clearing of habitats, and cultural heritage such as graves and spirit houses and potential chance during excavations. The type 1 TA activities under component 2 may have significant downstream environmental and social impacts. Component 2 and 3 also include TA type 2 (preparation of regulations) and type 3 (capacity building) activities which may have more diffuse and induced impacts, often playing out over a longer term. The ToRs for any TA activities under the project, produced by the Borrower for public sector activities, will refer to relevant ESSs and incorporate relevant assessments to ensure that activities and outputs are consistent with ESF and IFC PS, where relevant, requirements and will be reviewed and approved by the World Bank.

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**APPROVAL**

Task Team Leader(s):	Lara Born, Arun Singh
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**Approved By**

Practice Manager/Manager:		
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