ELECTRICIDADE
DE MOÇAMBIQUE, E.P.

NATIONAL DISPATCH AND CONTROL CENTER (NCC) UNDER MOZAMBIQUE ENERGY FOR ALL PROJECT




ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Maputo, June 2021

ELECTRICIDADE
DE MOÇAMBIQUE, E.P.

AFRICAN DEVELOPMENT
BANK GROUP

ACRONYMS & ABBREVIATIONS

ADF	African Development Fund
AQUA	National Agency for Environmental Quality Control
AfDB	African Development Bank Group
DP(s)	Development Partners
DPCG	Development Partners Coordination Group
DEP	Project Electrification Directorate
ESAP	Environmental and social assessments procedures
ESMP	Environmental Social Management Plan
EDM	Electricidade de Moçambique , E.P
ESAP	Environmental and Social Assessment Procedures
ESMP	Environmental and Social management Plans
ESA	Environmental and Social Assessments
ESIA	Environmental and Social Impact Study
ESF	Environmental and Social Framework
ESAM	Environmental and Social Assessment and Management
ISS	Integrated Safeguards System
GoM	Government of Mozambique
GBV	gender-based violence
GDP	Gross Domestic Project
HR	Human Resource
MIREME	Ministério de Recursos Minerais e Energia
MITADER	Ministry of Land Environment and Rural Development
NCC	National Control Center
OS	operational safeguards
PCN	Project Concept Note
PIU	Project Implementation Units
PPP	public-private partnerships
SIPP	Stakeholder Involvement Plan
SESA	Strategic Environmental and Social Assessment
UPE	Electricity Planning Unit
VAC	Violence against Children

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1. INTRODUCTION

The MEFA Programme has three components that respond to key development challenges in Mozambique. The first component entails the construction and taking into operation a new National Control Centre which will be pivotal in expanding power exports (EDM is planning an almost fourfold increase), incorporating more variable renewable energy sources, such as solar and wind, and facilitate inward investments due to availability of much better quality of power supply. The second component will provide close to 49,000 new connections in support of the Mozambican Government's Energy for all Plan which entails that the country will be electrified by 2030. The third component targets operational support to the above components and facilitation of new generation capacity and improving the financial health of EDM. The Programme Objectives are: (i) to increase stability of the Mozambican power system, (ii) enable a large expansion of power sales to SAPP, (iii) expand access to electricity and (iv) assist in improving EDM's financial sustainability.

1.1. Objective of the ESMF

EDM's corporate objectives in relation to this project are the following:

- Comply with government law (2005), which requires EDM to operate the complete Mozambican transmission grid;
- Becoming a SAPP Control Area;
- Have control over full national grid;
- Build-up its capacity to operate a large and meshed transmission grid, in an increasingly liberalised system;
- Facilitate integration of renewables, all IPPs and power stations;

1.2. SCOPE OF THIS ESMF

This ESMF will guide the implementation of Environmental and Social Considerations under the Component 1 of the Program which includes Construction of new SCADA system, based on:

- A National Control Centre in Maputo, fitted with a data center, in a new building.
- A Backup Control Centre in Chimoio, also fitted with a data center, and used a Medium
- Voltage Feeders Control Centre for the Central and Northern Regions, in a new building.
- A Medium Voltage Feeders Control Centre for the Southern Region in Maputo, fitted with a thin client connected to the two data centers, in the existing NCC building.

A selection of SCADA and EMS features hosted in the two data centers adapted to EDM's needs. A telecom architecture based on leased links Consultant recommendation on EDM NCC Feasibility Study done by EDF), as this solution will provide a robust telecom system whilst avoiding massive CAPEX. Substations adaptation works to make sure all substations can communicate with the SCADA system and are properly integrated in the SCADA & EMS. A training program, as this is essential for sustainability of the system.

1.3. Expected Project Impacts

Civil works will lead to relatively minor air and water pollution during the construction phases and, once the works are completed, limited loss of noncritical animal and plant habitats is expected. The main negative impact is in the construction stage regarding the risk of working in elevated conditions with potential electricity and/or chemical hazards, excavations, asbestos, noise, vibrations, etc. In addition to this potential impacts that may occur include labor influx, community health and safety, potential GBV/SEA issue, child labor, during the construction stage. There will be no land acquisition, no involuntary resettlement for these components or significant adverse environmental issues.

2. CONTEXT

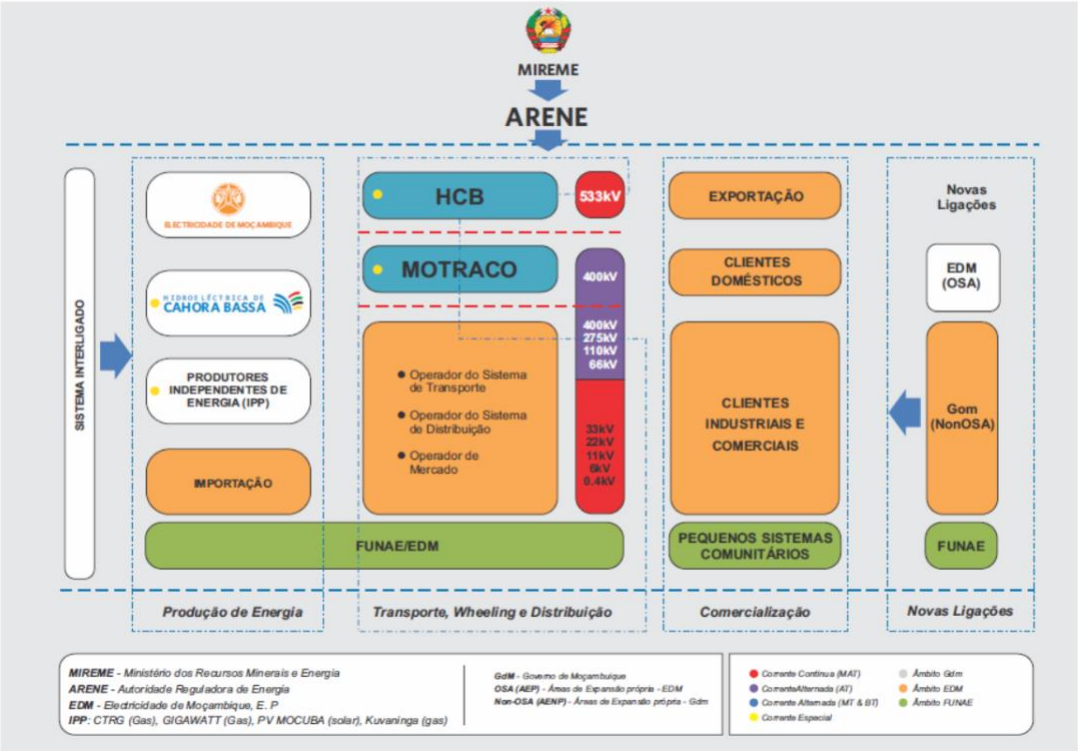
Mozambique is a low-income country, strategically located in the Southern Africa region. With about 30 million people, it occupies an area of 800,000 km^2 and more than 2,500 km of coastline along the southwestern rim of the Indian Ocean. About 70 percent of the population live and work in rural areas. The country is endowed with ample arable land, water, energy, gas and mineral resources; three deep seaports; and a relatively large potential labor pool. It is also strategically located, bordering six countries—four of them landlocked and hence dependent on Mozambique as a conduit to global markets.

Mozambique's economy is dominated by agriculture, which accounts for a quarter of the Gross Domestic Project (GDP) and employs three-quarters of the population, including more than 90 percent of rural residents. After registering average GDP growth of 7.3 percent over the preceding decade, the economy experienced a sharp downturn in 2016–2017, with growth falling to 3.8 percent. Aided by strong monetary policy, currency stability since mid-2017 helped reduce inflation from its peak of 26 percent in November 2016 to 3.9 percent in 2018.

The GDP growth is projected to firm up gradually, with upward revisions contingent on progress in exports of liquefied natural gas. A reduction in direct budget support from donors and project lending equivalent to 5 percent of GDP and 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 highlight the difficulties in controlling public finances, and budgetary pressures will continue to be elevated. 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.

The five-year Government plan presents five strategic pillars to achieve accelerated economic growth and social development and targets expanding infrastructure as a key element to enhancing the productive sectors of the economy, promoting economic diversification, and improving access to markets. The strategy calls for expanding access to electricity services to all Mozambicans by 2030 to support the young and growing population with productive opportunities. The strategy also calls for increasing energy exports and relying on public-private partnerships (PPPs) to achieve the objectives of the energy sector development.

The power sector in Mozambique is guided by the Electricity Law of 1997 that keeps the state authority over the sectoral policies and regulations. The law allows private investment in the sector. The Council of Ministers approves tariffs and fiscal regime for the sector and major concessions. The Ministerio de Recursos Minerais e Energia, (MIREME) is the government agency responsible for energy policy and planning, sector performance, and governance. Electricidade de Moçambique E.P., EDM is the state- owned, vertically integrated utility with operations in generation, transmission, and distribution countrywide.



Mozambique has become a regional energy hub and is strategically placed to continue being one in the future. With gas reserves at Rovuma basin, Mozambique holds the third largest proven natural gas reserves in Africa after Nigeria and Algeria, and it could well be the largest gas resource holder on the continent. A Renewable Energy Atlas, published in 2014, identified 8 GW in 'priority' renewables projects (5.6 GW in hydropower, 1.3 GW in solar energy, and 1.1 GW in wind power), with the overall potential being significantly larger. These resources far exceed projected long-term domestic demand and resources have been harnessed to meet the regional needs as well. The 2,075 MW state-owned HCB station in the Tete region of northern Mozambique sells about 70 percent of its electricity to South Africa, with the balance sold mainly to EDM, with some relative limited exports to the SAPP. About 80 percent of natural gas currently produced at Mozambique's onshore gas fields at Pande and Temane, which exceeds 190 million GJ per year, is exported to South Africa through a pipeline built in 2004. These electricity and gas exports are generating significant foreign exchange revenues to the country and have established Mozambique as an important regional energy hub. Recent discoveries of massive off-shore gas reserves in the Rovuma basin have attracted global energy players, positioning the energy sector as a key engine of Mozambique's future economic growth through global and regional exports.

The Mozambique Integrated Master Plan 2018-2043 identifies both short- and mid-long term challenges and solutions relating to system control, stating that "modernized system controlling and dispatching functionalities should be established". Short term challenges include (i) no capacity of NCC (National Control Centre) SCADA maintenance; (ii) no approved system operation guidelines; and unclear HR (Human Resource) development program related to system operation.

3. REGULATORY AND INSTITUTIONAL LEGAL FRAMEWORK

A vast Environmental and Social Framework (ESF) stands out in Mozambique, focusing on the themes of assessment, environmental and social management, land, resettlement, land use planning, biodiversity, water resources, natural disasters, climate change, environmental quality, labour aspects, occupational health and safety, social protection and cultural heritage. For the present document in addition to the legislation on the Environmental Impact Assessment Process, which establishes the rules on the environmental assessment process, the legal provisions related to the activities of Components 1 and 3 deserve special emphasis.

The EIA Process is being developed in compliance with Mozambique's national legislative requirements and with applicable international guidelines. The national and international development and environmental and social legal frameworks applicable to the proposed Project, including:

- National Development Framework: national development and strategic plans with relevance to the proposed Project;
- Institutional Framework: relevant governmental institutions and authorities with jurisdiction over the Project or over relevant environmental or social aspects;
- Legislative Framework: legal requirements which are relevant for the Project's impact assessment;
- Relevant International Conventions;
- International Best Practice Guidelines and Policies.

3.1. National Development Framework

- **National Development Strategy (2015-2035)**

The National Development Strategy (2015-2035), approved in July 2014 (GoM, 2014), defines the Government of Mozambique's (GoM) main development strategies to achieve the goal of "*raising its people's quality of life through the structural transformation of the economy and the expansion and diversification of the production base*".

The National Development Strategy believes that industrialisation, grounded in an inclusive and sustainable growth model, is the main way to achieve Mozambique's vision of prosperity and competitiveness. To materialise industrialisation, the strategy defines four main development pillars, namely:

- Human capital development;

- Infrastructure development;
- Research, innovation, and technological development; and
- Institutional coordination and articulation.

With regards to infrastructure development, the strategy considers that massive investment in the infrastructure sector is required and is a determinant factor for economic growth. As such, the strategy lists the main infrastructure that should be the focus of investment, including:

  - Logistics - transport and storage infrastructure (the latter with a focus on storage of agricultural, fisheries, mineral and hydrocarbon products);
  - Maritime cabotage for cargo transport at long distances;
  - Power generation, including alternative energy sources;
  - Natural gas supply systems;
  - Sustainable management of water resources;
  - Social infrastructure; and
  - Tourism infrastructure.

The project under assessment proposes the construction of the new National Control Centre. This is in full alignment with the infrastructure development strategic goals, as defined in EDM Master Plan (2018-2043).

- **Governmental Five-Year Plan (2020-2024)**

The main objective of the Government's Five-Year Plan for the current period (2020-2024), approved in April 2020 (GoM, 2020), is the improvement of well-being and quality of life of the Mozambican people, the reduction of poverty and social inequalities, the creation of an environment of peace, harmony and tranquillity, and a strong focus on job creation. To achieve these goals, the five-year plan defines strategic areas of development on which the GoM should focus its action, and on which private and public investment should be incentivised.

The development of economic and social infrastructure (including energy infrastructure) is one of these strategic areas, for which the five-year plan sets defines the following overall strategic goal: "*prioritize investment in quality infrastructure, such as energy, telecommunications, ports, roads and railways, that facilitate economic activity, reduce transactional costs, create jobs, promote regional and national integration, and improve the population's life conditions*".

- **Economic and Social Plan for 2021**

The Economic and Social Plan (PES) is an instrument for the implementation of the economic and social objectives defined in the 5 Year Government Program (2020-2024). It defines objectives regarding economic growth, inflation, export, net international reserves, public good production, basic social services, and public finances.

The PES 2021 (recently approved by the Mozambican parliament in December 2020) includes a number of programs for human, social and economic development, which translate the GoM's main strategic objectives. With regards to economic development, one of the subprograms pertains to infrastructure development, including the energy sector. The PES 2021 plans a continued effort for expansion of the power production, transmission.

- **Energy Sector Strategy**

The Energy Sector Strategy was approved by Resolution No. 10/2009, of 4 June, and establishes strategic guidelines for the implementation of the Energy Policy (approved by Resolution 5/98, of 3 March). This strategy recognises that energy is one of the main factors contributing to national economic growth and poverty relief, and believes that Mozambique has a significant potential, in terms of energy resources, sufficient to respond both to national and regional demands, in the context of Southern Africa. The strategy sets forth some principles for the energy sector, which include, among others:

- Sustainable increase of access to electricity;
- Sustainable development and preservation of the environment;
- Institutional coordination and consultation with all stakeholders;
- Exploration of the regional market, enabling large power projects; and
- Efficient use of energy.

3.2. Institutional Framework

- **Energy Sector**

The **Ministry of Mineral Resources and Energy** (MIREME) was created by Presidential Decree No. 1/2015, of 16 January. The Ministry's attributions are defined by Resolution No. 14/2015, of 8 July, and include, among others, promoting improved knowledge of national energy resources and their development and usage and the development of energy production to satisfy national needs and to seize the opportunities of the regional market.

The **Energy Regulatory Agency** (ARENE) was created by Law No. 11/2017, of 8 September, replacing the former National Electricity Council. ARENE possesses supervision, regulation, inspection, and sanctioning powers over the energy sector.

The **National Directorate of Energy** (DNE), created by Resolution No. 14/2015, of 8 July, is the department of MIREME responsible for the conception, promotion, assessment, execution, and monitoring of the electricity sector policies.

Electricidade de Moçambique, E.P. (EDM) was created in 1977 by Decree-Law No. 38/77, of 27 August, as the state-owned national electricity utility. It became a public enterprise in 1995, expected to operate on commercial terms (Decree No. 28/95, of 17 July). EDM is under the tutelage of MIREME and is tasked with the establishment and operation of the public service of production, transmission, distribution, and commercialisation of electricity in Mozambique, and as such manages the national electrical grid (Decree No. 43/2005 of 29 November).

- **Environmental Authorities**

The **Ministry of Land and Environment**[1] (MTA), established by Presidential Decree No. 1/2020, of 17 January, is the central authority that plans, coordinates, controls and ensures the execution of policies related to the management of land, forests and wildlife, environment, conservation areas and climate change. Presidential Decree No. 4/2020, of 7 February, defines MTA's role and scope of intervention. MTA is organized into different sectors, through national directorates, of which the following are particularly relevant for the EIA process:

- **National Directorate of Environment** (DINAB) – whose tasks include the proposal of environmental policies and regulations, the promotion of sustainable development, the control and protection of environmental quality and the monitoring of EIA processes;
- **National Directorate of Land Planning and Territorial Development** (DNTD) – whose tasks include the establishment of rules, regulations and guidelines for land planning and resettlement and the promotion and monitoring of the execution of land planning instruments and resettlement processes, among other tasks.

MTA also has subordinate departments, such as the **National Administration of Conservation Areas** (ANAC) and the **National Agency for Environmental Quality Control** (AQUA), among others. ANAC is responsible for the management of conservation areas. AQUA is responsible for the management and monitoring of environmental quality, including such aspects as pollution control, water, soils and air quality and noise emissions. Waste management (collection, transport, and disposal) is a responsibility of **Municipal Councils** and **District Governments**, in their respective areas of jurisdiction.

At the provincial level, MTA is represented by **Provincial Directorates of Territorial Development and Environment**[2] (DPDTA). At district level, MTA is represented by the Planning and Infrastructure District Services. EIA applications are monitored by DINAB at national level, and by the **Provincial Environmental Service** (SPA) at provincial level.

3.3. National Legislative Framework

The Constitution of the Republic of Mozambique defines the right of all citizens to a balanced environment and the duty to protect it (Article 90). Additionally, the State is required to ensure: *(i)* the promotion of initiatives to ensure ecological balance and environmental preservation, and *(ii)* the implementation of policies to prevent and control pollution and integrate environmental concerns in all sectorial policies to guarantee the citizen the right to live in a balanced environment supported by sustainable development (Article 117).

The proposed Project must comply with the legal requirements for environmental licensing, taking into consideration not only the specific EIA regulations but also all the applicable environmental

[1] Formerly the Ministry of Land, Environment and Rural Development (MITADER). In January 2020 the Rural Development sector was excluded from MTA's attributions and incorporated in the Ministry of Agriculture and Rural Development.
[2] former Provincial Department of Land, Environment and Rural Development (DPTADER).

regulation (biophysical and social) that may be relevant to the Project throughout its life cycle (construction, operation, and decommissioning). The environmental instruments and regulations relevant to the proposed Project EIA Process include:

- National Environmental Policy (Resolution No. 5/95, of 6 December);
- Environmental Law (Law No. 20/97, of 1 October);
- Regulation for the Environmental Impact Assessment Process (Decree No. 54/2015, of 31 December);
- General Guidelines for the preparation of Environmental Impact Studies (Ministerial Decree No. 129/2006, of 19 July);
- General Guidelines for Public Participation Process in the EIA Process (Ministerial Decree No. 130/2006, of 19 July);
- Regulation for the Environmental Audit Process (Decree No. 25/2011, of 15 June); and
- Regulation for the Environmental Inspection Process (Decree No. 11/2006, of 15 June).

Further to the EIA specific regulation, additional legislation which may be relevant considering the nature of the Project and its location includes:

- Water Law (Law No. 16/91, of 3 August);
- Regulation for Environmental Quality Standards and Effluent Emissions (Decree No. 18/2004, of 2 June, as amended by Decree No. 67/2010, of 31 October);
- Regulation for Urban Solid Waste Management (Decree No. 94/2014, of 31 December) and Regulation for Hazardous Waste Management (Decree No. 83/2014, of 31 December);
- Land Law (Law No. 19/1997, of 1 October) and its Regulation (Decree No. 66/98, of 8 December);
- Land Planning Law (Law No. 19/2007, of 18 July), and its Regulation (Decree No. 23/2008, of 1 July);
- Guidelines for the Expropriation Process resulting from Land Planning (Ministerial Decree No. 181/2010, of 3 November);
- Regulation for the Resettlement Process Resulting from Economic Activities (Decree No. 31/2012, of 8 August);
- Cultural Heritage Law (Law No. 10/88, of 22 December);
- Regulation for the Protection of Archaeological Heritage (Decree No. 27/94, 20 July);
- Labour Law (Law No. 23/2007) and subordinate Labour, Health and Safety Regulations;
- Forestry and Wildlife Law (Law No. 10/99, of 7 July) and its Regulation (Decree No. 12/2002 of 7 June); and
- Biodiversity Conservation Law (Law No. 16/2014, of 20 June, as amended by Law No. 5/2017, of 11 May) and its Regulation (Decree No. 89/2017, of 29 December).

As the proposed development is a power transmission project, it should also consider the relevant legal framework in place for the Energy Sector, namely:

- Electric Energy Law (Law No. 21/97, of 1 October) and its Regulation (Decree No. 8/2000, of 20 April);

- Regulation Establishing Norms regarding the National Electric Power Network (Decree No. 42/2005, of 29 November);
- Safety Regulations for High Voltage Power Lines (Decree No. 57/2011, of 11 November).

The relevance and applicability of this legislation for the Project are briefly discussed in Table below. Please note that a given decree may be relevant to different matters, e.g., the Environmental Law must be considered for both biodiversity conservation and waste management.

Table 1. Relevance and applicability of the Legislation

Legislation	Description	Relevance
ENVIRONMENTAL IMPACT ASSESSMENT		
Resolution 5/95 - National Environmental Policy	Establishes the basis for all environmental legislation. According to clause 2.1, its main goal is to ensure sustainable development, to maintain an acceptable balance between socioeconomic development and environmental protection. To reach this goal, the Policy requires the integration of environmental considerations in the socioeconomic planning, the management of the country's natural resources and the protection of ecosystems and of the essential ecological processes.	The Project should strive to meet the policy's goals, integrating environmental considerations in its design, thus minimizing impacts on natural resources and ecosystems. The environmental and social assessment developed in this EIA will generate inputs to the project's design.
Law 20/97 - Environmental Law	Defines the legal basis for the sound use and management of the environment towards the sustainable development of the country. The Environmental Law applies to all public and private activities that may directly or indirectly affect the environment.	The Project should strive to meet the sustainable development principle defined by the Environmental Law, throughout its life cycle. This EIA is part of that effort.
Decree 54/2015 - Regulation for the EIA Process	Establishes the EIA Process as one of the fundamental instruments for environmental management, aiming at mitigating the negative impacts that public or private projects may cause to the natural and socio-economic environment, through the undertaking of environmental studies prior to commencement of the projects. Defines the EIA Process, the required environmental studies, PPP, studies review process, project environmental feasibility decision process and environmental license issuance. Applies to all public or private activities with direct or indirect influence in environmental components.	The Project needs to be submitted to a formal EIA Process, in accordance with this regulation. An environmental license needs to be obtained from MTA, and the issuance of the environmental license precedes any other license or permit required for the Project. The EPDA is the second step in the Project's EIA Process
Ministerial Decree 129/2006 - General Guidelines for Environmental Impact Studies	Provides details on environmental licensing procedures, as well as the format, structure, and contents of the environmental impact assessment report. The objective is to standardise procedures followed by various role-players in the EIA process.	The EIS report must conform to the guidelines outlined in this Ministerial Decree. During the compilation of the EIS, the requirements of this legislation will be considered.

Legislation	Description	Relevance
Ministerial Decree 130/2006 - guides the PPP of the EIA Process	Defines the basic principles, methodologies, and procedures for the EIA consultation process. Considers public participation as an iterative process that initiates at the design stage and continues throughout the lifetime of the project.	The PPP for the EIA Process (including for this EPDA) is being developed in compliance with the guidelines provided in this Ministerial Decree.
Decree 25/2011 - Regulation on the Environmental Audit Process	Defines an environmental audit as a documented and objective instrument for management and systematic assessment of the management system and relevant documentation implemented to ensure protection of the environment. Its objective is to assess compliance of work and operational processes with the environmental management plan, including the environmental legal requirements in force, as approved for a project.	Throughout the Project's lifecycle, the Proponent should conduct independent environmental audits at least once a year. In addition, public environmental audits may be requested under this decree.
Decree 11/2006 - Regulation for Environmental Inspections	Regulates the supervision, control, and verification of compliance with environmental protection rules at a national level.	During the construction or operational phases of the Project, MTA may undertake inspections to ascertain compliance with environmental legislation and the Environmental Management Plan (EMP). The Proponent must allow for and facilitate such inspections.
ATMOSPHERIC EMISSIONS AND AIR QUALITY		
Law 20/97 - Environmental Law	Article 9 forbids the discharge of any toxic substances to the atmosphere if exceeding the legal standards. The emission standards are defined by Decree No. 18/2004 (see below).	The Project must comply with the air quality emissions limits, as defined in this regulation. Given the nature of the project, this will mostly be applicable to the emissions of vehicles and machinery.
Decree 18/2004 (as amended by Decree 67/2010) - Regulation for Environmental Standards and Effluent Emissions	Establishes parameters for the maintenance of air quality (Article 7º); patterns of emission of gaseous pollutants for various industries (Article 8º); and standards for emission of gaseous pollutants from mobile sources (Article 9º) - including light and heavy vehicles.	
WATER RESOURCES AND WATER QUALITY		
Law 16/91 - Water Law	This law is based on the principles of public water use, basin scale management, and user-pays and polluter-pays. Intends to safeguard the ecological balance and environment. Water uses require either a water concession (permanent or long-term water uses) or a water license (short term water uses). Licenses are given for a period of 5 renewable years, while concessions are valid for a period of 50 renewable years. Article 54 of this Law stipulates that any activity with the potential of contaminating or degrading public waters, in particular the discharge of effluents, is subject to a special authorisation to be issued by the Regional Water Administration and payment of a fee.	The project needs to include measures to prevent the pollution of any water resources in the construction and operation phases. If the Project requires the discharge of effluents into water bodies, a discharge license must be obtained.

Legislation	Description	Relevance
Decree 18/2004 – Regulations for Environmental Quality Standards and Effluent Emissions	Determines that when industrial effluent is discharged into the environment, the final effluent discharged must comply with discharge standards established in Annex III of the decree. The discharge of domestic effluent must comply with the discharge standards in Annex IV.	The Project must comply with the effluent emission limits established by this regulation. This may be applicable to any construction camps used in support of the Project's construction.
POLLUTION AND WASTE MANAGEMENT		
Law 20/97 – Environmental Law	Limits the production and / or disposal into the soil or subsoil and the disposal into water or the atmosphere of any toxic or polluting substances, as well as the practice of activities that accelerate erosion, desertification, deforestation, or any other form of environmental degradation to those limits established by the law (Article 9).	The Project needs to include measures to prevent pollution during and after implementation. Any project must conform to the requirements outlined in this regulation. The EMP will include such measures.
Decree 94/2014 - Regulation for Urban Solid Waste Management	Establishes the legal framework for urban solid waste management. The key objective is to establish rules for the generation, collection, and disposal of urban solid wastes, so as to minimise their impacts on public health and the environment. Urban solid wastes are to be classified in accordance with the Mozambican Norm NM339 – Solid Wastes – Classification. Waste management is a responsibility of Municipal Councils and District Governments, as applicable.	The project should implement suitable waste management practices throughout its life cycle, in compliance with the requirements outlined in this regulation. To the effect, a Waste Management Plan will be included in the EMP.
Decree 83/2014 - Regulation for Hazardous Waste Management	Establishes the legal framework for hazardous waste management. The key objective is to establish rules for the generation, collection, and disposal of hazardous wastes, so as to minimise their impacts on public health and the environment. Annex IX of this decree provides waste classifications. MTA is the competent entity to manage hazardous wastes, namely by licensing waste management units. Only entities which are licensed by MTA can collect and transport hazardous wastes, beyond the limit of the facilities where they were generated.	
BIODIVERSITY		
Law 20/97 – Environmental Law	Articles 12 and 13 state that the planning, implementation, and operation of projects should guarantee the protection of biological resources, particularly of plant or animal species threatened with extinction or that, by their genetic value, ecological, cultural, or scientific, require special attention and this issue is to extend their habitats, especially those built within areas of environmental protection.	The Project must consider protected biodiversity. The presence of potentially relevant biodiversity values in the Project area will be assessed in the EIA. The EMP will include adequate mitigation to minimize the Project's impacts on biodiversity.
Law 10/99 - Forest and Wildlife Law	Establishes the principles and basic rules on protection, conservation and sustainable use of forest and wildlife resources.	The Project must consider the protection of forest and wildlife.

Legislation	Description	Relevance
Decree 12/2002 – Regulation on the Forest and Wildlife Law	Applies to protection, conservation, use, exploration and production activities of fauna and flora resources. Includes the commerce, transport, storage and primary artisanal or industrial transformation of these resources. Annex I include a list of classification of wood-producing species, including precious wood and woods of 1st, 2nd, 3rd, and 4th grades. Annex II includes a list of protected fauna species, for which hunting is prohibited.	The Proponent must notify MTA if a species listed in this regulation is affected or disturbed.
Law 16/2014 (as amended by Law 5/2017) – Protection, Conservation and Sustainable Use of Biodiversity Law and its Regulation	This Law regulates the creation and management of all conservation areas in Mozambique, revoking the Forestry and Wildlife Law competences in this matter. Article 16 states that all activities that could result in changes to vegetation cover, or that could disturb flora, fauna, and ecological processes up to the point of compromising their maintenance, are interdicted within national parks, except if required for scientific reasons or management needs. Article 26 states that activities can be approved within conservation areas, if planned in the area's management plan, which among other things defines the construction of the infrastructure required for the area's management or that aimed to improve the quality of life of the local populations.	No protection or conservation areas are interfered by the Project.
LAND OWNERSHIP AND RESETTLEMENT		
Resolution 10/95 – Land National Policy	Establishes that the State must provide the land for each family to build or possess their own habitation, and is responsible for land use and physical planning, although plans can be made by the private sector.	The Project must conform to the principles of this policy, as per the regulations defined in the implementing legislation, which is discussed below.
Law 19/1997 – Land Law	Defines land use rights (DUAT), including details on customary rights and procedures for acquisition and use of land titles by communities and individuals. This law recognises and protects the rights acquired through inheritance and occupation (customary rights and duties of good faith), except for legally defined reserves or areas where land has been legally transferred to another person or institution.	The Land Law and its regulation define total and partial protection zones. In these zones, land use is restricted. According to this regulation, the corridor of 50 m to each side of a new transmission line is considered to be a partial protected zone (the line's RoW). The approval of power transmission line projects by the Council of Ministers or by the relevant competent authorities automatically implies the creation of the accompanying partial protection zones. The establishment of the RoW may create the need to compensate existing assets and resettle existing settlements within the RoW. This issue will be investigated in the EIS.
Decree 66/98 – Regulation for Land Law	Defines total protection areas, set aside for nature conservation and State defence, as well as partial protection areas, where land use titles may not be granted, and where activities cannot be implemented without a license. Partial protection areas, which include, amongst others, the 50 m strip of land along lakes and rivers, 100 m strip of land along the seafront and estuaries, 50 m along aerial, surface or underground pipelines/cables for electricity, telecommunications, oil, gas and water, 30 m along primary roads and 15 m along secondary and tertiary roads.	

Legislation	Description	Relevance
Decree 31/2012 – Regulation for the Resettlement Process Resulting from Economic Activities	Defines rules and basic principles for resettlement processes from the implementation of public or private economic activities. Article 15 states that the Resettlement Plan is part of the EIA Process and that its approval precedes the issuance of the environmental license.	If physical displacement results from the Project, this regulation is applicable, and a resettlement action plan will be required. Any potential economic displacement (such as the loss of farming plots or other assets) will also need to be assessed in the EIA and, if present, duly compensated for, in abidance with the Land Law. Note that for electricity projects, expropriation procedures may apply (please see Decree 21/97 below).
Decree 21/97 – Electric Energy Law	Article 29 states that the issuance of a concession for power supply projects implies the authorisation for access and use of land, following the payment of due compensation, in accordance with the Land Law and its Regulation. Article 30 states that when the transmission of electricity implies the use of land or land rights, the issuance of the concession is preceded by expropriation and payment of appropriate compensation. Article 30 also states that the expropriation procedures should only be followed after the concessioner follows through the normal procedures to try to obtain the DUAT, through an agreement with the current holders of that right. Expropriation requires the issuance of a declaration of public interest, by the Council of Ministers.	According to this Decree, expropriation procedures (as defined in the land planning regulation – see Decree 23/2008 below) may be applicable to power transmission projects.
Decree 23/2008 – Regulation for Land Planning	Aims to establish regulatory territorial planning measures and procedures to ensure the rational and sustainable use of natural resources, regional potentials, infrastructure, and urban centres, and to promote national cohesion and safety of the people. Articles 68 to 71 deal with expropriation procedures for private property for national public interest reasons. Article 70 states that expropriation should be preceded by fair compensation.	If expropriation of land or land rights is required for Project implementation, the requirements of this regulation should be complied with. Expropriation requires the issuance of a declaration of public interest for the Project, as defined in the Electric Energy Law.
Ministerial Decree 181/2010 – Guidelines for the Expropriation Process Resulting from Land Planning	Establishes procedures for expropriation processes resulting from land planning, including procedures for the issuance of a declaration of public interest, compensations for expropriation (including calculation methods) and the expropriation process itself.	If expropriation of land and land rights within the Project area is required, the procedures established in these guidelines should be followed.

Legislation	Description	Relevance
CULTURAL HERITAGE		
Law 10/88 - Cultural Heritage Law	Aims to legally protect material and non-material assets of the Mozambican cultural heritage. Under this law, cultural heritage is defined as a "group of material and non-material assets created or integrated by the Mozambican people through history, with relevance to the definition of the Mozambican cultural identity". Material cultural assets include monuments, groups of buildings with historic, artistic, or scientific importance, places or locations (with archaeological, historic, aesthetic, ethnologic or anthropologic interest) and natural elements (physical and biological formations with particular interest from an aesthetic or scientific point of view).	The potential presence of cultural heritage on the Project area will be assessed in the EIS. Archaeological objects may also be found during the construction phase of the Project. In such cases, the Proponent must immediately communicate the finding to the relevant cultural heritage agency.
WORK AND SAFETY		
Law 23/2007 - Labour Law	Defines general principles and establishes the legal framework applicable to individual and collective employment relationships in respect of work rendered to an employer for remuneration.	The project must, throughout its entire life cycle, abide by Mozambique's labour law.
Law 19/2014 - Law of Protection of People, Workers and Job Applicants Living with HIV/AIDS	This law establishes the general principles that aim to ensure that all employees and job applicants are not discriminated against in the workplace or when applying for jobs, for being suspected of having or having HIV / AIDS. It is prohibited testing of HIV / AIDS to workers, job seekers, or candidates to training or promotion, at the request of employers, without the employee's or job seeker consent.	Testing job applicants for HIV / AIDS is prohibited. Testing of workers without the employee's consent is also prohibited. The proponent must train and reorient all HIV positive workers who are able to fulfil their duties at work, with activities compatible with their capabilities.
Decree 45/2009 - Regulation on the General Labour Inspectorate	This Regulation lays down the rules on inspections, under the control of the legality of work. Paragraph 2 of Article 4 provides for the employer's responsibility for the prevention of occupational health and safety risks for the employee.	The Proponent shall comply with the requirements. In the case of an inspection, the proponent must help to provide all necessary information to the inspectors.
ELECTRIC ENERGY		
Law 21/97 – Electricity Law	Article 9 states that the transmission of electricity, by either private or public entities, requires the issuance of a concession for the effect. Article 14 states that the management of the national power transmission grid is attributed to a public entity, and that private capital may participate in the development of the national power transmission grid.	EDM has been designated as the managing entity of the national power transmission grid, as per Decree No. 43/2005. As such, EDM will be the operator of the proposed transmission line.
Decree 42/2005 – Regulation establishing rules for the national electric grid	Article 3 reinforces that the construction and operation of power transmission infrastructure requires the issuance of a concession, as required by Law No. 21/97.	

Legislation	Description	Relevance
Decree 57/2011 – Safety Regulation for High Voltage Power Lines	This Decree establishes several standards and guidelines for the design of power lines, to ensure their safety. Article 28 (clause 3) states that in order to ensure a safe operation of high voltage power lines, trees close to the power line may need to be cut, within a protection zone with a maximum width of: *(i)* 30 m, for lines under 66 kV, and *(ii)* 50 m, for lines over 66 kV.	According to this decree, trees and other obstacles that may result in a risk to the infrastructure will need to be removed. Note that the protection zone named in this decree is a safety zone, and is not equivalent to line's partial protected zone (the Project's RoW), as defined in the Land Law.

3.4. African Development Bank's Environmental and Social Procedures

The Bank's existing Environmental and Social Assessment Procedures (approved in 2001) have been revised to reflect the updated information, upgraded processes and cutting-edge knowledge embodied in the Integrated Safeguards System (ISS).

The ESAP describes how the Bank and its borrowers should work together to ensure that environmental, climate change and social considerations are integrated into the project cycle from country programming to post completion.

The Environmental and Social Assessment procedures apply during the entire project cycle, with differentiated tasks to be performed, roles and responsibilities for the Bank and its borrowers and clients:

- ***At the project identification phase***, the screening exercise focuses on the environmental and social dimensions of a project to categorize it in one out of four categories based on the potential adverse environmental and social impacts of the project.
- ***During project preparation,*** the scoping exercise helps to define the scope of the Environmental and Social Assessments (ESA) to be completed by the Borrower based on the project category, with the assistance of staff from the operational departments.
- ***During the appraisal phase***, ESIA shall be reviewed and cleared by the Safeguards and Compliance Division.

At the project implementation phase, the Borrowers shall ensure the implementation of Environmental and Social Management Plans (ESMP) developed to address adverse impacts, while monitoring the project impacts and results

It is with this goal in mind that the ESAP require that environmental, climate change and social considerations are assessed early in the Project Cycle and are reflected in project selection, site selection, planning and design.

It also addresses the limitations of the existing ESAP and provides a strong procedural basis for the operationalization of the Integrated Safeguards Systems. It details the specific procedures that the Bank and its borrowers or clients should follow to ensure that Bank operations meet the requirements of the operational safeguards (OSs) at each stage of the Bank's project cycle.

Environmental and Social Assessment Procedures (ESAP) provide information on the specific procedures that the Bank and its borrowers or clients should follow to ensure that Bank operations meet the requirements of the OSs at each stage of the Bank's project cycle

The Environmental and Social Assessment (ESA) process outlined in the ESAP provides a way to improve a project environmentally, socially and in relation to climate change, thereby enhancing its benefits and – in order of priority – avoiding, minimizing, mitigating or compensating for adverse impacts.

- **Strategic Environmental and Social Assessment (SESA)**

Both the SESA and the ESIA are instruments used to identify, predict and assess the likely environmental and social consequences of proposed development activities, in order to ascertain the means through which to avoid, minimize, mitigate, compensate / offset and / or monitor adverse impacts, and increase development benefits.

The SESA will integrate strategic environmental and social considerations into the preparation of Program-Based Operations, such as budget support, sector reform and regional and sector program loans or investment plans. In those cases where the environmental and social risks are very high, they will be deemed to be Category 1 resulting in a full SESA and an ESMP. The SESA will provide a baseline overview of prevailing environmental and social conditions.

- **Environmental and Social Impact Assessment (ESIA)**

An ESIA will be developed to identify, predict and assess the likely environmental, climate change and social consequences of a proposed development project in order to ascertain the means through which to avoid, minimize, mitigate, compensate / offset and / or monitor adverse impacts, and increase development benefits. The ESIA assesses the direct, indirect and cumulative impacts of a project in its area of influence, examines project alternatives and determines the significance of each of the impacts identified. The ESIA should identify ways of improving project selection, design, siting and implementation in order to avoid or mitigate and manage adverse environmental and social impacts.

The ESIA will address the natural environment, human health and safety, social impacts including the risks to vulnerable groups, involuntary resettlement, cultural resources and vulnerability to climate change.

- **Environmental and Social Management Plan (ESMP)**

The ESMP will describe the actions that will be taken by the EDM to enhance positive impacts and to avoid, minimize, mitigate, compensate / offset negative impacts. The ESMP will also be used to monitor identified environmental and social impacts of development activities. The ESMP should describe the mitigation and management measures, clarify responsibilities for implementation, provide an implementation plan with the necessary time schedule and costs and indicate how environmental and social monitoring measures are to be implemented.

- **Environmental and Social Management Framework (ESMF)**

An ESMF should provide an agreed process to be implemented by the borrower for the management of potential environmental and social impacts and risks in the context of Category 2 program operations. The ESMF should detail a set of procedures, methodologies and

management measures to ensure that the environmental and social impacts of sub-projects are addressed in an appropriate manner.

- **Environmental and Social Management System (ESMS)**

An ESMS should integrate environmental and social impact and risk management into the FI's business processes so that the FI can manage potential environmental and social impacts of subprojects by ensuring the conduct of environmental and social due diligence prior to financing subprojects and adequate monitoring during the term of the loan agreement.

- **Full Resettlement Action Plan (FRAP)**

The FRAP will be required in case of involve a significant number of people (who would need to be displaced with a loss of assets, or access to assets or reduction in their livelihood. The plan should address potential adverse impacts of the project and at the same time make provisions for the opportunity the project offers to improve the socio-economic conditions of the affected population. The FRAP should be finalized as a supplement document to the Environmental and Social Impact Assessment (ESIA) report.

3.5. African Development Bank's OPERATIONAL SAFEGUARDS

Operational safeguard 1 – Environmental and social assessment Objectives The objective of this overarching Operational Safeguard (OS), along with the OSs that support it, is to mainstream environmental and social considerations— including those related to climate change vulnerability—into Bank operations and thereby contribute to sustainable development in the region. The specific objectives are to:

- Mainstream environmental, climate change, and social considerations into Country Strategy Papers (CSPs) and Regional Integration Strategy Papers (RISPs);
- Identify and assess the environmental and social impacts and risks— including those related to gender, climate change and vulnerability—of Bank lending and grant-financed operations in their areas of influence;
- Avoid or, if avoidance is not possible, minimise, mitigate and compensate for adverse impacts on the environment and on affected communities;
- Provide for stakeholders' participation during the consultation process so that affected communities and stakeholders have timely access to information in suitable forms about Bank operations, and are consulted meaningfully about issues that may affect them;
- Ensure the effective management of environmental and social risks in projects during and after implementation; and
- Contribute to strengthening regional member country (RMC) systems for environmental

- **Operational safeguard 2 – Involuntary resettlement: land acquisition, population displacement and compensation**

This Operational Safeguard (OS) aims to facilitate the operationalisation of the Bank's 2003 Involuntary Resettlement Policy in the context of the requirements of OS1 and thereby mainstream resettlement considerations into Bank operations. This OS aims to assist borrowers or clients, with support from relevant Bank staff, in addressing the potential costs and risks

associated with involuntary resettlement and, in doing so, to facilitate sustainable development. The specific objectives of this OS mirror the objectives of the involuntary resettlement policy to:

- Avoid involuntary resettlement where feasible, or minimise resettlement impacts where involuntary resettlement is deemed unavoidable after all alternative project designs have been explored;
- Ensure that displaced people are meaningfully consulted and given opportunities to participate in the planning and implementation of resettlement programmes;
- Ensure that displaced people receive significant resettlement assistance under the project, so that their standards of living, income-earning capacity, production levels and overall means of livelihood are improved beyond pre-project levels;
- Provide explicit guidance to borrowers on the conditions that need to be met regarding involuntary resettlement issues in Bank operations to mitigate the negative impacts of displacement and resettlement, actively facilitate social development and establish a sustainable economy and society; and
- Guard against poorly prepared and implemented resettlement plans by setting up a mechanism for monitoring the performance of involuntary resettlement programmes in Bank operations and remedying problems as they arise.

- **Operational safeguard 3 – Biodiversity, renewable resources and ecosystem services**

This Operational Safeguard (OS) outlines the requirements for borrowers or clients to (i) identify and implement opportunities to conserve and sustainably use biodiversity19 and natural habitats, and (ii) observe, implement, and respond to requirements for the conservation and sustainable management of priority ecosystem services.The OS specifically applies to Bank operations that: Trade in Endangered Species of Wild Flora and Fauna, the World Heritage Convention, the UN Convention to Combat Desertification and the Millennium Ecosystem Assessment. Its recommendations also align with the International Plant Protection Convention, which covers the movement of invasive alien species, pests and pest risk analysis for quarantine pests, including analysis of environmental risks and living modified organisms.

- Conserve biological diversity and ecosystem integrity by avoiding or, if avoidance is not possible, reducing and minimising potentially harmful impacts on biodiversity;
- Endeavour to reinstate or restore biodiversity, including, where some impacts are unavoidable, through implementing biodiversity offsets to achieve “not net loss but net gain” of biodiversity;
- Protect natural, modified, and critical habitats; and
- Sustain the availability and productivity of priority ecosystem services to maintain benefits to the affected communities and sustain project performance.

- **Operational safeguard 4 – Pollution prevention and control, hazardous materials and resource efficiency**

This OS outlines the main pollution34 prevention and control requirements for borrowers or clients to achieve highquality environmental performance, and efficient and sustainable use of natural resources, over the life of a project. The specific objectives are to:

- Manage and reduce pollutants resulting from the project— including hazardous and nonhazardous waste—so that they do not pose harmful risks to human health and the environment; and
- Set a framework for efficiently using all of a project's raw materials and natural resources, especially energy and water.

This OS draws on and aligns Bank operations with existing international conventions and standards related to pollution, hazardous materials and waste, and related issues35. It also requires compliance with internationally accepted environmental standards, particularly the World Bank Group Environmental Health and Safety (EHS) Guidelines.

- **Operational safeguard 5 – Labour conditions, health and safety**

Labour is one of a country's most important assets in the pursuit of poverty reduction and economic growth. The respect of workers' rights is one of the keystones for developing a strong and productive workforce. This OS outlines the main requirements for borrowers or clients to protect the rights of workers and provide for their basic needs. The specific objectives are to:

- Protect workers' rights;
- Establish, maintain, and improve the employee– employer relationship;
- Promote compliance with national legal requirements and provide supplemental due diligence requirements where national laws are silent or inconsistent with the OS;
- Align Bank requirements with the ILO Core Labor Standards, and the UNICEF Convention on the Rights of the Child, where national laws do not provide equivalent protection;
- Protect the workforce from inequality, social exclusion, child labour, and forced labour; and
- Establish requirements to provide safe and healthy working conditions

4. ENVIRONMENTAL AND SOCIAL CHARACTERIZATION

Regarding environmental characterization, the risks associated with the physical and biological environment deserve highlighting. The impacts of the implementation of the project will occur particularly where the NCC will be built (since the location has not yet been identified, there are only alternatives of location). Regardless of the location selected, compensation for loss of improvements is expected, and in some options resettlement is expected, and it is not expected that the project activities will affect conservation areas or sensitive habitats.

Mozambique has 12 terrestrial ecoregions whose conservation status is threatened, for the present project particular attention is given to mangrove formations, coral reefs, seagrass, coastal dunes, which are legally protected. The alternatives of the project are mostly modified in the provinces of Maputo and Maputo City.

In terms of environmental quality, deforestation continues to be one of the causes of environmental degradation frequently affecting the semi-deciduous and semi-evergreen forests predominant in the Miombo formations, however in the period from 2016 until then, there was a significant decrease in deforestation, which can be explained by indirect causes that relate to technological, political and economic factors.
The acceleration of population growth, notable in Mozambique, translates into an increase in the average population density from 25.3 hab/km2 in 2007 to 33.5 hab/km2 in 2017.

Significant gender disparities, which generally disadvantage women relative to men, remain evident in various dimensions of social and economic life. Men are in a more privileged position than women when it comes to access to opportunities during the expansion of the formal sector. Gender inequalities in terms of human capital, expressed in factors such as schooling, literacy and proficiency in the Portuguese language, constitute some of the barriers for the bulk of Mozambican women to access opportunities in the formal labour market. These inequalities perpetuate social constructions and perceptions of male dominance, and place women in a situation of greater vulnerability with regard to gender-based violence (GBV).

In Mozambique in general, and particularly in the central and northern provinces, agriculture is the main economic activity in rural areas and is essentially practiced by the family sector, using rudimentary agricultural techniques that are not very sustainable and are vulnerable to natural disasters associated with climate change. In the coastal zone, fishing is a very important activity, although it is also practiced in inland waters. However, the north of the country is generally poorly served in terms of infrastructure. The exploitation of forest resources, mainly timber, is another very common activity in rural areas, both for own consumption and for sale, with unsustainable practices.

5. ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS ASSESSMENT

Properly prepared and implemented, the construction of de NCC will bring significant positive environmental and social impacts. The main environmental risks and impacts identified, are related to occupational health and safety, waste management and environmental pollution. One of the positive impact will be the reduction the risk of accidents at work derived from the adoption of technologies that allow maneuvers to be carried out remotely in the energy transport network and also reduce the downtime of electricity supply.

The project will consider the potential adverse social impacts of the project in rural areas, which could result from unbalanced power dynamics between service providers and vulnerable households, elderly and child-headed households, particularly in resettlement camps.

Regarding social aspects, in general, the implementation of the project is likely to result in other risks and impacts such as community health and safety disturbances, labor inflow, elite capture of project benefits, GBV and Violence against Children (VAC). Implementation of specific activities, such as increasing access to grid-connected electricity services for households, should consider systemic, knowledge and sociological risks.

6. ENVIRONMENTAL AND SOCIAL ASSESSMENT AND MANAGEMENT PROCEDURES

The ESMF aims to ensure that negative environmental and social risks and impacts are correctly managed, complying with the mitigation hierarchy and maximizing positive impacts and the various levels of implementation of the project. Procedures to be adopted are defined and implemented throughout the Project cycle, covering identification, design, approval, construction and implementation.

- The first stage is Environmental and Social Screening which aims to ensure that proposed project are subject to the appropriate type and extent of environmental and social assessment, commensurate with the potential risks and impacts of the sub-project.
- This is followed by the preparation of environmental and social assessment and management tools and the monitoring of the implementation of mitigation measures. Annual reports on the environmental and social performance of NCC will be prepared and submitted to the African Development Bank, subject to annual external audits to verify the performance of project against stated objectives and targets and to identify areas for improvement. It is envisaged that this audit will be carried out by an auditor certified by AQUA (National Agency for Environmental Quality Control) and that its scope will complement the work carried out by the African Development Bank.

7. INSTITUTIONAL ORGANIZATION FOR THE IMPLEMENTATION OF THE ESMF

The Project, will be supervised by MIREME and will be implemented by EDM. The coordination and monitoring of the Project will be done by the Electricity Planning Unit (UPE), to be created in the National Directorate of Energy (DNE) at MIREME. The Project Implementation Units (PIU), based at EDM will be responsible for the implementation of the NCC. The PIU at EDM is centrally based at the Project Electrification Directorate (DEP). All stakeholders will need to participate in

capacity building, including sensitization, awareness raising and technical training. A detailed training plan should be prepared, with regular reinforcement.

8. CONSULTATION AND PARTICIPATION

NCC project has been subject to a consultation process during the preparation phase, which will continue during the Project implementation phase, as defined in the respective Stakeholder Involvement Plan (SIPP). NCC project foresees that the environmental and social instruments elaborated during the preparation phase and the same will be subject to public consultation, through public consultation meetings, focus groups meeting, individual interviews, e-mail, website, media. The consultations will be carried out in compliance with the Protocol on COVID-19 Prevention Measures at the Level of Community Activities, of EDM.

9. GRIEVANCE HANDLING

Conflicts or grievances arising from project development processes are generally associated with poor communication, inadequate or lack of consultation, inadequate flow of accurate information, or restrictions that may be imposed on project affected people. Communities must be involved in awareness-raising and training concerning their rights and obligations, how to obtain legal advice and representation, and how to seek redress against what they regard as unfair practices. Local leaders should be trained in conflict management by professional Service Providers to assist in minimizing the negative impact of conflicts. Special attention should be paid to women, the poor and most vulnerable groups to ensure they understand their rights and entitlements. EDM has developed a Grievance Redress Mechanism (GRM) to provide guidance to EDM for managing the parties' complaints and suggestions quickly and transparently and ensure that they have the means to present and address their complaints. The GRM presents the procedures to be followed in the process from submission to resolution of complaints and suggestions during the development and implementation of EDM's activities.

10. COST ESTIMATES

In the configuration described above, the total estimated cost of the project is 24,700,000 USD, including 10% contingencies and consultant cost. VAT and custom duties will amount to approximately 3,150,000 USD. In addition to that, it is estimated that project OPEX will amount to approximately 500,000 USD/year, including leasing of required telecom links. The financial analysis of the project shows that, under the assumption of a 10% reduction in energy not served and transmission losses, operating revenues exceed largely operating expenses. Considering favorable financing conditions (soft loans from donors), the project generates positive cash-flows in the medium and long term, but it needs additional short-term financing to cover the lack of liquidity in the first three years. The financial profitability of the project is around 14% under the scenario where all lines are leased and is also positive when optical fibers are installed. The economic performance of the project is largely positive in both cases.

	Cost in USD
SCADA/EMS	7,500,000
Telecommunications	2,350,000
Adaptation Works	3,930,000
Training	1,760,000
Buildings	5,450,000
Works Subtotal	**20,990,000**
Contingencies (10%)	2,100,000
Consultant (7.5%)	1,575,000
Total without tax	**24,665,000**
VAT and custom duties (15%)	3,150,000
Total including tax and custom duties	**27,815,000**

Table 1: *Project cost according to consultant's recommendations*

In the previous Feasibility Study, it was considered that implementation of optical fibres in OPGW technology to allow EDM to operate the system with own telecommunication system. The cost of optical fibres on transmission lines is the following

Optical fibre installation	**Length (km)**	**Unit price (USD/km)**	**Total CAPEX (USD)**
Chimuara - Metoro	897	15,000	13,500,000
Chibata - Chimuara	614	15,000.00	9,210,000
Total			22,710,000

Table 3. *Cost of implementation of optical fibres in OPGW*

Total cost of the project including optical fiber installation is **USD 50,525,000. The total cost of implementing the ESMF is estimated at $ 23, 445.13**