The Republic of Mozambique

Environmental Impact Assessment (EIA) Guideline

Offshore Petroleum Operations

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Forword
(to be completed at later stage)

This Guideline has been developed for MTA DINAB and INP under the auspices of the Norwegian Environment Agency (NEA) through the Oil for Development Program. The Guideline has been prepared by Eureka Energy Partners in collaboration with Greenlight Africa in the early phase and Nanuk Consultoria during the later stages.

CONTENTS

1 INTRODUCTION

1.1 Objectives and scope

The Environmental Impact Assessment Guideline for Offshore Petroleum Operations ('the EIA Guideline') has been developed to provide guidance to project proponents on how to navigate through an environmental impact assessment (EIA) process for upstream and midstream offshore petroleum projects.

As defined by the Petroleum Law nº 21/2014 of 18th of August, this includes operations related to the planning, preparation and implementation of the activities of reconnaissance, exploration, development, production, treatment, storage, petroleum transportation, cessation of such activities or termination of the use of infrastructure, including the implementation of a decommissioning plan, sale or delivery of petroleum to the point of supply or loading as a commodity, in the form of liquefied natural gas or delivered for energy generation or industrial use.

Key objectives of the EIA Guideline

- Clarifying the legal process and related requirements for submissions by project proponents of offshore petroleum developments under the EIA process in Mozambique.
- Providing guidance on international best practice relating to environmental assessments and follow-up of offshore petroleum developments.
- Facilitating consistent and high-quality EIA processes that support well-informed decision-making by the relevant institutional stakeholders.

The Guideline will also assist the Ministry of Land and Environment (MTA), their National Directorate for the Environment (DINAB) and Provincial Services of Environment (SPA), as well as other institutional stakeholders such as the National Petroleum Institute (INP) in their review of environmental assessments.

The mandate of the Ministry of Land and Environment (MTA) specifically enables the MTA to approve technical guidelines for EIA. It is the regulatory entity that supervises environmental compliance, including for the petroleum sector. At the same time, the National Petroleum Institute (INP) is a regulatory entity, ensuring that petroleum operations are carried out in accordance with laws, regulations, and best international practices, with special emphasis on the optimized management of resources and compliance with health, safety and environmental protection aspects. Accordingly, the Guideline was developed on behalf of the MTA and INP, in consultation with other state institutions, petroleum companies, private sector and non-governmental organisations.

The Guideline is based on, and refers extensively to, the Environmental Impact Assessment Regulations Decree 54/2015 ('the EIA Regulations') and the Environmental Regulations for Petroleum Operations (Decree 56/2010). In addition, guidance is provided regarding international best practice, as defined by e.g. IFC.

The focus of this Guideline is on offshore upstream and midstream petroleum sector activities, throughout the entire project life cycle, from exploratory surveys to decommissioning and abandonment.

Proponents remain responsible for the quality and comprehensiveness of their submissions and for complying with all applicable legal requirements.

1.2 Roles and responsibilities

The key governmental entities involved in an EIA process related to the offshore petroleum sector in Mozambique are summarised below. A more detailed overview is provided in Appendix E.

The Ministry of Land and Environment (MTA)

MTA is the main institution for regulating environmental issues. This relates to all sectors including the petroleum sector. It also has responsibility for proposing environmental policies and strategies, to be integrated into sectoral plans. With regards to environmental management, it has the following key responsibilities:

- Decision-making related to the EIA process and environmental licensing.
- Implementing land use planning
- Issuing land titles known as DUAT (Direito de Uso e Aproveitamento dos Terras) and managing the land cadastre
- Management of conservation areas

MTA includes several directorates and departments, of which the most relevant for the offshore petroleum sector are:

- National Directorate of Environment (DINAB) with responsibility for the development of environmental policies, review of EIA submissions, and the issuing of environmental permits;
- National Agency of Environmental Quality (AQUA) with responsibility, among others, to develop and implement strategies for the integrated control of water, air and soil pollution; Environmental auditing and inspections are part of their mandate;
- National Administration of Conservation Areas (ANAC) with responsibility to ensure, among other, the implementation of biodiversity conservation policies and the management of conservation areas;
- National Directorate of Land and Territorial Planning (DNDT) with responsibility related to resettlement and compensation at national level, represented at Provincial level by the Provincial Directorate of Territorial Development and Environment (DPDTA). DNDT is also responsible for land management issues and the national land cadastre;
- National Directorate of Climate Change in charge of all aspects related with climate change;
- Land and Environment Inspection (ITA) with responsibility of inspecting activities and procedures of the MTA.

National Petroleum Institute (INP)

The National Petroleum Institute (INP) is a regulatory entity responsible for the administration and promotion of petroleum operations, ensuring that petroleum operations are carried out in accordance with laws, regulations and international best practice, with special emphasis on the optimized management of resources and compliance with health, safety and environmental protection aspects. Apart from the MTA, INP is also involved in the environmental permitting of petroleum developments by assisting in the evaluation of applications for environmental licenses and relevant documentation. Furthermore, INP has substantial involvement in assisting the MTA in inspections and audits during the operational phase of a project.

Other key institutions of relevance

There are several other state ministries and institutions that have an interest in petroleum activities, the most important and/or relevant ones being:

- The Ministry of Sea, Inland Waters and Fisheries (MIMAIP)
- The National Marine Institute (INAMAR IP)
- The Ministry of Health (MISAU)
- The Maritime Transport Institute (ITRANSMAR IP)
- The National Oceanographic Institute (InOM)
- The National Fisheries and Aquaculture Development Institute (IDEPA IP)
- The Ministry of Public Works, Housing and Water Resources (MOPHRH)
- The Ministry of Economy and Finance (MEF)
- The National Hydrocarbon Company (ENH)

Other institutions of relevance including, among others, the National Service of Public Safety (SENSAP), the National Institute for Disaster and Risk Reduction Management (INGD), the Coastal, Lake and River Police, the Medical Emergency Services or the General Inspectorate of Mineral Resources and Energy.

1.3 Harmonisation with other relevant guidance

All petroleum activity submissions to obtain an environmental license shall demonstrate full compliance with national legislation and international conventions ratified by Mozambique such as, the Basel Convention or the Stockholm Convention. Proponents are required to ensure that the legislation and the guidance available and applicable at the time are adequately considered.

1.3.1 International good practice on EIA

EIAs for petroleum activities must demonstrate compliance with the national environmental standards as the legal minimum. These include, among others, those related to water quality, air quality, noise emissions and hazardous waste. Requirements of international conventions ratified by Mozambique shall also be adhered to.

In case of absence of national standards or if international standards are more stringent, good international industry practice (GIIP) should be adopted as project standards.

In addition to the legal requirements of Mozambique, this Guideline refers to international standards/guidelines and good international industry practice produced by the following organisations:

- The World Bank Group and particularly the International Finance Corporation (IFC) as the private sector arm of the World Bank Group
- The Global Oil and Gas Industry Association (IOGP)
- The Global Oil and Gas Industry Association for Environmental and Social Issues (IPIECA)
- International Union for Conservation of Nature (IUCN)
- The Joint Nature Conservation Committee (JNCC)
- The International Association for Impact Assessment (IAIA)

The wide acceptance of IFC guidance by international lenders as standards for acceptable environmental and social management make them particularly relevant. The applicable IFC guidance particularly relevant to the oil and gas sector comprise, among others, the following:

- EHS Guidelines for Onshore Oil and Gas Development
- EHS Guidelines for Offshore Oil and Gas Development
- EHS General Guidelines
- IFC Sustainability Framework including Performance Standards No. 1 – 8 on Environmental and Social Sustainability
- IFC Handbook on Projects and People addressing Project-induced in-migration
- IFC Good Practice Handbook on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets
- IFC Good Practice Handbook on Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets
- IFC Good Practice Note No.4: Managing Retrenchment

For onshore oil and gas facilities located near the coast (e.g. coastal terminals, marine supply bases, loading / offloading terminals), additional guidance is provided in the IFC EHS Guidelines for Ports, Harbors, and Terminals (2017).

Further, the Equator Principles (EP4, 2020) provide a widely applicable and recognised benchmark for environmental and social risk management with the latest revision including climate change risk assessment.

Note that while the above refer to the guidance documents being relevant at the time of their development, the Proponent is responsible for ensuring the use of the most suitable documents and latest versions being available at the time of the preparation of the respective submission for approval.

Guidance can also be found within several International Conventions (even if not necessarily ratified by the Republic of Mozambique), such as the Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention), the OSPAR Convention and other OSPAR Commission publications, of which many have been established as corporate requirements in the oil and gas industry, e.g. Recommendation 2014/17 on a Harmonized Offshore Chemical Notification Format (HOCNF) or Agreement 2013-06 listing substances which are considered to pose little or no risk to the environment (PLONOR).

Other international conventions of relevance include MARPOL 73/78 which aims to prevent pollution of the marine environment by ships originating from operational causes and minimize the accidental discharge of polluting substances. The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND), 1992, was also ratified by Mozambique in 2001 through the Resolution No. 53/2001. The United Nations Convention on the Law of the Sea (UNCLOS) is also relevant as many of its provisions reflect customary international law, specifically, Part XII, entitled “Protection and Preservation of the Environment”, includes provisions relating to marine pollution. The Republic of Mozambique ratified UNCLOS, in accordance with Resolution no. 21/96, of 26 November. Please refer to Appendix E for additional information on international conventions.

The International Convention for the Safety of Life at Sea (SOLAS), 1974, The SOLAS Convention, in its consecutive forms, is generally seen as an important treaty relating to the safety of ships. This convention prescribes the number of lifeboats, other emergency equipment as well as security procedures and was ratified by Mozambique through Resolution no. 25/2004, of 14 July.

Useful guidance is also provided in NORSOK S-003 Environmental Care (2017)[1] and by the European Commission on Best Available Techniques (BAT) on upstream hydrocarbon exploration and production[2].

1.3.2 National guidance

As part of the application of the national EIA procedure, guidelines have been developed, such as the Directive on Independent Expert Reviewers of Environmental Impact Studies for Category A+ Activities (Ministerial Diploma 118/2022 of 21 November) and the Directive on Biodiversity Offsets (Ministerial Diploma 55/2022 of 19 May) for which the "Manual for implementing the Directive on Biodiversity Offsets in Mozambique: Ministerial Diploma nº 55/2022 of 19 May" was developed. This manual has several associated technical guides, such as metrics for assessing the ecological condition of coral reefs and "Good Practice Guidelines for mitigating the impacts of oil and gas development on coral reefs, sea turtles and marine mammals in the North of the Mozambique Channel"[3].

The EIA process is further regulated by the General Directive for the Preparation of EIAs (Ministerial Decree 129/2006 of 19 of July) which provides guidance on the assessment of the environmental and social aspects of projects, as well as the General Directive for Public Participation process in EIA (Ministerial Decree 130/2006 of 19 July) which defines the basic principles related to public participation, methodologies and procedures that should be used.

Please refer to Appendix E for detailed information on national guidance.

1.3.3 Coordination with Strategic Environmental Assessment

The proponent should consider the latest version of the Strategic Environmental and Social Assessment (SESA) for the mining and gas sector in Mozambique (Avaliação Ambiental e Social Estratégica do Sector Mineiro e do Gás em Moçambique, 2017, Ozmosis & Cardno, 2017).

[1] https://de.scribd.com/document/259366785/NORSOK-S-003-Rev-3-Environmental-care-pdf
[2] https://www.oecd.org/chemicalsafety/risk-management/best-available-techniques.htm
[3] Birrell, C. L., Sola, E., Costa, H. M. (2022) A contribution to Mozambique's biodiversity offsetting scheme: Framework to assess the ecological condition of coral reefs. Wildlife Conservation Society, Maputo, Mozambique; 37 pp.

2 PETROLEUM DEVELOPMENT AND ASSOCIATED ENVIRONMENTAL MANAGEMENT

This chapter provides a brief introduction to the life cycle of upstream activities related to petroleum developments and the associated environmental management of aspects, impacts and risks.

2.1 Life cycle of petroleum projects

The life cycle of upstream petroleum activities starts with the exploration phase. The goal of this phase is to discover field development opportunities and to obtain information in order to decide whether the opportunities are commercially viable. The next phase is the development and production (operations) phase followed by an abandonment phase. Figure 2-1 illustrates these typical life cycle stages of a hydrocarbon exploration and production field.

Licensing activities, whereby the government awards companies with rights to explore or extract petroleum offshore blocks, precede exploration. Oil and gas companies build their exploration activities on the information shared by the government, acquisition of data from other sources, and their own investigations.

Figure 2-1: Exploration and production life cycle phases and activities[4]

Note: According to Article 18 of Decree 34/2015, an appraisal and production concession contract is awarded on an exclusive basis. It is divided into two periods:

[4]IOGP-IPIECA (2020)

a. appraisal period with a maximum duration of eight years, divided into sub-periods as provided for in the concession contract;

b. development and production period with a maximum of thirty years, counting from the date of approval of the corresponding development plan.

2.2 Project phases of petroleum development

Key activities undertaken in each phase of a typical petroleum development project are summarised below. Further detailed information on the life cycle can be found in a number of sources (for example IOGP-IPIECA (2020). Appendix D provides the project criteria relating to the legal framework of petroleum operations in Mozambique.

2.2.1 Exploration

Reconnaissance surveys

Reconnaissance is the first stage of the search for hydrocarbons. The review of geological maps, aerial photography and satellite imagery can identify major sedimentary basins and promising geological structures such as faults or anticlines. Other studies, such as magnetic and gravimetric investigations can also be useful tools. The primary tool used to locate and evaluate geological strata for hydrocarbons, however, is the seismic survey.

Seismic surveys are conducted to identify potential hydrocarbon reserves (oil and gas) in geological formations in the subsurface below the seafloor. The surveys are carried out by seismic vessels which are ships solely used for the purpose of such surveys.

Seismic technology uses the reflection of sound waves to identify subsurface formations. Pulses of sound, repeated on average every 6 to 10 seconds, are sent below ground and some of these waves are reflected back to the surface where they are recorded by a hydrophone array. In marine seismic surveys, as many as 16 ‘streamers’ (cables containing the hydrophones) are towed behind a seismic vessel, at a depth of 5 to 10 m. Each cable can be as long as 10 km. In addition to the hydrophone array, the vessel tows seismic source arrays comprising airguns, which discharge downward sound bursts of 200–250 decibels. These signals are transferred to the seismic vessel for processing. Surveys can be 2D or 3D, the difference being the number of seismic lines used to obtain data about potential reservoirs. Towed streamer operations are the most common offshore seismic survey method, followed by ocean-bottom seismic surveys in which arrays are placed on the seafloor or buried a meter below it.

Exploration and appraisal drilling

Exploratory drilling activities follow the analysis of seismic data to verify and quantify the amount and extent of oil and gas resources from potentially productive geological formations.

The exploration drill site position depends on the location and characteristics of the geological formations. In addition, the physical, ecological and social conditions in the area of interest are taken into consideration. If hydrocarbons are encountered, additional drilling (appraisal wells) may be undertaken. The appraisal wells aim to evaluate the size and nature of the reservoir, determine the number of development wells required, and decide whether more seismic surveys are necessary. Appraisal drilling is similar to exploration drilling in terms of activities.

There are various types of mobile offshore exploration drilling units (MODUs) and the choice of MODU depends on the water depth at the drilling location as well as other project specifics.

These are the four main types of MODUs: submersible drilling barges for use in calm and shallow water (at depths around 10m); jack-up rigs with extendable legs fixed to the sea floor (operational up to 150m water depths); semi-submersibles floating on the ocean surface with anchors to the sea floor (operational up to 3000m water depth); drill ships where drift is controlled by anchors/propellers (can operate in up to 3650m water depths).

Once on location, well sections of decreasing diameter are drilled from the MODU. A drill bit is rotated in the well and drilling fluids/muds (based on water, synthetic oil or oil) combined with a variety of additives are circulated through the drill string and pumped through the drill bit. The fluid has a number of functions. It provides hydraulic force that assists the drill bit cutting action, lubricates and cools the bit, removes rock cuttings from the wellbore, and it must be heavy enough to withstand the formation pressures. When each well section has been drilled, steel casing is run into the hole and cemented into place to prevent well collapse, fluid slips, and anomalous pressures in the annulus. If hydrocarbons are discovered in quantities that allow them to be economically produced, a wellhead and a “Christmas tree” are installed to allow for future flow control and production. Otherwise, the well is plugged (with cement) and abandoned. When the targeted hydrocarbon-bearing formation is reached, the well may be completed and tested by running a production liner and equipment to flow the hydrocarbons to the surface in an effort to establish reservoir properties in a test separator (drill stem test). Handling of drill cuttings and fluids are major challenges related to drilling.

Offshore exploration drilling programs require support from land. Examples of such support is material laydown areas, storage facilities, emergency response equipment and mud plants. Existing ports, areas and facilities are often adequate for the exploration phase, but expansion or modification could be required.

2.2.2 Development and production

Field development may occur after exploration/appraisal drilling has located and confirmed economically recoverable reserves of hydrocarbons. This phase will involve the installation of a mobile offshore drilling unit (MODU) as explained for exploration drilling. The number of production wells depends on the size of the reservoir, the nature of the hydrocarbon resources the geology and the local environmental conditions. A subsea production template could be used where multiple wells are planned and this could minimize seabed disturbance.

The reservoir fluids are usually a mixture of hydrocarbons, formation water and in some instances, solid particles. As these fluids reach the surface, they are routed to a treatment facility where the constituents such as water, sediment, and dissolved gas are separated for further processing. Production and processing facilities will typically include power generation, accommodation, reservoir fluid processing equipment, control systems, access infrastructure and export infrastructure.

The location of these production and processing facilities needs to take into consideration several factors such as export options, nearby ports, pipeline routes and environmental sensitivities. The facilities may for example be installed on the drilling unit, on separate platform units or on subsea installations The oil and the gas must be stabilised to appropriate specifications to enable transport directly to tankers, to shore through subsea pipelines, or to a floating storage. An FPSO is a floating unit which is designed to produce/process hydrocarbons and to store oil until offloading to a tanker or exporting through a pipeline to shore. Offshore pipelines are normally not buried. Construction of pipelines across the shoreline is often physically and environmentally challenging, and for particularly sensitive shorelines directional drilling techniques are used for the construction.

The water that is produced together with oil and gas (produced water), will contain dispersed and dissolved hydrocarbons, natural chemical components from the reservoir, chemicals used for production and other components. Produced water must be treated to avoid environmental impacts if discharged into the sea. The amounts of water may be huge as compared to the amount of oil/gas towards the end of the production period.

Hydrocarbons may flow freely from the offshore wells if the underground formation pressures are adequate. Production tends to increase relatively rapidly to a peak and then follows a long, slow decline. Water or gas injection is often used to maintain reservoir pressure and enhance production (also known as enhanced recovery).

Production of offshore oil and gas resources requires onshore areas/facilities to be devoted to supporting the operations, such as ports, tank farms, jetties, loading facilities, material laydown areas, storage facilities and processing units. The production phase offshore usually requires a fit for purpose development of new facilities onshore.

Pumps/compressors are used to transport liquids or gas from the oil and gas fields to downstream or export facilities. During commissioning, flow lines, pipelines, and associated facilities are filled with water and hydro tested to check for integrity. Pipeline operation usually requires frequent inspections and periodic right-of-way and facility maintenance. Facilities and infrastructure in the production phase is usually remotely monitored and controlled from a central location.

2.2.3 Decommissioning and abandonment

The decommissioning of offshore facilities occurs when the reservoir is depleted or the production of hydrocarbons from that reservoir becomes unprofitable. Planning for decommissioning is an integral part of the overall management process of a petroleum development and should already be guiding the design of the facilities during field development planning.

Decommissioning plans need to be available at all stages of a project in order to understand and follow up liabilities. The plans should consider other legitimate uses of the sea, such as fishing, safety of navigation and the protection of offshore and coastal environments.

All wells are plugged and abandoned to prevent fluid migration within the wellbore, which could contaminate the surface environment. During this process, the plugs are tested to verify their correct placement and integrity. Finally, the casing is cut off below the surface of the sea bottom and capped and the wellhead and any potential subsea infrastructure removed to ensure no seafloor obstructions are left behind.

Parts of the offshore facilities, such as MODUs, are treated to remove contaminants and are themselves usually removed and reused/recycled, while other components, e.g. pipelines, are usually rendered safe and left in place after requiring the necessary permission from relevant authorities.

An appraisal of safety, environmental and social risks and benefits as well as technical feasibility and cost associated with all decommissioning options is required on a site by site basis to determine the risks and opportunities of the abandonment options. Repurposing of parts of the facilities before recycling should, as an example, be considered. Guidance is provided in several IOGP publications (e.g. IOGP 584, IOGP 585) as well as in Fortune & Patterson (2018) and IMO (1989).

2.3 Environmental management throughout petroleum operations

According to international best practice, petroleum companies are expected to address environmental and social concerns related to a proposed project in a systematic and responsible manner. Companies should manage their environmental and social issues through corporate and project environmental and social management systems. The approach varies from integrated health, safety and environment and community systems to specific environmental management systems such as those following the international standard ISO 14001. ISO 14001 focuses on ten elements of a management cycle:

1. Commitment and accountability: integration of environmental and social concerns by top management leadership;
2. Policies, standards and objectives: establishment of environmental and social policy and objectives;
3. Organisation, resources and capacity: allocation of resources and training of personnel;
4. Stakeholders, i.e. interested and affected parties: engaging with stakeholders, social incl. grievance management;
5. Risk assessment and control: evaluation and analysis of risks in all stages of the planning process including assessment of risks, impacts and mitigation;
6. Asset design and integrity: integration of environmental and social concerns into project design
7. Plans and procedures: preparing environmental and social management plans and compliance/monitoring programs;
8. Execution of activities: implementation of project and associated management plans
9. Monitoring, reporting and learning: environmental and social performance monitoring, reporting and follow-up on incidents;
10. Assurance, review and improvement: audit programs, progress reviews and improvement action plans.

Key specific sources of impacts from offshore oil and gas exploration and production activities are identified in the IFC general EHS guidelines, the EHS guidelines for offshore oil and gas development, and several other publications on environmental management in the upstream oil and gas industry such as IOGP-IPIECA (2020).

Oil and gas exploration and production have the potential to cause a variety of impacts on the natural environment, human health, socio-economic and cultural aspects. Such impacts depend on a complex setting of elements such as project characteristics, the nature and sensitivity of the surrounding environment, the possibility to prevent, mitigate and control impacts and the success of involvement of Government and other stakeholders.

The identification of project-specific activities (e.g. drilling) and aspects (e.g. discharge of drilling mud) is a key step in establishing an understanding of the impacts that are potentially significant. A thorough understanding of the baseline conditions in the anticipated area of influence is vital to identify physical, environmental or socio-economic elements that may be affected by a project. These are called receptors or valued ecosystem components (VECs). Aspects may result in direct impacts (e.g. the physical footprint of a subsea installation will smother benthic flora and fauna underneath the installation) and/or indirect impacts (e.g. waste shipped to shore for disposal can impact landfill waste utilisation by third parties).

Appendix B of this Guideline presents likely key significant aspects, potential significant impacts and possible mitigation measures associated with petroleum activities from seismic surveys to decommissioning of operations.

Impact identification and management for a specific project should build on detailed project-specific baseline data and assessment. Ideally, environmental and social specialists conducting an EIA should contribute to the various design stages of a petroleum development project and provide the design team with timely advice on potential sources of significant environmental and social impacts.

Most EIA reports will be produced for the exploration (e.g., for seismic surveys and drilling activities) and development/production phases (e.g. for production drilling and processing facilities). An EIA, and/or revised EMP, may also be required where substantial project changes or additions are proposed to an existing project (see Section 3).

Identifying and assessing all impacts at the outset of a project can be difficult, particularly those for the decommissioning/abandonment phase which may be 20 years or more away. Major changes to a project, such as the design or location, baseline conditions, the significance of predicted impacts, and proposed mitigation measures may require submission of new information or assessments (EIA, addendum or other documentation). A robust change management process is essential to ensure that project operators and relevant institutional agencies are aligned regarding such amendments.

3 LEGAL CONTEXT FOR EIA IN MOZAMBIQUE

This chapter focuses on the requirements for offshore upstream and midstream petroleum operations based on the EIA Regulations (Decree 54/2015) and the Environmental Regulations for Petroleum Operations (Decree 56/2010) as the key national legislative requirements. It is worth noting that both regulations are not fully harmonised to date. This Guideline is based on the EIA Regulations (Decree 54/2015), however, as both decrees require compliance. Appendix G therefore provides an overview and a comparison of similarities and differences, which need to be adhered to by the project proponent. The key environmental legislation in Mozambique is provided in Appendix E.

The EIA process is the key tool for ensuring responsible development, construction/installation and operation of an offshore petroleum development. To minimise the environmental and social impacts of the development and to strengthen potential positive effects, it is important that the EIA process is initiated at an early stage and that it is actively followed up by the relevant regulatory agencies during the different stages of the exploration and production phase (E&P) of a petroleum development. It is worth noting that Decree no. 54/2015 of 31 December requires the appropriate implementation of the different steps of the mitigation hierarchy (avoid, minimize, restore and, if there are significant residual impacts, offsetting). It should also be noted that associated with this Decree, there are two relevant Ministerial Diplomas:

i. Ministerial Diploma no 55/2022 of 19 May, the Directive on Biodiversity Offsets, which indicates that any Category A+ or A project that has significant residual impacts on biodiversity is required to provide a Biodiversity Offset Management Plan in order to be licensed;

ii. Ministerial Diploma no. 118/2022 of 21 November regarding the Directive on Independent Expert Reviewers of Environmental Impact Studies for Category A+ activities, which defines the process for hiring these specialists.

For references of international good practice in EIA processes, see Chapter 5 and Appendix A.

In Mozambique the environmental impact assessment process starts with the submission of a project registration application by the project proponent. The overall process is illustrated in Figure 3-1 and further explained in the following chapters.

It is worth noting that this Guideline uses the term EIA for the entire process in accordance with national law, while the individual submissions by the project proponent differ depending on the category (A+, A, B or C) decided during the screening process. It is also worth noting that the term environment is used in a holistic way to encompass the physical, chemical, biological and socio-economic environment in line with the Environmental Framework Law of Mozambique (Law 20/1997).

Key points

- Mozambique law sets out requirements for environmental impact assessment and project licensing processes.
- A project registration process (comparable to screening) is in place to determine the appropriate level of assessment for a project (categories A+, A, B or C).
- EIA reports should be prepared in accordance with the requirements of the EIA Regulations (Decree 54/2015) and the Environmental Regulations for Petroleum Operations (Decree 56/2010). Adherence to international best practice, in line with the EIA guidelines, is also expected.
- Proponents shall disclose all documents submitted for review during the EIA process. Reports submitted to the MTA should be disclosed on the proponents and EIA consultants websites.

- The submitted documents must also be made available in physical format in places duly advertised and communicated by the proponent and EIA consultants.
- EIS reports are reviewed by the MTA (DINAB, following SPA's review), who establishes a technical evaluation commission on a case-by-case basis. Comments are provided to the Proponent/Consultant in the form of a Review Report. If appropriate, the submission will be approved by MTA, who then issues the relevant applicable environmental license.

Petroleum operations are primarily governed by the Petroleum Law (Law 21/2014), which in turn is regulated by the Petroleum Operations Regulation (Decree 34/2015). The Petroleum Law also governs infrastructure owned and / or used by concession contract or third parties (including moveable infrastructure such as vessels). The licensing for the construction and / or demobilisation of infrastructure in the possession of and / or used by the petroleum rights holders is also governed by Ministerial Decree 272/2009, which applies to concessionaires, operators, and subcontractors. Liquefied Natural Gas (LNG) is included within the scope of the Petroleum law, but typical downstream activities such as refining, industrial use, distribution and commercialisation of petroleum products are not.

The Petroleum Operations Regulation (Decree 34/2015) establishes rules for the granting of rights for petroleum operations which, in turn is achieved by means of a concession contract. There are four types of concession contracts:

- Concession contract for reconnaissance (Contracto de Concessão de Reconhecimento), which grants non-exclusive rights to conduct preliminary prospecting and evaluation of an area through surveys and which is granted for a non-renewable term of two years;
- Concession contract for exploration and production (Contracto de Concessão para Pesquisa e Produção), which entails an exclusive right to conduct exploration (up to eight years) and petroleum operations (up to thirty years from the approval of the relevant development plan), and non-exclusive rights to build and operate production and transportation facilities;
- Concession contract for construction and operation of oil or gas pipelines systems (Contracto de Concessão para Construção e Operação de Sistemas de Oleoduto e Gasoduto), which grants the right to build and operate oil and gas pipelines where such operations are not covered by a concession contract for exploration and production (valid for a period of up to thirty years); and
- Concession contract for infrastructure construction and operation (Contracto de Concessão para Construção e Operação de Infraestruturas), which grants the right to build and operate facilities for petroleum production, which are not covered by an approved exploration and production development plan. The actual building permits are granted based on the provisions of Ministerial Diploma 272/2009

Concession contract holders are subject to a range of duties and obligations, including to:

(i) allow control and monitoring by competent authorities, including access to technical, economic and financial information;
(ii) deposit a performance guarantee;
(iii) report discoveries and development plans;
(iv) ensure local employment and training of national citizens (particularly those living in the concession area);
(v) perform tendering for procurement contracts above a certain value;

(vi) ensure partnering of foreign suppliers with Mozambican individuals or entities;
(vii) have preference for local compatible products and services;
(viii) allow for third party access to use infrastructure when possible; and
(ix) to list on the Mozambique stock exchange.

The Petroleum Operations Regulation (Decree 34/2015) further stipulates that the concession contract holder or the operator should prevent any damage to the environment and that records of all environmental impacts resulting from the operations are maintained.

Rights to petroleum operations may only be granted when national interests, in connection to the environment, and the management and preservation of natural resources are safeguarded. Rights' holders must meet a range of general environmental and social obligations, including:

- Establishing a closure and decommissioning fund, and to submit an adequate decommissioning plan (in accordance with Article 41 of Decree 34/2015, the closure plan and the related decommissioning costs should be updated annually);
- Using the most efficient and appropriate methods in terms of technology;
- Complying with the provisions of the EIS, i.e. all commitments made in the EIS; and promoting health and safety actions;
- Compensating injured parties for losses or damages arising from the operations.

There may also be specific environmental (and other) requirements included in the concession contract. Further, concession contracts for larger projects may be the subject of specific laws, as for example is the case for the planned LNG projects in the Rovuma basin, where Decree-Law nº 2/2014 (Special legal and contractual regime applicable to liquefied natural gas projects in Areas 1 and 4 of the Rovuma Basin) established a specific legal and contractual regime.

The granting of a concession contract does not entail an automatic DUAT, i.e the right to land. While offshore petroleum activities do not occupy land, they are likely to need associated terminals or onshore bases that, in turn, require a DUAT. In such case, the DUAT must be obtained in accordance with the provisions of the Land Law, and its duration must further be compatible with the term established in the concession contract. More detail is provided in the onshore EIA Guidelines.

The Petroleum Law (Law 21/2014) stipulates that the state should establish mechanisms for local community involvement and participation, and that a percentage of the revenue generated should be allocated, through the state budget, to local community development. Further, the State also has the right to participate in any phase of petroleum operations, with conditions established by a relevant contract.

The State supervises and controls all types of exploration and extraction related activities and failure to comply with obligations arising from legislation or the relevant concession contract may be sanctioned with fines. Concession contracts can also be revoked (e.g. in cases of submission of false or incorrect information).

In terms of environmental issues, petroleum activities are subject to the Environmental Regulations for Petroleum Operations (Decree 56/2010).

Under these regulations, petroleum operations are defined as "operations related to the planning, preparation and implementation of the activities of reconnaissance, exploration, development, production, treatment, storage, petroleum transportation, cessation of such activities or termination of the use of infrastructure, including the implementation of a decommissioning plan, sale or delivery of petroleum to the point of supply or loading as a

commodity, in the form of liquefied natural gas or delivered for energy generation or industrial use".

The Environmental Regulations for Petroleum Operations (Decree 56/2010) establishes the requirements for the EIA process for petroleum operations and the procedures to be followed in terms of prevention, control, mitigation and rehabilitation measures. The objective is to promote the correct and efficient environmental management of petroleum resources, with a view towards the sustainable development of Mozambique. These regulations are in the process of being updated following the update of the EIA Regulations (Decree 54/2015) and the Petroleum Law (Law 21/2014) and Regulations (Decree 56/2010). The decree provides for three environmental categories regarding the classification of petroleum activities for environmental permitting:

- Category A – activities related to the exploration, development, production, construction and operation of oil and gas pipelines, decommissioning, and other activities to be carried out in sensitive ecosystems and conservation areas;
- Category B – activities related to exploration, except in conservation areas and sensitive ecosystems;
- Category C – activities which by their nature do not entail negative impacts on the environment and public health.

According to the Environmental Regulations for Petroleum Operations , the main applicable tools for environmental assessment and control include Environmental Impact Study (EIS) for Category A activities, and a Simplified Environmental Study (EAS) for Category B activities.

Petroleum activities are also governed under the EIA Regulations (Decree 54/2015), see Section 2.3.1. This despite Decree 54/2015 stating that the petroleum sector is governed by "specific regulation" (i.e. Decree 56/2010). Nevertheless, in Decree 54/2015, petroleum activities are included in the category of activities that are subject of an EIA process. Most petroleum activities are termed "A+" activities, which are subject to an elevated level of social and environmental scrutiny.

Since the two above-mentioned decrees are at the same level in the legal hierarchy (both being decrees) they have equal legal status. Both decrees are being enforced (by MTA and MIREME, respectively, see below). In practice, this means that when an issue or aspect is regulated by both decrees, then the regulation with the comparatively stricter requirement will need to be abided by, subject to the decision of the relevant environmental authority. The provisions of the two decrees are, nevertheless, broadly similar with the main differences being in the environmental classification systems (see Section 2.3.1) and in the level of fees for environmental licensing (with significantly higher license fees in Decree 54/2015). They also differ to some extent with regards to requirements for contents of reports to be submitted to the authorities at the different stages of the environmental permitting process and in the timelines to communicate the decision.

It is worth noting that Decree 54/2015 and Decree 56/2010 are currently under revision to achieve a better alignment among the applicable legal instruments.

During to the EIA process a concession contract for exploration and/or production between the proponent and INP has to be in place and a title for the private use of marine space in accordance with Decree nº 21/2017 has to be obtained by the proponent.

3.1 Project categorisation

The overall EIA process, according to EIA Decree 54/2015, is illustrated in Figure 3-1 and summarised below.

The EIA Regulations (Decree 54/2015 of 31 December 2015) establish the rules governing the EIA process, which applies to all public or private sector activities that may directly or indirectly impact on the environment.

One of the objectives of the EIA process is to support decision making regarding the environmental licensing of a proposed activity and/or development. Article 4 of Decree 54/2015 defines the following categories for proposed projects:

1. Category A+: Projects that, due to their complexity, location and/or irreversibility and magnitude of potential impacts, deserve not only a high level of social and environmental surveillance, but also the involvement of specialists in the EIA process. Annex I of the EIA Regulations (Decree 54/2015) lists the activities that fall under this category. Category A+ projects require a complete process, which includes the EPDA and EIS (including an EMP), reviewed by independent expert reviewers with proven experience;
2. Category A: Projects that significantly affect living beings and environmentally sensitive areas, with potential impacts of great duration, intensity, magnitude and significance on living beings or sensitive areas. This category includes the activities listed in Annex II of the EIA Regulations. Category A projects require a full EIA process, which includes the EPDA and EIS (including an EMP);
3. Category B: Projects with potential impacts on living beings and in sensitive areas that are of lesser duration, intensity, magnitude, and significance compared to Category A projects. This category includes the activities referred to in Annex III of the EIA Regulation. Category B projects require the preparation and submission of the Terms of Reference, which must be approved by the MTA before the start of the Simplified Environmental Study (EAS);
4. Category C: Projects with negligible negative impacts, which do not lead to irreversible impacts, and which have positive impacts that are greater in number and more significant than the negative ones. This category includes the activities referred to in Annex IV of the EIA Regulations. These projects require submission of best practice environmental management procedures for approval by the MTA.

Due to the inherent risk of petroleum developments such projects are usually categorised as Category A+ or A projects. These are described in more detail below and related report content requirements are provided in Section 3.2.

Survey activities, that do not include seismic surveys, such marine environmental baseline or monitoring surveys for primary data collection, may be classified as Category B or C.

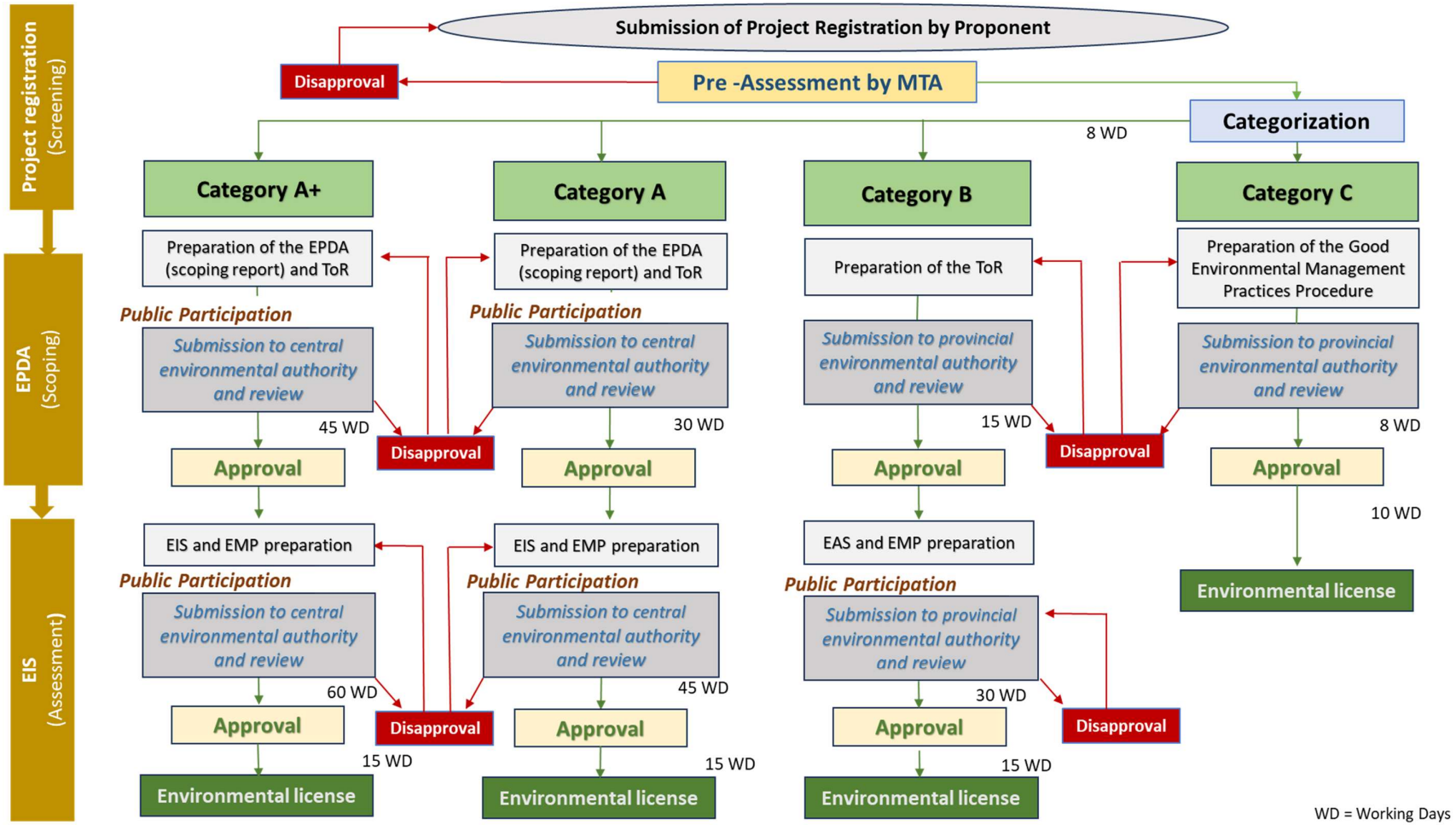

Figure 3-1: Simplified EIA process according to the EIA Regulations (Decree 54/2015)

Note that in addition to the EMP shown above, additional management plans, such as for waste management, pollution prevention and control, emergency response and, in case of significant impacts on biodiversity, biodiversity offsetting may be required.

3.1.1 Category A+ and A projects

In accordance with Decree 54/2015 the EIA process consists of the following three key phases:

Phase 1 - Project Registration (Instrução do Processo)

The first step of the EIA process is initiated with the submission of a Project Registration Document. The legal requirements for the content of the document are shown in Factbox 3-1.

The document is submitted to the Provincial Environmental Service (SPA) which is the Environmental Impact Assessment Authority at the provincial level where the project is located or to the Economic Activities Service of the City of Maputo (SAECM), for activities located in the City of Maputo . Based on this information, a site visit is carried out by SPA or SAECM technicians to support decision-making. The costs associated with this visit are borne by the proponent.

SPA or SAECM categorise the projects based on the level of environmental assessment required. The authorities have a legally established deadline of 8 working days to issue the Categorization of the Project.

Phase 2 - Environmental Pre-Feasibility and Scope Definition Study (EPDA)

The main objectives of this second phase are the identification of potential fatal flaws (similar to major environmental or social constraints) , a high-level identification of the potential impacts of the project, and the definition of the Terms of Reference (ToR) for the EIS. The EPDA phase identifies the main issues and problems associated with the proposed development, which may include project activities with the potential to contribute to or cause potentially significant impacts on existing environmental and socio-economic receptors and resources in the area of influence of the project. The EPDA phase entails:

- Gathering technical data to provide a description of the proposed project;
- Gathering baseline data about the project area to provide an understanding of the biophysical and social environment and identify any issues that require more detailed investigation in the EIA Phase;
- Identifying potentially significant environmental and socioeconomic impacts;
- Stakeholder Engagement – to initiate a dialogue with Interested and Affected Parties (I&APs) by presenting details of the proposed development to facilitate their understanding and enable them to comment on potential issues. The EPDA and ToR are disclosed to stakeholders and the Draft EPDA Report and ToR are presented in public meetings;
- Compiling specific project, environmental and social information into a Final EPDA Report, together with the final ToR for the EIS. The EPDA should analyse whether there is a potential need to develop biodiversity offsets and, if so, include the PGCB in the ToR.
- The EPDA, in Portuguese language, must be submitted to the EIA Authority (MTA) at central and provincial levels, with the number of copies determined during the project registration stage. For Category A and A+ the Technical Commission reviews the report and for Category A+ activities, the EPDA will also be reviewed by a panel of Specialist Reviewers whose report must be approved by the EIA Authority before the EIA can proceed.; MTA has 45 working days for the review of a Category A+ project and 30 working days for a Category A project and to issue the approval of the report. At this stage, the Provisional License can be issued.

The legal requirements for the content of the EPDA report are shown in Factbox 3-2.

Phase 3 - Environmental Impact Study (EIS) Phase

The main objectives of the third phase are the detailed assessment of the impacts identified in the EPDA, the identification of new impacts not previously identified, the detailed analysis of alternatives, the definition of mitigation measures and the elaboration of the EMP. The EIS Report serves as a basis for decision-making by the competent authorities, which may, if appropriate, result in the issuance of the environmental license or rejection of the proposed activity. The main tasks performed at this stage are:

- Specialist Studies: Based on the findings of the EPDA phase and any identified data gaps, specialist studies are undertaken to investigate and establish in detail existing baseline conditions pertaining to the project and its surroundings and to identify receptors and resources sensitive to potential impacts. This includes the collection of primary data, through field work and investigations, as well as the compilation, analysis and interpretation of relevant secondary data, in order to support the establishment of an updated social and environmental baseline. The outcome of these studies form the basis of the baseline description and assessment of the potential impacts on the affected environments.
- Impact Assessment and Mitigation aims to identify, classify, and assess the significance of impacts on receptors and resources, based on pre-defined criteria; prepare and describe the measures that will be taken to avoid, minimize or compensate for adverse environmental impacts, enhance positive impacts, and report the significance of residual impacts, after mitigation.
- EIS and Environmental Management Plan (EMP): The EIS report includes an update to the project description, the definition and description of the final areas of influence, analysis of alternatives, detailed environmental and social baseline, and impact assessment and mitigation measures. Impacts are identified and fully assessed, using an impact assessment methodology. Mitigation measures are defined and described for significant impacts, in order to reduce the significance of the residual impacts to acceptable levels, following the mitigation hierarchy (avoid, minimise, reduce or compensate) for any potential adverse environmental effects and the enhancement of positive impacts. The impact assessment informs the development of an Environmental Management Plan (EMP), which contains specific measures and commitments by the project to address identified impacts. Details regarding biodiversity conservation and the potential need for a PGCB are provided in Appendix A.1.
- Stakeholder Engagement, continuing the dialogue with Interested and Affected Parties (PI&As) by presenting details of the proposed development to facilitate their understanding and enable them to comment on potential issues. The Draft EIS and EMP are disclosed to stakeholders and presented in public meetings. The stakeholder database is updated considering the results of the stakeholder engagement during the EPDA, and the addition of any other relevant stakeholders. Following a public comment period (15 days for Category A and 45 days for Category A+ projects), a Public Participation Report is compiled with a Comments and Responses register annexed, to be included in the Final EIS.

The Draft EIS and EMP are updated and finalized considering the findings of the public meetings as well as the comments and suggestions received. The legal requirements for an EIS are shown in Factbox 3-3.

The EMP commits to specific measures by the project to address identified impacts. The EMP includes recommendations for an on-going environmental management and monitoring programme that will check the effectiveness of the mitigation measures stated in the EIA, ensure that environmental awareness and education measures are implemented along the life cycle of the project, on-going consultation with key stakeholders takes place and that an Emergency Prevention and Response Plan is in place. Once the environmental license is issued, the EMP will be part of the licensing conditions to ensure that the project is conducted and managed in an environmentally and socially responsible manner.

As part of the EMP, complementary management plans are produced, these may include, among others, the following:

- Waste Management Plan (WMP);
- Environmental Education Plan
- Decommissioning and Rehabilitation Plan
- Emergency Response Plan;
- Communication Plan;
- Grievance Mechanism;
- Oil Spill Contingency Plan
- Biodiversity Offset Plan (if applicable, and regulated by specific legislation).

Category A+ projects will be reviewed by independent specialists as per Ministerial Diploma nº 118/2022, of 21st of November, and will have up to 360 days to submit the EIS Report after the approval of the EPDA and ToR, while Category A projects have 270 days to complete and submit their EIS. The proponent may require an extension of the submission deadline in writing, duly justified and submitted to the environmental authority. If the EIA Authority requires any additional information, the proponents have 90 days to submit the required information for Category A+, respectively A projects.

The EIS must be submitted to the EIA Authority, at central and provincial levels, in Portuguese. The number of copies to be submitted is determined in the letter of approval of the EPDA and ToR. The EIS will be reviewed by the same technical review commission (A and A+) and panel of expert reviewers (A+) that reviewed the EPDA. The review report must be prepared by the EIA Authority (in this case DINAB) and a decision communicated to the proponent within 60 working days for A+ projects and 45 working days for A projects, from receipt of the EIS report.

Under exceptional circumstances, the Environmental Authority may require an extension of the deadline, that will vary according to the complexity and specificity of a given project, notifying the proponent in writing.

3.1.2 Category B projects

The Category B EIA process is less complex and shorter in time than A+ and A Categories. An EPDA is not required, which means that after categorization, the process starts directly with the preparation of the ToR for the Simplified Environmental Report (EAS).

Phase 1 - Terms of Reference

The proponent of Category B projects has ninety days after categorization to submit the ToR for the Simplified Environmental Report (EAS). The ToR for the EAS must be submitted to the Provincial EIA Authority for approval.

Phase 2 - Simplified Environmental Report (EAS)

- Once the ToR for the EAS has been approved by the EIA Authority (in this case at Provincial level as above described) the project proponent should prepare the EAS. Factbox 3-4 lists the minimum content of an EAS from a legal perspective.
- The report, written in Portuguese, must be submitted to the relevant EIA Authority within 180 days from the date of approval of the ToR. The number of copies is determined during the approval of the ToR. The proponent may require an extension in writing, of the submission deadline, duly justified, to be submitted to the environmental authority.

During the review, the EIA Authority may request additional information. Following the review, the Technical Commission will elaborate a review report that will be the basis for the decision on environmental licensing by the EIA Authority.

3.1.3 Category C projects

The Category C EIA process is less complex than A+, A and B Categories. An EPDA is not required, which means that after categorization, the process starts directly with the preparation of the procedures for best practices for environmental management to be submitted to the provincial environmental authority.

The EIA Provincial Authority will communicate a decision to the proponent within 8 working days from receipt of the procedures for best practices for environmental management report.

As per Article 18 in Decree 56/2010, once the report is approved, MTA will issue a Declaration of Exemption for Category C Activities.

3.1.4 Environmental License

In line with the EIA Regulations, there are three steps on the Environmental Licensing process, as follows:

- "Provisional Environmental License" (*Licença Ambiental Provisória)* – following the approval of the EPDA and ToR for the EIS. This license is not mandatory but can be requested at demand. It is valid for 2 years and is not renewable. It allows the project to begin the so-called early works.
- "Installation Environmental License" (*Licença Ambiental de Instalação*) – following the approval of the EIS for category A+ and A (and Proof of submission and approval of the Resettlement Plan, should resettlement be required), EAS for B category projects, or Good Environmental Management Practices for Category C. It allows the project to begin construction activities. This license is valid for 2 years and renewable subject to substantiation;
- "Operational Environmental License" (*Licença Ambiental de Operação*)– following verification of full compliance with the EIS/EAS and with the Project facilities already built (as well as the implementation of the Resettlement Plan, in case resettlement was required), allows for the project to start operations and is valid for 5 years and renewable.

For acquisition of the Environmental License a fee is charged. This fee is only paid once, when the EIA process has been finalized and relevant documentation has been approved by MTA. The payment is done before the issuing of the Installation Environmental License and is a percentage of the total investment amount, and it differs for the different categories.An application for renewal of the license should be submitted by the project proponent to MTA before the end of its validity and is subject to the payment of a fee. The requirement to renew the license normally includes updating the EMP, however it is MTA's responsibility to state the conditions for the renewal of the license once the application is received.

The environmental licensing process is supported by the national Environmental Licensing Management System (SGLA, https://www.sgla.mta.gov.mz/)

This web-based system assists the technicians of the MTA (DINAB, SPA and AQUA) as well as DNDT, project proponents, consultants and the general public in relation to the integrated and centralized management of information on the environmental licensing process.

3.2 The phases of the EIA process

This chapter provides information regarding the steps for complying with legal requirements related to the EIA planning process for petroleum activities.

It should, however, not be relied on as the sole and authoritative source of guidance. Particular attention should also be paid to Section 5 where key requirements related to international good industry practice (GIIP) for each of the phases of the oil and gas lifecycle are described.

3.2.1 Project registration (screening)

International good practice on EIA in general, the EIA Regulations (Decree 54/2015) and the Environmental Regulations for Petroleum Operations (Decree 56/2010) regarding the preparation of the project registration (screening) should be followed (see also Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**). The application should, as a minimum, contain the information listed in Fact box 3-1 plus any additional information that supports the decision-making by the MTA.

Factbox 3-1: Legal requirements for the content of the Project Registration Document

- Descriptive memoir and preliminary design of the activity
- Justification for the need and desirability of the project
- Legal framework relevant for the activity
- Brief description of the biophysical and socio-economic setting of the project area and area of influence
- Current land use on the proposed site
- Completion of the preliminary environmental information form (Annex VI of the EIA Regulations)
- A proof of having a DUAT or a provisional DUAT (Land Use Rights), as applicable
- Exploration Plan

Projects relating to seismic acquisition are to date classified as Category A due to the high ecological sensitivity and biodiversity of Mozambique's territorial waters. The same applies for projects relating to exploration or appraisal drilling due to the high ecological sensitivity and biodiversity of Mozambique's territorial waters and the inherent risk of drilling operations.

Projects relating to field development and production are to date always classified as Category A+ due to the high ecological sensitivity and biodiversity of Mozambique's territorial waters and the inherent risk of petroleum installations for field production.

3.2.2 EPDA (scoping)

If a project is categorised as Category A+ or A, the next phase of the EIA process is the scoping phase with the submission of the Environmental Pre-Feasibility and Scope Definition Study (EPDA). In accordance with the legal requirement, this document focuses on the identification of possible serious environmental or social constraints (so-called fatal flaws), high-level potential impacts and the definition of the Terms of Reference (ToR) for the EIS.

Factbox 3-2 identifies the legal requirements regarding the content of the EPDA.

Factbox 3-2:
Legal requirements for the content of the EPDA

- Non-technical summary
- Identification and address of the proponent and the EIA consultant team
- The area of influence of the proposed activity (both direct and indirect)
- The limits and land patterns in the indirect and direct area of influence of the project
- Description of the project, including all activities and respective alternatives, relating to the planning, construction, exploration, and, as applicable, decommissioning stages
- Description of the biophysical and socio-economic environments, including a preliminary identification of ecosystem services and the vulnerability to climate change
- Identification and assessment of any fatal flaws
- Indication of potentially relevant impacts relevant for the activity, including those relating to climate change
- Identification of potential need for a Biodiversity Offset Management Plan
- Identification and description of the aspects to be investigated in detail in the EIS (Terms of Reference (ToR))
- A report on the public participation process

3.2.3 EIS (assessment)

This phase of the EIA process includes the preparation of the EIS and the associated EMP. It covers a detailed assessment of potential positive and negative impacts of the activities related to a particular project, the identification of mitigating measures and the development of the environmental management plan.

Factbox 3-3 identifies the legal requirements regarding the content of the EIS.

Factbox 3-3: Legal requirement regarding the content of an EIS

- A non-technical summary covering the main issues, conclusions, and recommendations
- Identification and address of the project proponent
- Identification of the multidisciplinary team that carried out the EIS
- The legal context of the activity, including resettlement and/or biodiversity offsets, as applicable, and its insertion into existing land use plans, for the direct and indirect areas of influence of the project activities
- A description of the activity during the planning, installation/construction, operation and decommissioning phases
- A detailed description and comparison of alternatives
- Geographical location and representation of the area of influence of the activity
- A description of the baseline environmental and social situation, including a qualitative assessment of the existing ecosystem services and an evaluation of the vulnerability of the project to the effects of climate change
- A forecast of the future environmental situation with and without the implementation of the recommended mitigation measures
- Summary of the impacts and environmental and social feasibility of the alternatives
- Identification and analysis of the impact of the project on the health, gender and vulnerable members of affected communities and the associated mitigation measures
- Identification and assessment of the direct, indirect, residual, and cumulative impacts and the proposed mitigation, enhancement and/or compensation measures
- The provisional or final land use permit (DUAT) for the project area
- An Environmental Management Plan (EMP) that includes the monitoring of impacts, as well as environmental education, communication, accident emergency and contingency programs/plans.
- As applicable, Biodiversity Offset Management Plan as an annex to the EIS
- For A and A+ Category, a decommissioning and rehabilitation plan
- As applicable, a Physical and Socio- Economic Survey Report (RLFSE) as an annex to the EIS, to be submitted and approved by the entity that supervises the resettlement process, elaborated according to the technical directive for the preparation and implementation of resettlement plans (Ministerial Diploma 156/2014). The RLFSE must include the report of the public participation meetings (at least two) held for the resettlement process.
- Public participation process report
- The proof of payment of the Income tax, for consultants not domiciled in Mozambique (subcontracted)
- The Specialist studies as an Annex
- For A+ Category, the report of the Independent Expert Reviewers must be submitted to the environmental authority before the approval of the EIS.

3.2.4 EAS (assessment)

In case a project is classified as Category B a Simplified Environmental Report (EAS) is required for submission once the ToR is approved. It comprises a less complex and shorter assessment than Category A+ and A projects.

Factbox 3-4 identifies the legal requirements regarding the content of the EAS.

Factbox 3-4: Legal requirements for the content of the Simplified Environmental Report

- Non-technical summary
- Description of the activity and its geographic location
- Legal framework relevant for the activity and its inclusion in existing territorial plans for the area of direct and indirect influence
- Brief description of the baseline environmental situation in the area of influence of the activity, including potential vulnerability to climate change
- Identification and assessment of impacts, including possible impacts of climate change and ecosystem services and respective mitigation and/or enhancement measures, following the mitigation hierarchy
- Environmental management plan that includes a monitoring plan, an environmental education program and contingency plans for accidents
- Public participation report
- Identification of the multidisciplinary team elaborating the EAS

3.2.5 Public participation

Public participation is a fundamental part of the EIA Process, and a legal obligation in Mozambique. Its main objective is to involve interested and affected parties in the EIA Process, since its early stages, providing information on the proposed activities and their potential impacts. The Public Participation Process (PPP) provides interested and affected parties with the opportunity to express their opinions, concerns, and expectations regarding the proposed project. An important element of the public participation process is also to manage expectations of stakeholders to ensure the potential risks and benefits of a project are clearly understood.

Compliance is a legal requirement and failure to comply may result in risks to the development of the project.

The Public Participation Process in the scope of Environmental Impact Assessment in Mozambique, is legislated by the following legal instruments:

- EIA Regulations (Decree 54/2015);
- Environmental Regulations for Petroleum Operations (Decree 56/2010); and
- General Directive Public Participation in the Environmental Impact Assessment Process (Ministerial Diploma 130/2006) that describes the procedural requirements for the Public Participation Process, as established in the EIA regulations. This directive establishes the norms and general principles that need to be met in undertaking the public participation process.
- Biodiversity Offsets Directive (Ministerial Diploma 55/202, of 19th of May), which presents the specificities of public consultations for the development of this plan.

In accordance with Decree No. 56/2010, public consultation is mandatory for all projects in A and B Categories, while in accordance with Decree No. 54/2015, public consultation is mandatory for all projects in categories A+, A and B.

The public participation process in the scope of the EIA process is the responsibility of the proponent, that also covers all costs associated with the participation of the environmental authorities and the authority with mandate over the Petroleum sector, as well as the costs associated with the participation of the local communities.

The public participation process comprises the following:

- Regarding categories A+ and A, public consultation meetings must be held during the two phases of the EIA process, with the first to release the EPDA preliminary report and the second to release the EIS preliminary report.
- The location of the meetings depends on the complexity of the project and number of Districts/Provinces involved. For projects that involve more than one Province, public meetings must be carried out in each of the provinces. For highly complex projects a public meeting at central level may also need to be carried out.
- The announcement of public consultation meetings must be publicized in the media (newspaper and radio) at national and local levels, at least 15 days before the meetings. For Biodiversity Offset Management Plans, public consultation meetings must be announced at least twice, 30 (thirty) and 15 (fifteen) days before the consultations take place
- Invitation letters are sent, accompanied by the Non-Technical Summary (NTS) of the Report, to the key interested and affected parties, previously identified by the Consultant and the Proponent (stakeholder identification and mapping).
- Local communities in the area of influence of the project are invited to attend the public meetings;
- All technical reports (EPDA and EIS) must be available for consultation by the public at least 15 days before the meetings;
- The public meetings are open to all interested parties, and the participation of the environmental authority and the authority with mandate on the sector (in this case MIREME) is mandatory.
- After the meetings, the public has 45 days to send comments on the EIS to the consultant, for Category A+; and 15 days to send comments on the EIS to the consultant, for Categories A and B. For Biodiversity Offset Management Plans (PGCB), the public has 15 days to submit comments.;
- The results of public participation for each stage of the process are compiled in a Public Participation Report, including an Issues and Responses Matrix reflecting all that was discussed during the public meetings. The report is either inserted in, or annexed to, the Simplified Environmental Study Report (Category B), and the Scoping Report and the EIA Report (for A+ and A categories).

4 REQUIREMENTS SPECIFIC TO EACH PHASE OF THE O&G LIFECYCLE

This chapter provides information regarding important aspects in relation to good international industry practice (GIIP). Respective information on biodiversity can be found in Appendix A.1.

This section can therefore be used as a reference for the project proponent for quality assurance. It should, however, not be relied on as the sole and authoritative source of guidance.

4.1 Seismic surveys

A general description of the activity is provided in Section 2. Likely key aspects, potential significant impacts and possible mitigation measures (examples of good international industry practice) are described in Appendix B-1 and examples of typical alternatives are provided in Appendix C.

4.1.1 Project registration (screening)

In addition to the general requirements described in Section 4.1 the following requires attention and should be considered during project registration:

- Brief overview of the proposed project, including as appropriate:
    - Location and scale, including a map of sufficient scale to locate the project area in Mozambique and, at a regional/local level, showing the relevant petroleum operation license block(s) and areas of activities in relation to relevant administrative boundaries.
    - Main facilities, infrastructure (including access), and activities planned, including the likely support from land (e.g. supply bases, harbour facilities, logistics/transportation). Include graphical documentation such as layout or schematic diagrams as appropriate.
    - Timing and duration of the proposed project activities
    - Brief identification and assessment of whether the project is logically or economically linked with other projects (reference is made to associated facilities[5]) or parts of the same development so that the MTA can decide if these should be included in an EIS.
    - The proponent must also include proof of the approval of the terms and conditions of the exploration and production concession contract. Identification of the already known key alternatives, justifying their choice where key decisions have already been made. This may include surface towed receivers versus ocean bottom receivers, the timing of surveys to avoid ecologically sensitive periods, use of various supply bases, etc.
- Preliminary identification of the area of influence[6] for the main likely impacts of the project on key receptors and a list of major potential impacts of the activities (direct and indirect) including the potential for significant impacts as a result of unplanned events.

[5] Associated facilities are defined as facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without the project would not be viable (IFC, 2012).
[6] Reference is made to IFC's definition of the Area of Influence in Section 5, definitions.

- Identification of whether areas of special value such as of biodiversity or cultural heritage value, or whether any of the criteria for identifying projects with significant impacts apply. This should include the identification of whether the project will impact any of the environmentally sensitive areas in line with the EIA regulations (specially Annex V) and the Directive on Biodiversity Offsets (specially Key Biodiversity Areas - KBAs), while also considering the list/definitions of such areas defined in other regulations, e.g. RAMSAR Convention on Wetlands (Ramsar 2018) and Convention on Biological Diversity (ratified by Mozambique in 1994) and/or additional sensitive habitats or ecosystems such as coral reefs, mangroves or sea gras meadows and/or sensitive fish spawning areas.
- Identification if there is a potential for transboundary impacts. If applicable, arrangements for consultation on transboundary issues should be discussed and agreed with MTA and INP as early as possible.
- In addition to the submission to the MTA the project proponent should publish the project registration application on its website.

4.1.2 Category A projects – EPDA (scoping)

In addition to the general requirements described in Section 4.1 the following issues should be considered in relation to international best practice:

Environmental Pre-feasibility Study (EPDA)

- Description of the overall project for seismic data acquisition including all respective facilities or activities, such as survey and supply vessels, warehousing and storage facilities, transportation logistics, use of harbour facilities, waste facilities, etc.
- Preliminary identification and assessment of alternatives and the rationale for the selection of any preferred options. This may include surface towed receivers versus ocean bottom receivers, the timing of surveys to avoid ecologically sensitive periods, use of various supply bases, etc.
- Consideration of potential constraints on data collection and analysis and how these will be addressed in the EIS.
- A gap analysis for available baseline data and consideration whether ecological surveys need to be conducted to support the preparation of the EIS. As only limited secondary baseline data is available in Mozambique, field surveys/primary data collection may be needed to adequately identify and assess impacts, if important receptors are likely to be present.
- A refinement of the area of influence (both direct and indirect), previously defined in the project proposal, for the main likely impacts on the key receptors and revision of the area as needed.
- Identification of potential positive and negative impacts from planned and unplanned events of the project.
- A transparent assessment scoping-in and scoping-out of potential receptors (VECs) identifying which VECs will be studied further in the EIS and which ones will not. The results will be described in the ToR (see below).
- Preparation of a stakeholder engagement plan detailing the engagement methods for the various stakeholder groups, timing of engagement and means for recording and communicating engagement outcomes.

- Conduct stakeholder consultations during the EPDA phase according to the stakeholder engagement plan and establish a database to record all consultations undertaken and the outcomes of that consultation.
- Communicate the means for disclosure of the EPDA and TOR as well as how feedback can be provided during stakeholder consultation.
- Publish the submissions on the company and EIA consultant websites to facilitate stakeholder review and feedback.
- Identification and description of all aspects to be investigated in detail in the EIS and which are further detailed in the Terms of Reference (ToR, see below).

Terms of Reference (ToR)

- A clear description for the approach to baseline data collection (primary and secondary data, as applicable) to inform the EIS. As only limited secondary baseline data is available in Mozambique, field surveys/primary data collection may be needed to adequately identify and assess impacts, if important receptors are likely to be present.
- Description of the proposed impact assessment process and the methodology for the identification and assessment of impacts to be used in the subsequent EIS, including the methodology and criteria for assessment of significant residual impacts.
- Description of identified project alternatives and the methods used when choosing and comparing these. This may include surface towed receivers versus ocean bottom receivers, the timing of surveys to avoid ecologically sensitive periods, use of various supply bases, etc.
- Consideration of primary data collection to fill data gaps identified in the gap analysis. As only limited secondary baseline data is available in Mozambique, field surveys/primary data collection may be needed to adequately identify and assess impacts, if important receptors are likely to be present. Baseline surveys/data gathering may focus on:
    - Ecologically important or sensitive habitats/ecosystems if present.
    - Key areas/habitas used for resident, migratory, breeding and feeding species, if present
    - Any threatened, endangered and/or endemic species and/or with restricted distribution potentially present.
- Consideration of whether there may be any significant cumulative impacts and set out how these will be assessed during the EIA process.
- Consideration of whether there are likely to be any significant transboundary impacts, e.g. from accidental events.
- Elaboration of the stakeholder engagement plan (SEP) building on the plan for the scoping phase. The SEP should describe the purpose, methodology, approach to stakeholder consultations, engagement means, timing and frequency of engagement and means for recording and communicating engagement outcomes. Stakeholder identification and analysis should be undertaken considering all relevant stakeholder groups such as project affected people and communities as well as vulnerable or marginalised groups. The plan should include establishing a database to record all consultations undertaken and the outcomes of that consultation to inform the EIS.
- Where coastal fisheries or livelihoods may be adversely impacted, consideration of such impacts to livelihoods and the associated mitigation measures to restore or improve

livelihoods (that are part of a resettlement and compensation plan) should be coordinated with the EIA process.

- A formal and culturally appropriate grievance mechanism which is accessible to all stakeholders and enables stakeholders to voice grievances and get them addressed in a timely and effective manner.
- Communicating the means for disclosure of the submissions and how feedback on the EPDA can be provided ensuring that all relevant stakeholders are consulted. For example, consultation with provincial as well as national groups and organisations may be needed.

  It is acknowledged that current regulations provide for only 15 days of public commenting after each public meeting. The feedback means are communicated to the public in the public meetings and via official announcements in newspaper and radio. It is, however, recommended that the public review/commenting period is extended to account for the complexity of the submissions and allow stakeholders to provide informed feedback.
- Consideration of the mitigation measures in the IFC EHS guidelines for offshore oil and gas development[7], IOGP-IPIECA (2020)[8], Table B-2 and Appendix A.1 regarding biodiversity.
- Elaboration of an Environmental Management Plan (EMP) with the respective sub-plans to manage all relevant environmental and social impacts and associated mitigation measures including those implemented by contractors. This may also include a PGCB if applicable.
- Publishing the submissions on the company and EIA consultant websites to facilitate stakeholder review and feedback.

4.1.3 Category A projects – EIS (assessment)

In addition to the general requirements described in Section 4.1 the following issues should be considered in relation to international best practice:

- Preparation of an EIS report in accordance with the agreed Terms of Reference.
- A comprehensive and well written non-technical summary including a summary of the project description (proposed activities, project components and processes), the prevailing baseline conditions in the area of influence, the impact assessment results, proposed mitigation measures and residual impacts as well as overall conclusions and project commitments.
- Description of the project including all activities and project components. This should also include logistics and consideration of any land-based facilities such as harbours, jetties, storage sites and warehouses, as applicable.
- Refinement of the area of influence, based on the earlier descriptions provided in the earlier project registration and EPDA (scoping phase) considering the main likely impacts of the project on the key receptors (VECs). The area of influence will be different for routine activities and accidental events.
- Undertaking dedicated primary data collection (baseline surveys) as applicable. As only limited secondary baseline data is available in Mozambique, field surveys/primary data collection may be needed to adequately identify and assess impacts, if important receptors are likely to be present.
- A full description of the biophysical and socioeconomic environment using primary data collection results, as applicable, as well as relevant secondary data to cover the area of influence.

[7] IFC (2015)
[8] IOGP-IPIECA (2020)

- A transparent methodology to assess impacts and define the significance of impacts
- Assessment of positive and negative, direct, indirect impacts as well as residual impacts once mitigation measures and potential compensation are implemented.
- Assessment of potential cumulative impacts and inclusion of measures to avoid or reduce any potential significant cumulative impacts, e.g. on coral reefs, marine mammals and turtles, where near shore seismic surveys are being conducted in neighbouring blocks.
- Assessment of transboundary impacts.
- A commitment register listing all mitigation measures stated throughout the EIS using a unique identifier (ID no.) for each measure. Each measure should be covered in the EMP and/or respective sub-plan to ensure implementation.
- Application of best practice mitigation measures to minimise the risk of disturbance or injury to coral reefs, marine mammals and sea turtles, such as those provided in the Joint Nature Conservation Committee guidelines (JNCC, 2017) and "Good Practice Guidelines to mitigate the impacts of oil and gas development on coral reefs, sea turtles and marine mammals in the Northern Mozambique Channel"
- Identification of biodiversity related residual impacts and the need for a PGCB, if applicable
- Consideration and application of the mitigation measures in the IFC EHS Guidelines for offshore and onshore oil and gas development (IFC, 2007 & 2015).
- Identification of any uncertainties and technical difficulties experienced during preparation of the EIS and how these have affected the EIA process and findings.

  Arrangements for dealing with subsequent changes to the project (management of change) that may affect impact predictions and require discussion with the MTA.
- A detailed stakeholder engagement plan (SEP) updated from the previous phases to include disclosure of the EIS and engagement during project implementation as well as grievance management. This should also include consideration of vulnerable and marginalised groups, as appropriate.
- An updated record/log of consultations held during the EIS preparations and any outcomes from consultation should be provided as an annex to the EIS.
- Communicating the means for disclosure of the EIS submission and how feedback can be provided ensuring that all relevant stakeholders are consulted and enabled to provide feedback.

  It is acknowledged that current regulations provide for only 15 days of public commenting after each public meeting. The feedback means are communicated to the public in the public meetings and via official announcements in newspaper and radio. It is, however, recommented that the public review/commenting period is extended to account for the complexity of the submissions and allow stakeholders to provide informed feedback.
- Where coastal fisheries or livelihoods may be adversely impacted, consideration of such impacts to livelihoods and the associated mitigation measures to restore or improve livelihoods (that are part of a resettlement and compensation plan) should be coordinated with the EIA process.
- A dedicated Environmental Management Plan (EMP) with the respective sub-plans to manage all relevant environmental and social impacts and associated mitigation measures including those implemented by contractors. A dedicated monitoring plan should also be provided to assess the efficiency of the proposed measures. Emergency response and contingency planning should be based on dedicated risk assessments and oil spill modelling. Specialist studies such as baseline survey reports, modelling studies and risk assessments to be annexed to the EIS, as applicable.

4.2 Exploration (and appraisal) drilling

A description of activity is provided in Section 2. Likely key aspects, potential significant impacts and possible mitigation measures (examples of good international industry practice) are described in Appendix B-2 while Appendix C provides typical examples of alternatives usually considered.

4.2.1 Project registration (screening)

In addition to the legal requirements shown in Factbox 3-1 the following should be considered:

- Brief overview of the proposed project, including as appropriate:
    - Location and scale, including a map of sufficient scale to locate the project area in Mozambique and, at a regional/local level, showing the relevant petroleum operations license block(s) and areas of activities in relation to relevant administrative boundaries.
    - Main facilities, infrastructure (including access), and activities planned, from rig installation to site abandonment, including any support from land (e.g. supply bases) and/or sea (e.g. transportation) as appropriate. Include graphical documentation such as layout or schematic diagrams as appropriate.
    - Timing and duration of the proposed project activities
    - Brief identification and assessment of whether the project is logically or economically linked with other projects (reference is made to associated facilities[9]) or parts of the same development so that the MTA can decide if these should be included in an EIS.
    - The proponent must also include proof of the approval of the terms and conditions of the exploration and production concession contract
    - Identification of the already known key alternatives, justifying their choice where key decisions have already been made. This may include the type of drilling unit, timing to avoid ecologically sensitive periods, well location, mud systems, well testing choices, etc.
- Preliminary identification of the area of influence[10] for the main likely impacts of the project on key receptors and a list of major potential impacts of the activities (direct and indirect) including the potential for significant impacts as a result of unplanned events.
- Identification of whether areas of special value such as of biodiversity or cultural heritage value, or whether any of the criteria for identifying projects with significant impacts apply. This should include the identification of whether the project will impact any of the environmentally sensitive areas in line with the EIA regulations (specially Annex V) and the Directive on Biodiversity Offsets (specially Key Biodiversity Areas - KBAs), while also considering the list/definitions of such areas defined in other regulations, e.g. RAMSAR Convention on Wetlands (Ramsar 2018) and Convention on Biological Diversity (ratified by Mozambique in 1994) and/or additional sensitive habitats or ecosystems such as coral reefs, mangroves or sea gras meadows and/or sensitive fish spawning areas.

[9] Associated facilities are defined as facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without the project would not be viable (IFC, 2012).
[10] Reference is made to IFC's definition of the Area of Influence in Section 5 - Definitions.

- Identification if there is a potential for transboundary impacts. If applicable, arrangements for consultation on transboundary issues should be discussed and agreed with MTA and INP as early as possible.
- For subsequent exploration (appraisal) wells drilled in an area which has already been subject to a previous environmental assessment, MTA will make a decision whether a new EIS is required or whether an addendum to the previous study, a simplified environmental report (EAS) or revised EMP may be sufficient. MTA will base its decision on the level and quality of information provided previously and whether additional drilling activities were already discussed. Of importance is also whether any primary data collection has covered the area of the foreseen well locations, whether primary data is still considered to be valid and whether the area has been assessed previously. The proponent must clearly justify his view, including providing relevant information on the project such as baseline environmental data and monitoring data on the actual impacts of previous (similar) activities.
- In addition to the submission to the MTA the project proponent should publish the project registration application on its website.

4.2.2 Category A projects – EPDA (scoping)

In addition to the general requirements described in Section 4.1 the following issues should be considered in relation to international best practice:

Environmental Pre-feasibility Study (EPDA)

- Description of the project including all activities relating to planning, installation, operation and site abandonment, including land use from land-based support such as harbour facilities, jetties, storage facilities for e.g. drilling pipes, equipment and chemicals, waste facilities, support vessels and helicopters.
- Preliminary identification and assessment of alternatives and the rationale for the selection of the preferred options. This is likely to include, among others, scheduling to avoid ecologically sensitive seasons, options for drilling units and positioning, drilling muds, logistics and supply bases.
- A gap analysis of available baseline data and the information required to support the preparation of the EIS
- Consider associated developments when conducting the gap analysis and identify potential surveys and assessments needed for those facilities.
- Consideration of potential constraints on data collection and analysis including access to laboratories accredited to international standards and how these may be addressed in the EIS.
- Consideration whether ecological surveys need to be conducted over different seasons and the implications for the length of time needed to complete the EIS.
- A refinement of the area of influence (both direct and indirect), previously defined in the project proposal, for the main likely impacts on the key receptors and revision of the area as needed.
- Identification of potential positive and negative impacts from planned and unplanned events of the project, including those related to climate.
- A transparent assessment scoping-in and scoping-out of potential receptors (VECs) identifying which VECs will be studied further in the EIS and which ones will not. The results will be taken further in the ToR (see below)

- Preparation of a stakeholder engagement plan detailing the engagement methods for the various stakeholder groups, timing of engagement and means for recording and communicating engagement outcomes.
- Conduct stakeholder consultations according to the stakeholder engagement plan during the EPDA phase and establish a database to record all consultations undertaken and the outcomes of that consultation.
- Communicate the means for disclosure of the EPDA and TOR as well as how feedback can be provided during stakeholder consultation. Consider whether local disclosure alone will ensure that all relevant stakeholders are consulted. For example, consultation with provincial and national groups and organisations may be needed.
- Publish the submissions on the company and EIA consultant websites to facilitate stakeholder review and feedback.
- Identification and description of all aspects to be investigated in detail in the EIS and which are further detailed in the Terms of Reference (ToR, see below).

Terms of Reference (ToR)

- A clear description of specific/specialized data collection to be carried out as basis for the EIS with focus on primary data collection and associated survey/sampling programs ensuring that the baseline data collection programs can be followed up by later monitoring surveys (after project implementation) enabling a comparison of survey results and identification of trends.
- Consideration of the need to accelerate certain surveys due to the long timeframes needed to gather primary baseline data (for example, metocean data for offshore/coastal activities).
- Description of the proposed impact assessment process and the methodology for the identification and assessment of impacts to be used in the subsequent EIS, including the methodology and criteria for assessment of significant residual impacts.
- Description of project alternatives and the methods used when choosing and comparing these.
- Consideration of whether there may be any significant cumulative impacts and set out how these will be assessed during the EIA.
- Consideration of whether there are likely to be any significant transboundary impacts, e.g. from accidental events.
- Description of the purpose, methodology and approach to stakeholder consultations and identification of the project affected people.
- Elaboration of the stakeholder engagement plan (SEP) building on the plan for the scoping phase. The SEP should describe the purpose, methodology, approach to stakeholder consultations, engagement means means, timing/frequency of engagement and means for recording and communicating engagement outcomes. Stakeholder identification and analysis should be undertaken considering all relevant stakeholder groups such as project affected people and communities as well as vulnerable or marginalised groups. the plan should include establishing a database to record all consultations undertaken and the outcomes of that consultation to inform the EIS.
- Where coastal fisheries or livelihoods may be adversely impacted, consideration of such impacts to livelihoods and the associated mitigation measures to restore or improve livelihoods (that are part of a resettlement and compensation plan) should be coordinated with the EIA process.

- Communicating the means for disclosure of the submissions and how feedback on the EIS can be provided ensuring that all relevant stakeholders are consulted. For example, consultation with provincial as well as national groups and organisations may be needed.
- It is acknowledged that current regulations provide for only 15 days of public commenting after each public meeting. The feedback means are communicated to the public in the public meetings and via official announcements in newspaper and radio. It is, however, recommented that the public review/commenting period is extended to account for the complexity of the submissions and allow stakeholders to provide informed feedback.
- Consideration of the mitigation measures in the IFC EHS guidelines for offshore oil and gas development[11], IOGP-IPIECA (2020)[12], Table B-2 and Appendix A.1 regarding biodiversity.
- Elaboration of an Environmental Management Plan (EMP) with the respective sub-plans to manage all relevant environmental and social impacts and associated mitigation measures including those implemented by contractors. This may also include a PGCB if applicable.
- A formal and culturally appropriate grievance mechanism which is accessible to all stakeholders and enables stakeholders to voice grievances and get them addressed in a timely and effective manner.
- Publishing the submissions on the company and EIA consultant websites to facilitate stakeholder review and feedback.

4.2.3 Category A projects – EIS (assessment)

In addition to the general requirements described in Section 4.1 the following issues should be considered in relation to international best practice:

- Preparation of an EIS report in accordance with the agreed Terms of Reference.
- A comprehensive and well written non-technical summary including a summary of the project description (proposed activities, project components and processes), the prevailing baseline conditions in the area of influence, the impact assessment results, proposed mitigation measures and residual impacts and overall conclusions and project commitments.
- Description of the project including all activities and project components necessary for the planning, installation, implementation/operation and abandonment of the drilling site and operations. This should also include consideration of the necessary logistics and transportation as well as any land-based facilities such as harbours, jetties, warehouses and storage sites for e.g. drilling pipes, equipment and chemicals, waste facilities, support vessels and helicopters.
- A description of the various alternatives considered including the selection process up to the selection of the preferred alternatives. This is likely to include, among others, scheduling to avoid ecologically sensitive seasons, options for drilling mud, drilling units and positioning, logistics and supply bases.
- Identification of the standards and criteria adopted for the drilling operations (so-called project standards) and demonstration of the ability of the project to comply with these standards.

[11] IFC (2015)
[12] IOGP-IPIECA (2020)

- Refinement of the area of influence, based on the earlier descriptions provided in the earlier project registration and EPDA (scoping phase) considering the main likely impacts of the project on the key receptors (VECs).
- Undertaking dedicated primary data collection (baseline surveys) needed for the impact assessment. Conduct a higher standard of survey, assessment and mitigation if the project has potential to impact, directly or indirectly, protected areas; other recognised biodiversity-sensitive areas or conservation priority areas, such as important bird areas (IBAs), KBAs, important shark and ray areas (ISRAs) and other biodiversity hot spots; critical ecosystems/habitats, protected or endangered species.
- Primary data collection (baseline surveys) should, as a minimum, consider:
    - Ecologically important or sensitive habitats/ecosystems.
    - Key areas/habitats used for resident, migratory, breeding and feeding species
    - Any threatened, endangered and/or endemic species and/or with restrictive distribution potentially present.
    - Information needed for risk assessments such as met ocean data as input to oil spill modelling.
    - Information needed for emergency planning such as coastal sensitivity mapping and met ocean/wind data.
    - Coastal and/or artisanal fisheries, where there is potential for significant impacts.
    - Socio-economic data, including settlements, land-use and livelihoods in the area of influence, as applicable.
    - Important sources of potable water that may be affected.
- A full description of the biophysical and socioeconomic environment using primary data collection results as well as relevant secondary data to cover the area of influence.
- A transparent methodology to assess impacts and define the significance of impacts
- Assessment of positive and negative, direct, indirect impacts as well as residual impacts once mitigation measures and potential compensation are implemented. This also includes impacts on health, gender and vulnerable members of affected communities, and associated mitigation.
- Assessment of potential cumulative and transboundary impacts.
- A commitment register listing all mitigation measures stated throughout the EIS using a unique identifyer (ID no.) for each measure. Each measure should be covered in the EMP and/or respective sub-plan.
- Consideration of the mitigation measures in the IFC EHS guidelines for offshore oil and gas development[13], IOGP-IPIECA (2020)[14], Table B-2 and Appendix A.1 regarding biodiversity.
- Identification of any uncertainties and technical difficulties experienced during preparation of the EIS and how these have affected the EIA process and findings.
- Arrangements for dealing with subsequent changes to the project (management of change) that may affect impact predictions and require discussion with the MTA.
- A detailed stakeholder engagement plan (SEP) updated from the previous phases to include disclosure of the EIS, engagement during project implementation and later abandonment as well as grievance management. This should also include ethnic minorities and vulnerable people such as women, as appropriate.

[13] IFC (2015)
[14] IOGP-IPIECA (2020)

- An updated record/log of consultations held during the EIS preparations and any outcomes from consultation should be provided as an annex to the EIS. Stakeholder engagement should also include any project affected persons or communities affected by the development of onshore support/ancillary facilities, as relevant.
- Communicating the means for disclosure of the EIS submission and how feedback can be provided ensuring that all relevant stakeholders are consulted and enabled to provide feedback.

  It is acknowledged that current regulations provide for only 15 days of public commenting after each public meeting. The feedback means are communicated to the public in the public meetings and via official announcements in newspaper and radio. It is, however, recommented that the public review/commenting period is extended to account for the complexity of the submissions and allow stakeholders to provide informed feedback.
- Where coastal fisheries or livelihoods may be adversely impacted, consideration of such impacts to livelihoods and the associated mitigation measures to restore or improve livelihoods (that are part of a resettlement and compensation plan) should be coordinated with the EIA process.
- Seek to avoid physical resettlement by careful siting of infrastructure and thoroughly justify any physical resettlement, if applicable. If resettlement cannot be avoided the first stage of a resettlement plan, the so-called physical and socio-economic survey report (RLFSE) must be elaborated and submitted with the EIS.
- A formal and culturally appropriate grievance mechanism which is accessible to all stakeholders and enables stakeholders to voice grievances and get them addressed in a timely and effective manner.
- A dedicated Environmental Management Plan (EMP) with the respective sub-plans to manage all relevant environmental and social impacts and associated mitigation measures including those implemented by contractors.

  Emergency response and contingency planning should be based on dedicated risk assessments and oil spill modelling.

  If there are significant residual impacts on biodiversity, a dedicated Biodiversity Offset Plan (PGCB) will be required.

  A dedicated monitoring plan should also be provided to assess the efficiency of the proposed measures.
- Specialist studies such as baseline survey reports, modelling studies and risk assessments to be annexed to the EIS.

4.3 Field development and production

A description of activities for field development and production is provided in Section 2. Likely key aspects, potential significant impacts and possible mitigation measures (examples of good international industry practice) are described in Appendix B-3 while Appendix C provides examples of typical alternatives usually considered during this stage.

4.3.1 Project registration (screening)

In addition to the legal requirements shown in Factbox 3-1 the following should be considered:

- Brief overview of the proposed project, including as appropriate:

- Location and scale, including a map of sufficient scale to locate the project area in Mozambique and, at a regional/local level, showing the relevant petroleum operation license block(s) and areas of activities in relation to relevant administrative boundaries.
- Main project components, facilities, infrastructure (including access), and activities planned, including the likely support from land (e.g. supply bases, harbour facilities, logistics basis, transportation). Include graphical documentation such as layout or schematic diagrams as appropriate.
- Timing and duration of the proposed project activities
- Brief identification and assessment of whether the project is logically or economically linked with other projects (reference is made to associated facilities[15]) or parts of the same development so that the MTA can decide if these should be included in an EIS.
- The proponent must also include proof of the approval of the terms and conditions of the exploration and production concession contract
- Identification of the already known key alternatives, justifying their choice where key decisions have already been made. This may include site selection for project components, scheduling and preliminary technology choices

- Preliminary identification of the area of influence[16] for the main likely impacts of the project on key receptors and a list of major potential impacts of the activities (direct and indirect) including the potential for significant impacts as a result of unplanned events.
- Identification of whether areas of special value such as of biodiversity or cultural heritage value, or whether any of the criteria for identifying projects with significant impacts apply. This should include the identification of whether the project will impact any of the environmentally sensitive areas in line with the EIA regulations (specially Annex V) and the Directive on Biodiversity Offsets (specifically Key Biodiversity Areas - KBAs), while also considering the list/definitions of such areas defined in other regulations, e.g. RAMSAR Convention on Wetlands (Ramsar 2018) and Convention on Biological Diversity (ratified by Mozambique in 1994) and/or additional sensitive habitats or ecosystems such as coral reefs, mangroves or sea gras meadows and/or sensitive fish spawning areas.
- Identification if there is a potential for transboundary impacts. If applicable, arrangements for consultation on transboundary issues should be discussed and agreed with MTA and INP as early as possible.
- Onshore facilities such as tank farms, terminals or processing plants are likely to require a separate EIA process (see onshore EIA Guideline). In case camps for worker accommodation are needed, the requirements of the IFC/EBRD worker accommodation guidelines (2009) should be considered.
- In addition to the submission to the MTA the project proponent should publish the project registration application on its website.
- For subsequent production (appraisal) wells drilled in an area which has already been subject to a previous EIS or EAS, seek guidance from MTA regarding what level of environmental assessment will be required. MTA will make a decision whether a new EIS is required or whether an addendum to the previous EIS, a simplified environmental report (EAS) or revised EMP may be sufficient. MTA will base its decision on the level and quality

[15] Associated facilities are defined as facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without the project would not be viable (IFC, 2012).
[16] Reference is made to IFC's definition of the Area of Influence in Section 5 - Definitions.

of information provided previously and whether additional drilling activities were already discussed. Of importance is also whether any primary data collection has covered the area of the foreseen well locations, whether primary data is still considered to be valid and whether the area has been assessed previously. The proponent must clearly justify his view, including providing relevant information on the project such as baseline environmental data and monitoring data on the actual impacts of previous (similar) activities.

4.3.2 Category A+ projects – EPDA (scoping)

In addition to the general requirements described in Section 4.1 the following issues should be considered in relation to international best practice:

Environmental Pre-feasibility Study (EPDA)

- Description of the project including all activities relating to the planning, construction, installation, commissioning, operation, decommissioning and abandonment, including land use from land-based support such as harbour facilities, jetties, material storage facilities, waste facilities, support vessels and helicopters.
- For coastal or land-based facilities, consideration of alternatives to avoid or, if not possible, minimise the need for physical resettlement.
- Preliminary description of the various alternatives considered and the selection process until selection of the preferred alternatives. This is likely to include, among others, timing, siting, technology choices and BAT assessments.
- A gap analysis of available baseline data for the area of influence and the information required to inform the preparation of the EIS. The gap analysis should also consider associated developments to identify necessary surveys and assessments also for those facilities.
- Consideration of potential constraints on data collection and analysis including access to laboratories accredited to international standards and timing constraints and how these may be addressed in the EIS.
- Consideration whether ecological surveys need to be conducted over different seasons and the implications for the length of time needed to complete the EIS.
- A refinement of the area of influence (both direct and indirect), previously defined in the project proposal, for the main likely impacts on the key receptors (VECs) and revision of the area as appropriate.
- Identification of potential positive and negative impacts from planned and unplanned events of the project, including those related to climate change.
- A transparent assessment scoping-in and scoping-out of potential receptors (VECs) identifying which VECs will be studied further in the EIS and which ones will not. The results will be described in the ToR (see below).
- Preparation of a stakeholder engagement plan tailored to the scoping phase detailing the engagement methods for the various stakeholder groups, timing of engagement and means for recording and communicating engagement outcomes.
- Conduct stakeholder consultations according the stakeholder engagement plan during the EPDA phase and establish a database to record all consultations undertaken and the outcomes of that consultation.
- Communicate the means for disclosure of the EPDA and TOR as well as how feedback can be provided during stakeholder consultation. Consider whether local disclosure alone

will ensure that all relevant stakeholders are consulted. For example, consultation with provincial and national groups and organisations may be needed.

- Publish the submissions on the company website to facilitate stakeholder review and feedback.
- Identification and description of all aspects to be investigated in detail in the EIS and which are further detailed in the Terms of Reference (ToR, see below).

The EPDA and ToR report will be reviewed by Independent Specialists, as per Ministerial Diploma nº18/2022, 21st of November.

Terms of Reference (ToR)

- A clear description of specific/specialized data collection to be carried out as basis for the EIS with focus on primary data collection and associated survey/sampling programs ensuring that the baseline data collection programs can be followed up by later monitoring surveys (after project implementation) enabling a comparison of survey results and identification of trends.
- Consideration of the need to accelerate certain surveys due to the long timeframes needed to gather primary baseline data (for example, metocean data for offshore/coastal activities). Consider the need to expedite some surveys due to the long timeframes needed to gather baseline data (for example, air quality data for coastal facilities or metocean data for offshore/coastal activities).
- Description of the proposed impact assessment process and the methodology for the identification and assessment of impacts to be used in the subsequent EIS, including the methodology and criteria for assessment of significant residual impacts.
- Description of considered project alternatives and the methods used for choosing and comparing these until the selection of the preferred alternatives. This is likely to include, among others, timing, siting, technology choices and BAT assessments. The project design needs to be sufficiently elaborated to develop a comprehensive project description in order to support the impact assessment.
- Consideration of whether there may be any significant cumulative impacts and set out how these will be assessed during the EIA.
- Consideration of whether there are likely to be any significant transboundary impacts, e.g. from accidental events.
- Elaboration of the stakeholder engagement plan (SEP) building on the plan for the scoping phase. The SEP should describe the purpose, methodology, approach to stakeholder consultations, engagement means means, timing/frequency of engagement and means for recording and communicating engagement outcomes. Stakeholder identification and analysis should be undertaken considering all relevant stakeholder groups such as project affected people and communities as well as vulnerable or marginalised groups. the plan should include establishing a database to record all consultations undertaken and the outcomes of that consultation to inform the EIS.
- Where coastal fisheries or livelihoods may be adversely impacted, consideration of such impacts to livelihoods and the associated mitigation measures to restore or improve livelihoods (that are part of a resettlement and compensation plan) should be coordinated with the EIA process.
- Establishment of a formal and culturally appropriate grievance mechanism which is accessible to all stakeholders and enables stakeholders to voice grievances and get them addressed in a timely and effective manner.

- Communicating the means for disclosure of the submissions and how feedback on the EPDA can be provided ensuring that all relevant stakeholders are consulted. For example, consultation with provincial as well as national groups and organisations may be needed.
- Consideration of the mitigation measures in the IFC EHS guidelines for offshore oil and gas development[17], IOGP-IPIECA (2020)[18], Table B-2 and Appendix A.1 regarding biodiversity.
- Elaboration of an Environmental Management Plan (EMP) with the respective sub-plans to manage all relevant environmental and social impacts and associated mitigation measures including those implemented by contractors. This may also include a PGCB if applicable.
- Publishing the submissions on the company and EIA consultant websites to facilitate stakeholder review and feedback.

4.3.3 Category A+ projects – EIS (assessment)

This phase of the EIA process includes the preparation of the EIS and the associated EMP. It covers a detailed assessment of potential positive and negative impacts of the offshore field development and any supporting infrastructure, analysis of alternatives, identification of mitigating measures and the development of the environmental management plan.

In addition to the general requirements described in Section 4.1 the following issues should be considered in relation to international best practice:

- Preparation of an EIS report in accordance with the agreed Terms of Reference.
- A comprehensive and well written non-technical summary including a summary of the project description (proposed activities, project components and processes), the prevailing baseline conditions in the area of influence, the impact assessment results, proposed mitigation measures and residual impacts and overall conclusions and project commitments.
- Description of the project including all activities and project components necessary for the planning, construction, installation, commissioning, operation and abandonment of the overall field development and production operations. This should also include consideration of the necessary logistics, transportation and offloading facilities as well as any land-based facilities such as harbours, jetties, warehouses, storage sites, processing facilities or tank farms as applicable.
- A description of the various alternatives considered including the selection process up to the selection of the preferred alternatives. This is likely to include, among others, timing, siting, technology choices and related BAT assessments.
- Identification of the standards and criteria adopted for the project (so-called project standards) and demonstration of the ability of the project to comply with these standards.
- Description of the final area of influence, based on the earlier descriptions provided in the earlier project registration and EPDA (scoping phase) considering the main likely impacts of the project on the key receptors (VECs).
- Undertaking dedicated primary data collection (baseline surveys) needed for the impact assessment. Conduct a higher standard of survey, assessment and mitigation if the project has potential to impact, directly or indirectly, protected areas; other recognised biodiversity-sensitive areas or conservation priority areas, such as important bird areas (IBAs), KBAs,

[17] IFC (2015)
[18] IOGP-IPIECA (2020)

important marine mammal areas (IMMAs), important shark and ray areas (ISRAs) and other biodiversity hot spots; critical ecosystems/habitats, protected or endangered species.

- Primary data collection (baseline surveys) should, as a minimum, consider:
  - Ecologically important or sensitive ecosystems/habitats.
  - Key areas/habitats used for resident, migratory, breeding and feeding species
  - Any threatened, endangered and/or endemic species and/or with restrictive movement potentially present.
  - Information needed for risk assessments such as met ocean data as input to oil spill modelling.
  - Information needed for emergency planning such as coastal sensitivity mapping and met ocean/wind data.
  - Coastal and/or artisanal fisheries and livelihoods, where there is potential for significant impacts.
  - Socio-economic data, including settlements, land-use and livelihoods in the area of influence.
  - Important sources of potable water that may be affected.
- A full description of the biophysical and socioeconomic environment using primary data collection results as well as relevant secondary data to cover the area of influence (note that secondary data on species and ecosystems can e.g. be obtained through IBAT and the SIBMOZ online platform)
- A transparent methodology to assess impacts and define the significance of impacts
- Assessment of positive and negative, direct, indirect impacts as well as residual impacts once mitigation measures and potential compensation are implemented. This also includes impacts on health, gender and vulnerable members of affected communities, and associated mitigation.
- Assessment of potential cumulative and transboundary impacts.
- A commitment register listing all mitigation measures stated throughout the EIS using a unique identifier (ID no.) for each measure. Each measure should be covered in the EMP and/or respective sub-plan.
- Consideration and application of the mitigation measures in the IFC EHS Guidelines for offshore and onshore oil and gas development (IFC, 2007 & 2015), as applicable.
- Identification of any uncertainties and technical difficulties experienced during preparation of the EIS and how these have affected the EIA process and findings.
- Arrangements for dealing with subsequent changes to the project (i.e. management of change) that may affect impact predictions and require discussion with the MTA.
- Implementation of the detailed stakeholder engagement plan including stakeholder consultation during EIS preparations, disclosure of the EIS, engagement during project implementation and later abandonment as well as grievance management. This should also include ethnic minorities and vulnerable or marginalised groups, as appropriate.
- An updated record/log of consultations held throughout the entire EIA process and any outcomes from consultation should be provided as an annex to the EIS. Stakeholder engagement should also include any project affected persons or communities affected by the development of onshore support/ancillary facilities, as relevant.
- Where coastal fisheries or livelihoods may be adversely impacted, consideration of such impacts to livelihoods and the associated mitigation measures to restore or improve

livelihoods (that are part of a resettlement and compensation plan) should be coordinated with the EIA process.

- Communicating the means for disclosure of the EIS submission and how feedback can be provided ensuring that all relevant stakeholders are consulted and enabled to provide feedback.
- Seek to avoid physical resettlement by careful siting of infrastructure and thoroughly justify any physical resettlement, if applicable. If resettlement cannot be avoided the first stage of a resettlement plan, the so-called physical and socio-economic survey report (RLFSE) must be elaborated and submitted with the EIS.
- Seek to avoid physical resettlement by careful siting of infrastructure and thoroughly justify any physical resettlement.
- A formal and culturally appropriate grievance mechanism which is accessible to all stakeholders and enables stakeholders to voice grievances and get them addressed in a timely and effective manner.
- A dedicated Environmental Management Plan (EMP) with the respective sub-plans to manage all relevant environmental and social impacts and associated mitigation measures including those implemented by contractors.

  Emergency response and contingency planning should be based on dedicated risk assessments and oil spill modelling.

  If there are significant residual impacts on biodiversity, a dedicated Biodiversity Offset Plan (PGCB) will be required.

  A dedicated monitoring plan should also be provided to assess the efficiency of the proposed measures.
- Specialist studies such as baseline survey reports, modelling studies and risk assessments should be annexed to the EIS.

Further, Decree 56/2010 requires a preliminary decommissioning and rehabilitation plan outlining what will be included in the final plan and a commitment that the decommissioning plan will be developed further, including detailed plans for decommissioning of offshore wells and platforms well in advance of the end of production (at least five years prior) and sent to MTA for approval.

Decommissioning of wells and facilities should be carried out in accordance with the IFC EHS Guidelines for offshore/onshore oil and gas development (IFC 2007 and 2015). Consideration should be given to the removal of all surface facilities and reinstatement requirements. To date, surface facilities are normally removed, and the site reinstated. Offshore pipelines are usually left in place after being cleaned from hydrocarbons.

5 ACRONYMS, ABBREVIATIONS AND DEFINITIONS

Acronyms and abbreviations

Acronym	Definition
AIA (EIA)	Avaliação de Impacto Ambiental (Environmental Impact Assessment)
AIAS (ESIA)	Avaliação de Impacto Ambiental e Social (Environmental and Social Impact Assessment)
ANAC	Administração Nacional das Áreas de Conservação (National Administration of Conservation Areas)
APP (PSA)	Acordo de Partilha de Produção (production sharing agreement)
AQUA	Agência Nacional para o Controlo da Qualidade Ambiental (national Agency for Environmental Quality)
ASS (EHS)	Ambiente, Saúde e Segurança (Environment, Health, and Safety)
BAT	Best Available Technique (or Technology)
CCPP/EPCC	Contracto de Concessão de Pesquisa e Produção (Exploration and Production Concession Contract)
CCCOI	Contracto de Concessão para Construção e Operação de Infraestruturas (Concession contract for infrastructure construction and operation),
CCCOSOG	Contracto de Concessão para Construção e Operação de Sistemas de Oleoduto e Gasoduto (Concession contract for construction and operation of oil or gas pipelines systems)
CCR	Contracto de Concessão de Reconhecimento (Concession contract for reconnaissance)
DINAB	Direcção Nacional do Ambiente (National Environment Directorate)
DNDT	Direção Nacional da Terra e Desenvolvimento Territorial (National Directorate of Land and Territorial Planning)
DMC	Direcção Nacional de mudanças Climáticas (National Directorate of Climate Change)
DPDTA	Direcção Provincial de Desenvolvimento territorial e Ambiente (Provincial Directorate of Territorial Development and Environment).
DUAT	Direito de uso e aproveitamento da terra (Land use rights)
EAS (SES)	Estudo Ambiental Simplificado (Simplified Environmental Study)
EBI	Energy and Biodiversity Initiative
EBRD	European Bank for Reconstruction and Development
EIA (EIS)	Estudo de Impacto Ambiental (Environmental Impact Study)
EMP (PGA)	Plano de Gestão Ambiental (Environmental Management Plan)
ENH	Empresa Nacional de Hidrocarbonetos (National Hydrocarbon Company)
EPDA	Estudo de Pré-Viabilidade Ambiental e Definição de Âmbito (Environmental Pre Feasibility and Scoping Study)
FPIC	free, prior and informed consent
FPSO	floating production storage and offloading
FSO	floating storage and offloading
GdM (GOM)	Governo de Moçambique (Government of Mozambique)
GHG	greenhouse gas
GIIP	Good international industry practice
GNL (LNG)	Gás Natural Liquefeito (Liquified Natural Gas)

Acronym	Definition
GPL (LPG)	Gás de Petróleo Liquefeito (liquefied petroleum gas)
IBA	Áreas Importantes para Aves (important bird area)
IDEPA	Instituto Nacional de desenvolvimento da Pesca e Aquacutura (National Fisheries and Aquaculture Development Institute)
IMMA	Áreas Importantes para Mamíferos marinhos (Important Marine Mammal Area)
ISRA	Áreas Importantes para tubarões e raias (Important Shark and Ray Area)
IFC	Corporação Financeira Internacional (International Finance Corporation)
ILO	Organização Internacional do Trabalho (International Labour Organization)
INAMAR	Instituto Nacional da Marinha (National Marine Institute)
INGD	Instituto Nacional de Gestão de Desastres (National Institute of Disaster Management)
INoM	Instituto Oceanográfico de Moçambique (National Oceanographic Institute)
INP	Instituto Nacional de Petróleos (National Petroleum Institute)
IOGP	Organização Internacional dos Produtores de Petróleo e Gás (International Association of Oil and Gas Producers)
IP	Instrução do Processo (Project registration)
IPIECA	Associação Internacional para Assuntos Ambientais e Sociais (Global Oil and Gas Industry Association for Environmental and Social Issues)
IPLOCA	International Pipeline and Offshore Contractors Association
ISO	International Standards Organisation
ITA	Inspeção da Terra e Ambiente (land and Environment Inspection)
ITRANSMAR	Instituto Nacional dos Transportes Maritimos (Maritime Transport Institute)
IUCN	International Union for the Conservation of Nature
JNCC	Joint Nature Conservation Committee
KBA	Áreas Chave para a Biodiversidade (Key Biodiversity Areas)
KBA	key biodiversity area
KPI	key performance indicators
LA (EL)	Environmental License
m	Metro (Metre)
MdE (MoU)	Memorando de Entendimento (Memorandum of Understanding)
MEF	Ministério da Economia e Finanças (Ministry of Economy and Finance)
MIMAIP	Ministério do Mar, Águas Interiores e Pescas (Ministry of Sea, Inland Waters and Fisheries)
MIREME	Ministério de Recursos Minerais e Energia (Ministry of Mineral Resources and Energy)
MISAU	Ministério da Saúde (Ministry of Health)
MOPHRH	Ministério das Obras Públicas, Habitação e Recursos Hídricos (Ministry of Public Works, Housing and Water Resources)
MTA	Ministério da Terra e Ambiente (Ministry of Land and Environment)
NADF	non-aqueous drilling fluids
NEA	Norwegian Environment Agency
ONG (NGO)	Organização Não Governamental (non-governmental organisation)
OPRC	International Convention on Pollution Preparedness, Response and Cooperation
PAR (RAP)	Plano de Acção do Reassentamento (resettlement action plan)

Acronym	Definition
PCDP (OSCP)	Plano de Contingência para Derrames de Petróleo (oil spill contingency plan)
PGA (EMP)	Plano de Gestão Ambiental (Environmental Management Plan)
PGAS (ESMP)	Plano de Gestão Ambiental e Social (Environmental and Social Management Plan)
PGCB	Plano de Gestão de Contrabalanços de Biodiversidade (Biodiversity Offset Management Plan)
PGR (WMP)	Plano de Gestão de Resíduos (Waste Management Plan)
PI&As	Partes Interessadas e Afectadas (Interested and Affected Parties)
PRE (ERP)	Plano de Resposta a Emergências (Emergency Response Plan)
RLFSE	Relatório de Levantamento Físico e Socioeconómico (Physical and Socioeconomic Survey Report)
RP	Plano de Reassentamento (Resettlement Plan)
SENSAP	Serviços Nacional de Segurança Pública (National Service of Public Safety)
SGLA	Sistema de Gestão de licenciamento Ambiental (online environmental licensing management system)
SPA	Serviço Provincial do Ambiente (Provincial Services of Environment)
TdR (TOR)	Termos de Referência (terms of reference)
TUPEM	Título de Utilização Privativa do Espaço Marítimo (Title for Private Use of Maritime Space)

Definitions

Term	Definition
AIA/EIA	Environmental Impact Assessment Process in line with Decree 54/2015. There are 4 categories of environmental assessment: A+, A, B and C.
Area of Influence (AoI)	IFC Performance Standard (PS) 1, paragraph 8 (IFC 2012), defines the area of influence as encompassing the following components as appropriate: • "The area likely to be affected by (i) the project and the client's activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the project; (ii) impacts from unplanned but predictable developments caused by the project that may occur later or at a different location, or (iii) indirect project impacts on biodiversity or on ecosystem services upon which affected communities' livelihoods are dependent. • Associated facilities, which are facilities that are not funded as part of the project, and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable • Cumulative impacts that result from the incremental impact, on areas or resources used or directly affected by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted."
Best Available Technique (BAT)	A framework concept applied by the Integrated Pollution Prevention and Control (IPPC) Directive 96/61/EC of the European Union to, amongst others, the integrated control of pollution of air, water and soil.

Term	Definition
	The related Industrial Emissions Directive (IED Directive 2010/75/EU) is the main EU instrument to regulate pollutant emissions from industrial installations. According to the Industrial Emissions Directive, emission limit values and the equivalent parameters and technical measures in permits shall be based on the Best Available Techniques. The Directive includes the following definition of Best Available Techniques: "Best Available Techniques" means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole: - "Techniques" includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned; - "Available" means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator; - "Best" means most effective in achieving a high general level of protection of the environment as a whole. Sector-specific BAT reference documents (BREFs) have been developed for numerous industries.
Category A	Projects that significantly affect living beings and environmentally sensitive areas, with potential impacts of great duration, intensity, magnitude and significance on living beings or sensitive areas. This category includes the activities listed in Annex II of the EIA Regulations. Category A projects require a full EIA process, which includes the EPDA and EIS (including an EMP).
Category A+:	Projects that, due to their complexity, location and/or irreversibility and magnitude of potential impacts, deserve not only a high level of social and environmental surveillance, but also the involvement of specialists in the EIA process. Annex I of the EIA Regulation lists the activities that fall under this category. Category A+ projects require a complete process, which includes the EPDA and EIS (including an ESMP), supervised by independent expert reviewers with proven experience.
Category B	Projects with potential impacts on living beings and in sensitive areas that are of lesser duration, intensity, magnitude, and significance compared to Category A projects. This category includes the activities referred to in Annex III of the EIA Regulation. Category B projects require the preparation and submission to the environmental authority of Terms of Reference, which must be approved before the start of the Simplified Environmental Study (EAS).
Category C	Projects with negligible negative impacts, which do not lead to irreversible impacts, and which have positive impacts that are greater in number and more significant than the negative ones. This category includes the activities referred to in Annex IV of the EIA Regulations. These projects require submission of best practice environmental management procedures for approval by the MTA
Competent authority	The competent authority is the state institutions legally mandated to undertake the EIA process. In Mozambique this is the MTA with its national directorate DINAB and the relevant provincial level representatives, also termed Environmental Impact Assessment Authority in accordance with Decree 54/2015.

Term	Definition
Concession contract for construction and operation of oil or gas pipelines systems	grants the right to build and operate oil and gas pipelines where such operations are not covered by a concession contract for exploration and production (valid for a period of up to thirty years
Concession contract for exploration and production	entails an exclusive right to conduct exploration (up to eight years) and petroleum operations (up to thirty years from the approval of the relevant development plan), and non-exclusive rights to build and operate production and transportation facilities;
Concession contract for infrastructure construction and operation	grants the right to build and operate facilities for petroleum production, which are not covered by an approved exploration and production development plan.
Concession contract for reconnaissance	grants non-exclusive rights to conduct preliminary prospecting and evaluation of an area through surveys and which is granted for a non-renewable term of two years
Concession right holder	The entity or company participating in petroleum activities through a concession that permits it to work in the petroleum sector.
Cumulative Environmental Impacts	Effects derived from the sum or interaction of impacts generated by one or more developments along a certain period of time, in the same area of influence of a given activity. Cumulative impacts are those that result from the successive, incremental, and/or combined effects of an action, project, or activity when added to other existing, planned, and/or reasonably foreseeable ones. Cumulative impact assessment is inherently challenging as it relies on good information being available on other projects planned or in operation in the same or adjacent areas as the project being assessed.
Decommissioning and Rehabilitation Plan (DRP)	The plan is a requirement of Decree 56/2010 and provides a framework for the implementation of decommissioning and rehabilitation activities in the closure phase, highlighting the key aspects that need to be considered to minimize environmental, health and safety and social risks.
Environmental Impact Assessment Authority (Article 6, Decree 54/2015)	It is the central and provincial government entity (MTA) responsible for: • Managing and regulating the EIA Process • Issue and divulge guidelines on the EIA Process • Carry out the pre-evaluation of activity subjected to their appreciation. • Designate and chair the Technical EIA Commission established for each project in the scope of an EIA process. • Require the participation of specialists of the public sector and/or contract private sector consultants as necessary in the scope of the EIA process. • Carry our public audiences. • Re-categorize activities if applicable. • Notify the proponent for the payment of the licensing fees. • Notify the proponent and directly interested entities of the issuance of the environmental license. • Guarantee that the information related with the environmental licensing process is accessible to the public. • Propose updates of environmental criteria and standards • Tigger the legal mechanisms to, in coordination with other relevant entities, • Arrest or demolish works that by its nature endanger environmental quality, as well as order the suspension/cancelling of any pursuit of activities including cancelling the EIA consulting certificate

Term	Definition
Environmental Impact Assessment Authority at Central Level (DINAB)	Additionally, to the above: • Guides, reviews, and decides about the EPDA & ToR and EIS reports for A+ and A categories • Issues environmental licenses for projects approved at central level • Registers, maintains and divulges the individual and collective consultants authorised to carry out EIAs and be Independent Specialist Reviewers
Environmental Impact Assessment Authority at Provincial Level	Additionally, to the above: • Guides, reviews, and decides about the ToR and EAS reports for B category, and environmental best practices reports for C Category • Issues environmental licenses for B and C Category projects • Approves the EMP for all B Category Mining Projects (in terms of the environmental regulations for mining operations)
Environmental Impact Study (EIS/EIA)	Third and last stage of the EIA process for A+ and A Categories. The stage of the EIA process that analyses technically and scientifically the environmental consequences of the implementation of a given development, for Category A+ and A Projects.
Environmental Pre-feasibility and Scoping Stage (EPDA)	Second stage of the EIA process for A+ and A Categories. Component of the EIA process mandatory for Category A+ and A projects. The EPDA aims to identify and assess the main impacts, analyse the available alternatives for mitigation, and define the scope of the EIS through the selection of the environmental components that may be affected by the proposed activity and on which the EIS must focus. This phase is comparable to scoping in line with international best practice.
Fatal flaws	Irreversible environmental and/or social impacts which significance is so high that prevents the implementation of the project by public interest.
Good international industry practice (GIIP)	IFC (2007b) defines GIIP as the exercise of professional skill, diligence, prudence and foresight that would be reasonably expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally. The circumstances that skilled and experienced professionals may find when evaluating the range of pollution prevention and control techniques available to a project may include, but are not limited to, varying levels of environmental degradation and environmental assimilative capacity as well as varying levels of financial and technical feasibility.
Independent Specialist Reviewers (REI)	Singular or collective persons, national or foreign, public and/or private that support the competent authority in the EIA process for category A + activities (defined in the terms of the EIA Regulation and that have significant impacts at national and/or cross-border level). REIs are experts in matters subject to EIA review, and in the exercise of their functions they are endowed with technical-scientific autonomy
Installation Environmental License	Issued following the approval of the EIA for category A+ and A (and submission of the Resettlement Plan, should resettlement be required), EAS for B category projects, or Good Environmental Management Practices for Category C. It allows the project to begin construction. This license is valid for 2 years, renewable
Interested and Affected Parties (PI&As)	Individual or Collective Persons, public or private, to which the proposed activity interests and/or affects, directly or indirectly. Also termed stakeholder in line with international best practice.
Irreversible	Not able to change back to a previous condition or state.

Term	Definition
Midstream	The oil and gas industry is usually divided into three major components, upstream, midstream and downstream. ISO 20815 defines "midstream" in its definition section as the business category involving the processing and transportation sectors of the petroleum industry.
Nearshore	Nearshore describes petroleum activities in the zone close to shore, located between the shore and the open ocean. There is no strict definition to nearshore. In oceanography and marine ecology terms it is often also described as the littoral zone, which includes the intertidal zone extending from the high water mark to coastal areas that are permanently submerged. For the purpose of this guideline nearshore is included in the definition for offshore.
Operational Environmental License	Issued following verification of full compliance with the EIA/EAS and with the Project facilities already built (and implementation of the Resettlement Plan, if resettlement was required), allows for the project to start operations and is valid for 5 years, renewable
Offshore	Offshore describes petroleum activities in the open ocean away from the coast. In oceanography and marine ecology terms it s is often described as the pelagic zone consisting of open ocean. For the purpose of this guideline the definition of offshore includes the nearshore area.
Operator	Entity or company that executes on behalf of a concession holder the day-to-day management of petroleum activities
Petroleum Operations	As defined by Decree 56/2010: all or any of the operations related to exploration, development, production, separation and treatment, storage, transport and sale or delivery of petroleum at the agreed supply point in the country, including the operations of natural gas processing and the closure of all operations concluded.
Primary data	Primary data means data collected via targeted survey techniques specifically for the proposed project.
Project	Project in these Guidelines means an activity of a Concession right holder (proponent) for which certain information (e.g. an EIS) is required for submission to the competent authority.
Project Registration	The first stage of the EIA Process that culminates with the categorization of the project in terms of the level of environmental assessment required
Provincial Service of Environment	Entity created by Ministerial Diploma 11/2021, that directs and ensures the execution of Land and Environment sector activities
Provisional Environmental License	One of the three types of environmental licenses. It can be issued following the approval of the EPDA and ToR for the EIS. This license is not mandatory, can be requested at demand. It is valid for 2 years and is not renewable; It allows the project to begin the so-called early works
Scoping	Scoping is a critical, early step in the preparation of an EIA. The scoping process identifies the issues that are likely to be of most importance during the EIA and eliminates those that are of little concern. In this way, EIA studies are focused on the significant effects and time and money are not wasted on unnecessary investigations (https://iaia.org). In essence, the scoping phase allows for 'scoping in' and 'scoping out' of valued ecosystem components (VECs) to be considered. This allows the subsequent EIA to focus on issues of relevance to a particular project.
Secondary data	Secondary data consists of information available in the public domain or held with relevant institutions. Such data is normally not collected and owned by the project and more likely gathered for other purposes than the particular project. It may this have a different spatial or thematic focus but would still be relevant.

Term	Definition
Significant impact	The assessment of the significance of project-related impacts is a key objective of an EIA. The significance frames the question in terms of benchmarks or thresholds beyond which an impact could be considered unacceptable in the environmental and social context of a project. The criteria used are usually based on both the physical characteristics of an impact (e.g. magnitude, areal extent, duration, frequency, likelihood and reversibility) and the context-specific value characteristics (e.g., ecological, social, cultural, public health, and economic values) that adhere to the affected environmental component in the region of a project, and possibly more broadly (e.g. in terms of biodiversity). Assessments of significance should be based on clear, unambiguous criteria that are defined in the EIA methodology. An impact is considered significant if the assessment of the impact parameters exceed a pre-defined significance threshold after feasible mitigation measures being implemented. Significance is always context-specific, and criteria should thus be developed for each project and its setting. (adapted after IAIA Fastips No. 14)
Simplified Environmental Study (EAS)	Third and last stage of the EIA process for B Categories. The stage of the EIA process that analyses technically and scientifically in a simplified manner, the environmental consequences of the implementation of a given development.
Stakeholder	Stakeholders are persons or groups which are directly or indirectly affected by a project, as well as those who may have interest in a project and/or the ability to influence its outcome, either positively or negatively. The term stakeholder is broad and may include locally affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians, religious leaders, civil society organisations and groups with special interested, the academic community, or other businesses.
Technical Commission	Group of inter sectorial technicians that review technical documents issued in the scope of the EIA process. The technical Commission is appointed by the environmental authority, on a case-by-case basis, and has an impar number of members. The composition of the technical commission comprises: • One representative of the EIA authority at central level, that is the chair of the commission. • One representative of the autarchy where the project is located, as applicable. • Other representative (s) of relevant government entities, environmental educational institutions, and research centres • One (or more) technician specialist in gender and health issues • One (or more) technician specialist in the area of the project (e.g. energy, mining, agriculture, etc) and requested or contracted by the EIA authority, as relevant
Terms of Reference (ToR/TdR)	The document that contains the specific information and parameters that guide the elaboration of EIS and EAS of a given activity and that must be submitted by the proponent to the Environmental Authority for approval before the EIS or EAS can commence.
Upstream	The oil and gas industry is usually divided into three major sectors: upstream (or exploration and production - E&P), midstream and downstream. The upstream sector includes searching for potential hydrocarbons, drilling exploration wells, and subsequently operating the wells to bring the crude oil or raw natural gas to the surface.

Term	Definition
	ISO 14224 defines "Upstream" in its definition section as the business category of the petroleum industry involving exploration and production.
VEC	Valued ecosystem components (and valued socio-economic components) describe ‘attributes or components of the natural and human environments for which there is public or professional concern (Beanlands and Duinker, 1983)

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APPENDIX A
EXEMPLARY GUIDANCE ON SPECIFIC ENVIRONMENTAL AND SOCIAL TOPICS

The following examples offer guidance on specific topics that may need to be addressed in the EIA process for upstream and midstream petroleum operations in Mozambique.

This guidance is not intended to be exhaustive and should only be followed where it is relevant to the specific project being considered, including the scale/nature of the likely impacts of each activity. Project proponents are encouraged to conduct their own due diligence to identify the key environmental and social receptors that have the potential to be impacted due to the planned project activities.

A.1 Environmental issues

Biodiversity

There are numerous ways in which biodiversity can be affected by petroleum activities, and this is typically a major focus area in an EIA or EAS.

Project proponents should follow the requirements of IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources (IFC, 2012), which is the most comprehensive of the international environmental safeguards on this topic. Performance Standard 6 addresses how developers can sustainably manage and mitigate impacts on biodiversity and ecosystem services throughout the project's lifecycle, aiming to protect and conserve biodiversity, maintaining the benefits of ecosystem services and promoting the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development proprieties. The use of appropriate recognised tools for biodiversity assessments such as the Integrated Biodiversity Assessment Tool (IBAT) and the Biodiversity Information System of Mozambique (SIBMOZ, sibmoz.gov.mz) is recommended. Consideration also should be given to the development of Biodiversity Action Plans (BAP), Biodiversity Management Plans (BMP) and potential Biodiversity Offsetting Plans (PGCB) depending on the risk level of a project on biodiversity. Numerous guidance documents have been developed in recent years, e.g. Hardner et al. (2015) or Gullison et al. 2015).

Mozambique has a Directive on Biodiversity Offsets (Ministerial Diploma nº 55/2022, of 19th May) for which the "Manual for implementing the Directive on Biodiversity Offsets in Mozambique" was developed. This Manual includes several technical guides and a checklist of the most relevant aspects that must be considered when preparing the screening, EPDA+Tor and EIS documents.

Potential mitigation measures for biodiversity impacts for petroleum activities are identified and discussed in the 'Good Practice in the Prevention and Mitigation of Primary and Secondary Biodiversity Impacts' (EBI, 2003) and, in addition for pipelines, IPLOCA (2013). The "Good Practice Guidelines to mitigate the impacts of oil and gas development on coral reefs, sea turtles and marine mammals in the Northern Mozambique Channel" should also be considered since these are specific to the region.

In respect of the specific impacts of offshore seismic surveys on marine mammals and sea turtles, proponents should have regard to international good practice such as the JNCC guidelines (JNCC, 2017). The Directive on Biodiversity Offsets and the associated manual stated above are to be considered.

Protected Areas, Critical Habitats and Important Ecosystems

A higher standard of baseline surveys, impact assessment and mitigation should be undertaken if the project may impact, directly or indirectly, on protected areas or other recognized biodiversity-sensitive areas or conservation priority areas, such as key biodiversity areas (KBAs), important bird areas (IBAs), important marine mammal areas (IMMAs), important shark and ray areas (ISRAs) and RAMSAR areas. In practice, in Mozambique, this is likely to mean that projects affecting wetlands, coral reefs, seagrass beds, mangroves and other ecosystems having feeding or breeding areas for threatened or protected species, should be surveyed and assessed in detail.

The decision for the development of the project must follow the criteria established in Annex V (fatal questions) of Decree nº 54/20215, of 31st December, and the criteria of sections I and II of Ministerial Diploma nº 55/2022, of 19th May. The criteira imply two conditions:

a. every effort must be made to ensure that biodiversity is not affected by impacts caused by a given project or activity through the correct application of the mitigation hierarchy (avoid, minimize and restore);

b. if it is significantly negatively affected even after applying the steps of the mitigation hierarchy, it must be offset.

In deciding whether and how projects should proceed in areas of high biodiversity value, it is recommended that the approach complements the description of the Commission for Environmental Assessment (2006). A good source of advice and guidance can be found in IPIECA Biodiversity and Ecosystem Services Fundamentals (2016).

Some projects may have to comply with IFC performance standards and may be located in areas that are considered pristine and/or critical habitat and/or important ecosystems[19]. Critical habitats are those with high biodiversity value including habitats of significant importance to:

- Critically endangered or endangered species.
- Endemic or restricted range species.
- Habitats supporting globally significant concentrations of migratory species.
- Highly threatened and unique ecosystems.
- Areas associated with key evolutionary processes.

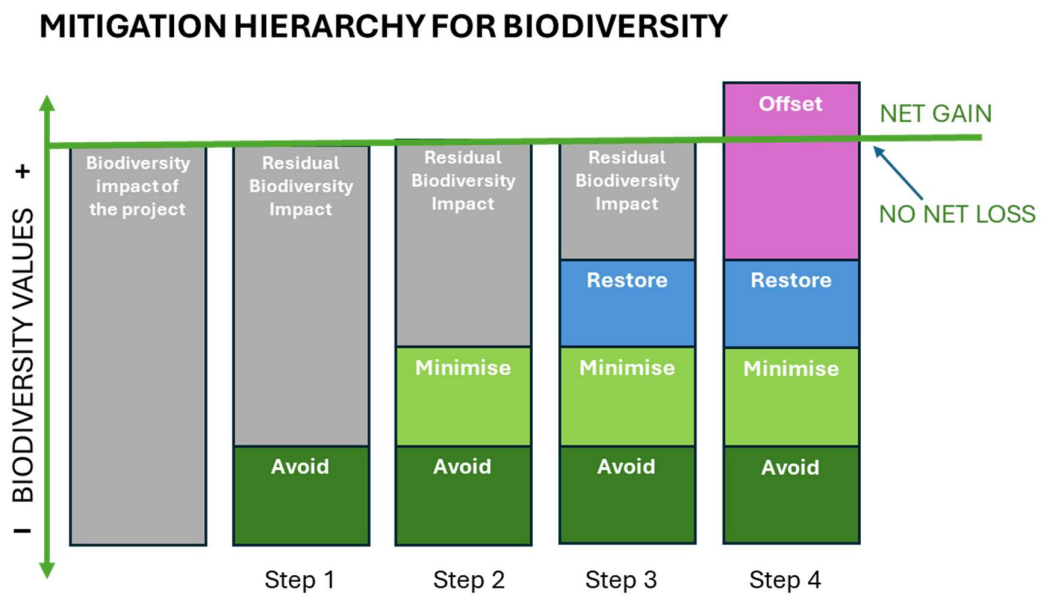
Where a petroleum project in or near a protected area[20], critical habitats and/or important ecosystems, additional mitigation measures should be implemented, particularly as to the integrity of the protected area, critical habitat and/or important ecosystems. It will also be necessary to verify whether the critical habitat is considered a fatal issue as described in Annex V of Decree nº 54/20215, of 31st December, or a type of biodiversity that cannot be offset (Ministerial Diploma nº 55/2022, of 19th May), since it will imply that the project will have to be altered.

[19] A definition for pristine and/or critical habitat and/or important ecosystems is given in the IFC PS6 (2012).

If the risk to the area under consideration is substantial and threatened (critically endangered, endangered and vulnerable) species could be at risk, the project may not be appropriate. Design alternatives such as the use of directional drilling or competing seismic survey in a different season should be considered.

Biodiversity offsets

Biodiversity offsets are measurable conservation outcomes resulting from action designed to compensate for significant residual adverse environmental impacts (usually biological/ecological) arising from project development after the avoidance and mitigation measures have been implemented. The goal of biodiversity offsets is to achieve no net loss of biodiversity and preferably a net gain with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity. The Figure below illustrates the application of the mitigation hierarchy with offsetting being a tool to achieve No Net Loss and/or Net Gain.



Offset principles are established through a framework for designing and implementing biodiversity offsets and verifying their success. Biodiversity offsets should be designed to comply with all relevant national and international legislation and planned in accordance with the Convention on Biological Diversity and its ecosystem approach.

In Mozambique biodiversity offsetting is regulated through the recent Ministerial Diploma nº 55/2022, of 19th May (Directive on Biodiversity Offsets). Biodiversity offsets are applied to Category A+ and A projects, in case activities have significant residual impacts on biodiversity after having implemented the previous steps of the mitigation hierarchy (i.e. avoid, minimize and restore). Not all biodiversity has to be offset, and Ministerial Diploma nº 55/2022, of 19th May defines which types of species and ecosystems must be offset (also indicating which ones are not offset due to their high value).

Offsetting follows the principle of equivalence, and biodiversity similar to that being impacted, however, there is scope for the offset to be directed towards biodiversity with higher conservation value. Offsetting should therefore preferably be implemented in the same province or neighboring provinces having similar biodiversity. Offsets can be developed in two types of areas:

a. underfunded conservation areas that are not achieving the conservation objectives for which the following were created;

b. other areas important for biodiversity, such as KBAs or RAMSAR sites, in order to improve the existing biodiversity there and ensure its effective protection [21].

Offsets can be managed in two ways: a) directly through the project proponent; or b) through a third party, with the proponent making compensation payments or buying biodiversity credits. Similarly, there are two approaches:

i. restoration and rehabilitation of biodiversity and

ii. reduction of anthropogenic impact on existing biodiversity within conservation areas or in areas important for biodiversity, resulting in biodiversity gains. Thus, for example, an area of mangrove forest lost in the right-of-way of an oil or gas pipeline would be offset by the reforestation of an area of mangrove forest in a nearby conservation area or through the reforestation of a KBA, transforming it in a conservation area. The offset results must be guaranteed in the long term.

The critical step to developing a biodiversity offset plan is to know what is being lost that cannot be avoided or mitigated. There are evolving methods for valuing and comparing the biodiversity lost with what can be used for offsetting, using quality area as the basic unit of assessment.

Mozambique has developed metrics to calculate biodiversity losses and gains and has a guide to develop metrics for ecosystems and species. This mechanism also defines that the net gain corresponds to 15% more than no net loss. According to Ministerial Diploma nº 55/2022, of 19th May, for outcomes where no net loss is to be achieved, the basic requirement is 1:1 for the number of individuals of a particular species or the weighted area gained for each unit lost. For outcomes where net gain is intended to be achieved, the basic requirement is 1:1.15 for the number of individuals of a species or the weighted area gained for each unit lost.

It is worth noting that biodiversity offset plans (PGCBs) must be registered on the environmental licensing management platform (https://www.sgla.mta.gov.mz/).

Other environmental examples of potential interest are likely to include:

- Air quality, climate change and adaptation
- Use of chemicals
- Waste management
- Water use, water security and water quality

[21] DINAB plans to publish the lists of areas that must be prioritized to receive biodiversity offsets.

A.2 Socio-economic issues

As part of socio-economic mitigation and enhancement, measures with regards to labour, employment and local economic development, employment of local people and engagement of local service providers should be prioritised. Examples of potential interest are likely to include:

- Labour issues
- Influx of workforce
- Fisheries
- Public participation, stakeholder engagement and consultation
- Vulnerable peoples
- Cultural heritage
- Community health, safety and security
- Occupational health, safety and security

A.3 Other Issues

Examples of potential interest are likely to include:

- General area of influence
- Application of Best Available Technology (BAT)
- Primary and secondary data collection
- Environmental management plans
- Emergency response planning including oil spill contingency planning

APPENDIX B
LIKELY KEY ASPECTS, POTENTIAL SIGNIFICANT IMPACTS AND POSSIBLE MITIGATION MEASURES ASSOCIATED WITH PETROLEUM ACTIVITIES

This appendix provides a non-exhaustive overview over likely key topics or aspects, potential significant impacts, and possible mitigation measures (Table B-1 to B-4) for each phase of petroleum development. Possible mitigation measures are based on examples of international good practice and need to be considered whether relevant/appropriate for a particular project on a case-by-case basis.

Information specific to coral reefs, sea turtles and marine mammals in Mozambique can be found in the "Good Practice Guidelines for Mitigating the Impacts of Oil and Gas Development on Coral Reefs, Sea Turtles and Marine Mammals in the North of the Mozambique Channel".

Table B-1: Offshore seismic surveys

Key topics/aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
Underwater acoustic emissions	• Possible impacts on marine biodiversity (mammals, turtles and fish)	• Identify and avoid protected and locally environmentally sensitive areas • Identify sensitive spawning sites and seasons for fish and crustaceans • Schedule surveys during least sensitive periods • Avoid nearshore surveys in areas with sea turtle migration • Use qualified marine mammal observers (MMO) to avoid interference with marine mammals • Apply passive acoustic monitoring (or other suitable technology) in particular sensitive areas or for specific species • Consult local stakeholders regarding survey program, permitting and notifications • Implement soft-start procedure to minimize disturbance to marine mammals • Establish safety zones for shutdown in event of close approach of marine mammals and turtles
Socio-economics	• Impacts on ocean fishing fleet and coastal/artisanal fisheries	• Consult fisheries/fishermen during planning and implementation of the surveys

Key topics/aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
	• Disturbance to marine traffic	• Establish effective communication channels with local fishermen and other marine users regarding survey timing and areas • Use local expertise to support operations (observers etc), where needed • Use of chase vessels to keep other vessels out of the survey area • Avoid any interference with fishing equipment/nets etc. • Develop compensation scheme for losses due to damage to fishing gear or temporary restrictions on fishing
Accidental events	• Oil spills related to collisions with other vessels and impacts on marine environment	• Remain on planned survey track to avoid unwanted interactions • Notify all other users of the areas to be surveyed well in advance and inform competent authority about any changes in the survey program

Table B-2: Offshore exploration (and appraisal) drilling

Key topics/aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
Physical presence	• Impacts on corals, seagrass beds and mangroves • Damage to sensitive habitats • Disturbance to marine organisms and birds	• Identify coral reefs, mangroves, seagrass beds, seaweed beds and turtle nesting areas in vicinity of operations and avoid interference • Avoid sensitive areas/habitats and most sensitive seasons for fisheries, fish spawning and animal migration
Emissions to air	• Emissions of NOx, SO_2 and VOC and particular matter with local disturbance to fauna • Emissions of GHG	• Compliance with MARPOL standards • Reduce emissions through energy efficient design and operate accordingly • Minimize duration of well testing
Discharges to sea	• Discharges of waste water and produced water from well testing with impacts on local ecosystems • Discharges of drill cuttings and chemicals with impacts on local ecosystems	• Minimize discharges of polluted waste water by adhering to national and international standards by treatment prior to discharge, use of effective operational controls and use of low toxicity chemicals
Waste	• Discharges of/loss of drilling fluids along with displaced cuttings with impacts on sea-bottom species and habitats • Local impacts from uncontrolled final disposal of hazardous waste brought to shore • Discharges of chemicals and oily waste with local impacts	• Use of water-based mud (WBM), low toxicity chemicals/additives, low toxicity synthetic based mud • Use high-efficiency waste control, treatment removal and disposal • Select the final disposal of cuttings based on evaluation of ship to shore for onshore treatment, cuttings reinjection and offshore discharge after treatment • If discharge to sea is the only alternative, conduct a full environmental appraisal to demonstrate that the impacts are acceptable • Avoid sensitive areas/habitats • Select chemicals with the least hazards and lowest potential impact and ensure final disposal at on shore facilities operating to international acceptable standards
Socio-economics	• Conflicts with fisheries • Positive impacts on local economy despite short duration of a limited drilling campaign	• Consult with fisheries and ensure acceptable co-existence • Establish 500 m exclusion zone around MODU where only vessels authorised by installation manager are permitted. • Appoint dedicated marine coordinator. • Use of chase vessels to keep other vessels out of the exclusion zone

Key topics/aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
		• Utilize local providers of goods and services when feasible and beneficial • Develop compensation scheme for losses due to damage to fishing gear or temporary restrictions on fishing
Accidental events - oil spills from blowout - H_2S release if sour gas present - discharges of chemicals	• Contamination of marine and coastal environment with subsequent impacts on human activities, flora and fauna. • Possible long term impacts	• Conduct spill risk assessment (assuming worst case scenario) and design and install drilling system to reduce risks of blowout • Establish a comprehensive oil spill contingency plan at local and national level able to handle any drilling operations • Establish emergency response plan for H_2S release • Train key personnel on safe drilling operations and on oil spill/H_2S response • Collaborate with all relevant parties on oil spill contingency and H_2S response

Table B-3: Offshore field development and production

Key topics/ aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
Physical presence	• Impacts on benthic fauna communities from subsea installations and pipelines, on marine organisms from underwater sound and on local fish populations • Impacts on marine mammals and sea turtles from field operations and vessel traffic • Impacts on onshore ecosystems from pipelaying, construction and operations of terminals onshore etc	• Develop scenarios and alternatives for field development in order to open up for environmental optimal choices • Use pre-installation sidescan sonar and UUV to identify possible vulnerable seabed features and subsequent alterncause conflicts to the fisheriesative location of structures, flowlines etc. • Develop and enforce field specific procedures for vessels and helicopters to minimize disturbance of marine mammals and turtles • Train vessel operators in marine mammals and turtle observations and avoidance • Apply all practices for developing and operating onshore facilities (ref. development and operation onshore)
Emissions to air	• Emissions of NOx, SO_2, VOC and particulate matter with local disturbance to fauna • Emissions of GHG	• Ref. mitigation measures for exploration drilling offshore • Install mooring systems offshore for vessels to enable cut of main engines when not required • Deploy methods for controlling and reducing leaks and fugitive emissions through the application of BAT • Avoid venting and routine flaring and keep non routine flaring for safe operations only
Discharges to sea	• Discharges of waste water from production drilling with impacts on local ecosystems • Routine discharges of black and grey water, food waste, deck drainage, bilge water and produced water with impacts on the marine environment • Discharges of produced water with impacts on ecosystems • Non-routine discharges of completion and workover fluids, testing fluids, ballast water etc. with impacts on the marine environment • Discharges into water courses from onshore bases and infrastructure (terminals etc) with	• Ref. mitigation measures for exploration drilling offshore taking into consideration cumulative effects from several development wells • Full scale treatment of potential discharge of produced water, reinjection if possible • Selection of chemicals with least environmental hazard • Used fluids injection if possible or closed system to shore • Ballast water management according to MARPOL and the International Convention for the Control and Management of Ships Ballast Water and Sediments • Establish secondary containment, spill control systems and spill response plans • Dispersion modelling to support the impact assessment

Key topics/ aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
	impacts on flora, fauna and society • Discharges of chemicals impacting soil and water •	
Waste	• Offshore discharges related to production drilling, i.e. drill cuttings with associated drilling mud on cuttings with impacts on sea floor sediments, marine habitats and species Non-hazardous and hazardous waste from offshore and onshore activities with impacts on environment and society	• Use of water-based mud (WBM), low toxicity chemicals/additives, low toxicity synthetic based mud • Select the final disposal of cuttings based on evaluation of ship to shore for onshore treatment, cuttings reinjection and offshore discharge after treatment • If discharge to sea is the only alternative, conduct a full environmental appraisal to demonstrate that the impacts are acceptable • Avoid sensitive areas/habitats • Select chemicals with the least hazards and lowest potential impact and ensure final disposal at on shore facilities operating to international acceptable standards • Consideration cumulative effects from several development wells • Use high-efficiency waste control, treatment removal and disposal • Appropriate identification, classification, collection, storage and segregation of waste • Safe and controlled transportation of waste • Select suitable disposal facility/method, ensure controlled operation and monitoring • Reinjection of waste/produced water
Noise and lighting sources	• Disturbance to marine biodiversity and birds from field operations, vessel movements and helicopter traffic	• Avoid most sensitive areas/habitats • Schedule operations during least sensitive periods • Reduce noise and light to lowest levels possible
Socio-economics	• Conflicts with fisheries • Macroeconomic impacts resulting from payment of revenues to the government • Impacts on individuals, families and communities due to direct employment and indirect development of opportunities in other sectors • Impacts from increased direct/indirect procurement of goods and services • Negative impacts due to drainage of skilled	• Establish 500 m exclusion zone around MODU where only vessels authorised by installation manager are permitted • Appoint dedicated marine coordinator. • Use of chase vessels to keep other vessels out of the exclusion zone • Consult with fisheries and ensure acceptable co-existence • Utilize local providers of goods and services when feasible and beneficial • Develop compensation scheme for losses due to damage to fishing gear or restrictions on fishing • Ensure that subsea structures/pipelines have no impacts on bottom trawling

Key topics/ aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
	workforce from otsectors, over-dependence on oil and gas, in-migration and related social and health implications, unrealistic expectations etc. • Impacts on cultural heritage from pipeline landfalls and onshore facilities	• Bury small pipelines (generally less than 16" diameter) to avoid snagging by fishing vessels
Accidental events - oil spills - H_2S release if sour gas present - discharges of chemicals	• Oil spills from development drilling, offshore field operations, pipeline transportation and onshore operations with impacts on marine environment, terrestrial fauna and flora, human activities etc.	• All infrastructure planned, designed and operated according to international process codes with alarm and shutdown systems to maintain the systems within the design criteria at all times • Establish comprehensive oil spill contingency plan covering field operations, storage and export as appropriate • Establish comprehensive emergency response plan including response to H2S release • Train personnel on oil spill and emergency response • Coordinate with all relevant parties on oil spill and emergency response

Table B-4: Decommissioning

Key topics/ aspects	Potential significant impacts	Possible mitigation measures (examples of international good practice)
Decommissioning aspects	• Impacts on the environment and on human presence/activities	• Restoration of offshore sites and abandonment of offshore structures according to local/ international law and based on agreement with local and national authorities • Develop full decommissioning, restoration and aftercare plans in consultation with local authorities, communities and people at an early stage • Minimize noise, emissions, discharges, vehicle movements etc. during reinstatement operations • Remove, if appropriate, all permanent structures, foundations, bases, roads etc. • Plug and abandon wells, remove downhole equipment. Plugs are tested to verify their correct placement and integrity. Casing is cut off below the surface and capped • Render restrictions connected to pipeline corridors to a minimum and remove pipelines, equipment etc. if possible/convenient • Remove all debris and contaminated soils, reform contours to match natural surroundings, restore natural drainage patterns, infill burn and waste pits, revegetate etc. • Develop monitoring plans and review restoration regularly at later date and remediate if necessary • Mitigate unemployment after demobilization through pro-active engagement/involvement on finding alternative livelihoods • Support communities on restructuring society to meet a new reality as to social conditions, business opportunities, employment etc

APPENDIX C
EXAMPLES OF TYPICAL ALTERNATIVES

This appendix provides a non-exhaustive overview of examples of typical alternatives considered during project planning.

Petroleum activity	Examples of alternatives
Seismic surveys - offshore	• Use of surface towed receivers or ocean bottom receivers • Timing of surveys, e.g. to avoid migration or spawning seasons • Measures to minimise impacts on marine mammals such as soft start, acoustic deterrents, etc.
Exploration, appraisal and production drilling and production activities – offshore	• Jack-up or semi-submersible mobile offshore drilling unit (MODU) or drill-ship or drilling unit attached to production platform • Timing of drilling to avoid environmentally sensitive periods • Location of activity and installations • Vertical or deviated well • Water based or synthetic/oil based mud system • Discharge of cuttings associated withdrilling mud or retention for disposal/treatment onshore • New well or re-entry • Water or gas injection • Well testing to be carried out or not, as appropriate • Completion, suspension or abandonment of well • Methods for minimizing flaring and venting • Systems for treatment of produced water • Energy efficiency in equipment used • Choice of chemical products
Oil and gas gathering pipelines and high pressure transmission pipelines – offshore	• In-field flowlines • Export pipelines (to shore or to another offshore platform) • Discharge pipelines • Injection pipelines (i.e. water or gas injection to retain reservoir pressure) • Umbilicals from platform or from shore – transport production chemicals for injection down-well • Pipelines to offloading/loading buoys • Protection of pipelines/umbilicals: burial into seabed or leave on surface or protect with rock/mattress • Cathodic protection/sacrificial anodes • Routing of pipelines
Production, storage and offloading facilities offshore	• Fixed platform • Tension leg platform or spar • Floating production storage and offloading (FPSO) – including LPG • Minimum facilities platform – unmanned, acting as above-sea gathering station with product piped to shore

Petroleum activity	Examples of alternatives
	• Subsea completion (product is gathered offshore and piped to shore, all on seabed) • Use of tankers to transport product – mooring facilities
Production and storage facilities and oil and natural gas terminals coastal/ onshore	• Location of terminal especially in respect of resettlement impacts, impacts on important ecological habitats and distance to houses (noise, visual, air pollution) • Location of construction and operational camps for workers • Management of impacts from camps • Location of jetties for loading/off-loading/import of construction materials • Construction of jetties (piling method) • Construction of breakwaters (rock dumping and floating caissons) • Options for dredging and disposal of dredged material if berths need to be dredged • Location of landfalls for incoming pipelines and routing of the pipelines into the site • Methods of transporting materials and workers to site (road/rail/air/sea) • Routing of access road(s) • Extent of onshore, as opposed to offshore, processing • Power generation options including renewable energy, combined cycle and combined heat and power and waste heat recovery • Emissions control technologies (in particular NOx reduction) for major combustion plant • Use of inlet air chilling on turbines • Method of extraction of natural gas liquids • Waste handling strategies, including: - Methods of treatment and disposal of produced water and sewage - Disposal of solids from regeneration of MEG or TEG or methanol - Method of removal and disposal of acid gases - Method of removal and disposal of heavy metals • Ground flares or high flares • Tank storage risk control options and management techniques (e.g. vapour recovery) • Water use and water sources • Building strategy, in terms of use of local labour • Location of quarries for supply of raw materials and transport options to the site

APPENDIX D
PROJECTS CATEGORY CRITERIA AS PER DECREE Nº 54/2015 AND DECREE 56/2010

ACCORDING TO DECREE 54/2015

Category A+ (Annex I of the EIA Regulation)

This category includes activities related to and/or located in the following areas:

A. The physical and socio-economic displacement of families that does not correspond to the model of resettlement pre-defined in the Regulation on the Resettlement Process Arising from Economic Activities.

B. Activities located in areas of high biodiversity value, including:
   i. Habitats of significant importance to critically endangered species and/or threatened under national or international legislation.
   ii. Habitats of significant importance for endemic and/or restricted species
   iii. Habitats of significant importance for species protected in the country.
   iv. Habitats that provide conditions for the existence of significant concentrations of migratory and/or congregator species
   v. Highly threatened and/or unique ecosystems
   vi. Areas associated with key evolutionary processes such as mangroves.

C. Activities with potentially irreversible impacts (before the application of mitigation) in areas where human activity has not substantially modified the native ecological functions and species composition of the area.

D. Activities located in conservation and protection areas and their buffer areas, except for activities proposed by the managing entity of the Conservation Area, when aimed at improving its management.

E. Activities whose implementation directly affect coral reefs and primary dunes, mangroves, wetlands, and seagrass whenever they are affected in an area greater than 1ha.

F. Populated areas where the activity may involve high levels of pollution or other disturbances that can significantly affect local communities.

G. Unique scenic areas

H. Native forests

I. Areas containing endangered animal and/or plant species, habitats, and ecosystems.

Category A+ activities include:

a) Extraction, storage, transport, processing, and production of derivatives of Hydrocarbons

b) Underground and surface storage facilities for combustible gases

Category A Activities (Annex II of the EIA regulations):

Activities related to and/or located in areas with the characteristics described below.

Areas and ecosystems recognized as having special protection status under national and international legislation, such as:

a) Small islands
b) Imminent erosion zones
c) Areas exposed to desertification.
d) Areas of archaeological, historical, and cultural value to be preserved.
e) Protection zones for springs and water supply sources
f) Underground reservoirs
g) Densely populated areas that imply the need for resettlement
h) Regions subject to high levels of development or where there are conflicts in the distribution and use of natural resources.
i) Areas along watercourses or areas used as a source of water supply for community consumption.
j) Areas containing valuable resources, such as aquatic, mineral and plant resources.

Activities included in this category:

1. Infrastructures
   a) All activities that require the resettlement of the population
   b) Industrial allotment activities with more than 15 ha
   c) Marinas and docks with more than 150 mooring points
   d) Railway and road bridges longer than 100 m
   e) Airports and aerodromes with a runway length equal to or larger than 1800 m
   f) Oil pipelines, gas pipelines, submarine cables and fiber optic cables longer than 5 km in length
   g) Establishment or expansion of ports and port facilities for ships with tonnage exceeding 4,000 gross tons.
   h) Naval shipyards for the construction and repair of vessels equal to or larger than 5 ha, or intervention on the coastline exceeding 150 m in length.
   i) Water mains or aqueducts over 10 km long and with a diameter equal to or greater than 1 m
   j) Dredging of new port access channels
   k) Quays and docks
   l) Aerial and underground electric lines

2. Treatment and disposal of solid waste and effluents
   a) Storage, transport, treatment, and disposal of hazardous industrial waste

Category B Activities

Activities in this category differ from category A mainly in the scale of impacts. In general, they do not significantly affect human populations or environmentally sensitive areas.

This category includes:

a) Power transmission and distribution lines below 66 kV
b) Fuel supply infrastructures
c) Water supply and sanitation systems, pipelines, treatment plants and effluent disposal systems
d) Dredging or maintenance of navigation channels, as long as they do not exceed the bottom depth limits previously achieved.

Category C Activities

These are activities for which negative impacts are negligible, insignificant, minimum, or even non-existent There are no irreversible impacts in this category, with the positive ones being clearly superior and more significant than the negatives.

ACCORDING TO DECREE 56/2010

The below provides a non-exhaustive overview of the criteria provided in Decree nº 56/2010 for the different project categories relating to petroleum operations.

Category A activities (Article 1)

Category A activities include activities related with the development, production, construction and operation of an oil pipeline or gas pipeline systems and decommissioning and other activities to be carried out in sensitive ecosystems and conservation areas.

Category B activities (Article 1 and Article 17)

The activities in this category are related to exploration, except in conservation areas and sensitive ecosystems.

Category B activities are preceded by an EIS in the following circumstances:

a) When the Area of Influence is near or in the presence of ecosystems recognized by the national and international legislation, with special statute of preservation;
b) Sensitive habitats, infra-structures and human occupation;
c) Presence of areas of conservation;
d) Area of artisanal fishing;
e) Area of tourism activity; and
f) Other protection areas which may suffer negative effects arising from the Petroleum Operations.

In the cases provided above, the procedures in respect of Category A activities shall be observed, under the terms of these Regulations.

Category C activities (Article 1 and 18)

Category C activities are those which by their nature do not entail damage to the environment.

This category includes:

a) Magnetic and electromagnetic surveys;
b) Geological surveys;
c) Gravimetric surveys;
d) Geothermal circulation measurements;
e) Radiometric measurements;
f) Geochemical surveys;

g) Collection of soil and seafloor samples, and drilling of cores to a maximum of 100meters;
h) Scientific studies conducted by scientific research institutions but not includingseismic acquisition;
i) Basic surveying for knowledge of the area; and
j) Other activities which do not entail negative impacts on the environment and public health.

APPENDIX E
KEY ENVIRONMENTAL LEGISLATION

Legal/regulatory instrument	Description
GENERAL LEGISLATION	
Mozambican Constitution (as amended 2004)	The Mozambican constitution states that citizens should live in a balanced environment, and that it is everyone's duty to protect and conserve the environment. Further, environmental concerns should be included in all sectorial policies and natural resources should be managed in a way as to ensure ecological stability and that the rights of future generations are protected.
Resolution 5/95, National Environment Policy	The National Environment Policy (Resolution 5/95) – currently planned to be revised, establishes the basis of all auxiliary environmental legislation, with the purpose to ensure sustainable development through an acceptable compromise between the socioeconomic development of the country and environmental protection. The policy aims to guarantee the management of the natural resources of the country in such a way that their functional and productive capacities are preserved for present and future generations.
Decree 35/2014, Penal Code	The Criminal (Penal) Code of Mozambique introduces crimes against the environment, related to issues such as research and illegal exploitation of mineral resources; dissemination of diseases; toxic and harmful substances to health; illegal exploitation of forest resources; destruction of protected or forbidden species; pollution and pollution with danger to the community. Article 353 focuses on the fines for the destruction of protected or prohibited species (fauna, flora, mangroves, corals and other marine or freshwater species, as well as erosion or alteration of water courses due to project activities. Pollution is considered inadmissible whenever the nature or the values of the pollutant emissions breach the guidelines or limits imposed by the competent authority according to legal and regulatory provisions, companies or other similar entities being jointly liable for the payment of the fine and for the remediation of the damages caused.
Law 20/97, Environment Framework Law	The Environment Law provides a framework for the use and correct management of the environment and its components. It forms the basis for a set of subsidiary and complimentary legislation that are concerned with protecting the environment, and it obliges all sectorial legislation that in any way deals with environmental management to conform to its stipulations. Its overarching objective is to provide for sustainable development. The law has the following main characteristics: • It introduces the obligation to perform environmental assessments for all activities, public or private, which may affect the environment, and for such activities to obtain an Environmental License before any activity may start. • The polluter pays principle. • A wide definition of the environment, which includes not only the physical and biological components, but also socio-cultural and economic conditions that may affect communities. • Acknowledgment of the importance of traditions and local knowledge for contribution to conservation and preservation of natural resources and the overall environment. • Provision of ample possibilities for public participation in environmental decision making. • Provision for the establishment of environmental protection zones, biodiversity, and cultural heritage protection. • Placing special emphasis on the need to avoid transboundary impacts. The Environmental Law is associated with several regulations, of which the most important to the present context include the Regulations for the Environmental Impact Assessment Process

Legal/regulatory instrument	Description
ENVIRONMENTAL IMPACT ASSESSMENT	
Decree nº 54/2015, Environmental Impact Assessment Regulations	The EIA Regulations apply to all public or private activities that can have significant environmental impacts. According to this decree, the granting of an Environmental License is a prerequisite for a range of defined development activities. A revision of the EIA Regulations is currently underway. Decree 54/2015 establishes four environmental assessment categories (A+, A, B and C) in accordance with different types of activities (and their impacts). Petroleum development projects are in practice always considered to be a "Category A+" activity that is subject to the elaboration of an Environmental Pre-feasibility and Scoping Study (EPDA) and Terms of Reference (TdR) for the Environmental Impact Study (EIS) and, subsequently, of an EIS. This category includes projects that require both strong social and environmental scrutiny and the involvement of supervised and independent experts in the EIA review process due to their potential impacts (resettlement; location in areas of high biodiversity value).
Decree nº 25/2011, Environmental Auditing Process Regulations	The decree applies to public and private activities, which may directly or indirectly affect the environment. It defines environmental auditing as a management tool for systematic, documented, and objective assessment of the functioning and organization of the management system, and of the processes for control and protection of the environment. The audits can be performed either by public or private entities (which must be certified by MTA), and in general they use the EMP as base for the audit.
Decree nº 11/2006, Regulations for Environmental Inspection	The Regulations for Environmental Inspection regulate activities of supervision, control, and enforcement of compliance with environmental protection standards at the national level. The responsibility for environmental inspection lies with MTA. This regulation applies to development activities that could have negative environmental impacts and its application verifies if recommendations or mitigation measures detailed in the EIS reports have been implemented. Transgressions may be fined and/or be subject to criminal prosecution.
Ministerial Diploma nº 129/2006, General Directive for the Preparation of Environmental Impact Studies	Details the procedures for obtaining an environmental license, as well as the format, general structure, and content of the EIA report. It aims to standardize the procedures followed by various key stakeholders in the EIA process
Ministerial Diploma nº 130/2006, General Directive for Public Participation in the EIA Process	This Directive defines the public participation process of the EIA process, generally, as well as the specific activities that must be associated with public participation in petroleum projects.
Ministerial Diploma nº 118/2022, Directive for Independent Expert Reviewers for Category A+ Activities.	This Directive defines the procedures for the registration and intervention of independent specialists in the Environmental Impact Assessment (EIA) process of category A+ activities, regulated by Decree No. 54/2015.
HYDROCARBONS	
Petroleum Law n. º 21/2014, of 18 August	The Law applies to petroleum operations and any infrastructure owned or held by the rights holder or third party, used in connection with petroleum operations, subject to Mozambican jurisdiction, including foreign-flagged mobile infrastructure for the purpose of conducting or assist in petroleum operations, unless otherwise established by law. 2. It also applies to the use or consumption of oil when such use is necessary or constitutes an integral part of oil production or transportation operations under the Law. 3. The activity of refining, industrial use, distribution, and marketing of petroleum products is not within the scope of the Law
Petroleum Operations and infrastructures Licensing Regulation Decree nº 84/2020	Establishes the rules and procedures for licensing the construction, installation, alteration, replacement, operation and Demobilization of Petroleum Infrastructures, including Storage and Transport by circulating means, as well as authorizations upon registration.

Of September 18	The construction, installation, alteration, operation, demobilization of any Infrastructure used for Petroleum Operations, as well as development of wells, drilling ships, Production, Storage and Transport by circulating means, are subject to licensing under the terms of this regulation. 2. Licenses within the scope of this regulation are granted to legal entities involved in Petroleum Operations that guarantee the necessary precautions for environmental protection, with a view to its preservation.
Environmental Regulation for Petroleum Operations Decree nº 56/2010	The Environmental Regulations for Petroleum Operations were established to promote the correct and efficient environmental management of petroleum resources with a view towards the sustainable development of Mozambique. Article 5 of Decree no. 56/2010 defines three project categories (A, B and C) on basis of which the type of EIA is required, as follows: • Activities that fall into Category A require an Environmental Impact Study (EIS). • Category B comprises activities for which a Simplified Environmental Study (SES) is required with the exception of some cases as specified in Article 17 of the Regulations. • Activities included in Category C are exempted from an EIS and SES being subject to rules of sound environmental management generally accepted and considered best practice in the petroleum industry.
Petroleum Operations Regulation Decree nº 34/2015	Defines the rules for granting the right to exercise petroleum operations through a concession contract, in order to ensure that all petroleum operations are carried out systematically and under conditions that allow for comprehensive and coordinated supervision. Establishes operational requirements, including aspects related to safety, health and environmental protection and presents a list of environmental issues to be taken into account during petroleum operations.
BIODIVERSITY, FLORA, AND FAUNA	
Law nº 16/2014 amended and by Law nº 5/2017, Law on Protection, Conservation and Sustainable Use of Biological Diversity, and its Regulations, Decree Law nº 89/2017	This law establishes the basic principles and standards for the protection, conservation, restoration, and sustainable use of biological diversity in the national territory, particularly in conservation areas. This law is applicable to all values and natural resources existing In the national territory and in the waters under national jurisdiction and to all public or private entities that may directly or indirectly have influence over the national system of conservation areas of the country, with emphasis on the natural resources in a conservation area or its buffer zones. Apart from the conservation of biological resources, the law also refers to the preservation of elements of exceptional or unique natural, aesthetic, geological, religious, historical, or cultural value in an area smaller than 100 ha, whose integrity requires to be preserved.
Ministerial Diploma nº 55/2022, Biodiversity Offsets	The Diploma applies to all public entities and private national and foreign companies registered in Mozambique that implement projects that potentially generate impacts on the set of values and natural resources existing in the national territory and in waters under national jurisdiction, and to all activity sectors subject to Environmental Impact Assessment. Whenever impacts exist or are foreseeable significant negative residuals on biodiversity remain after the application of the mitigation hierarchy, the approval of management plans for biodiversity offsets in Category A+ projects or A of any type of activity subject to the environmental license, including, in petroleum operations and the mining industry, under penalty of rejection of requests for issuance or renewal of the environmental license.
Decree Law nº 51/2021, Regulation for the Protection, Conservation and Sustainable Use of Birdlife	This decree regulates the protection, conservation, and sustainable use of birdlife, including its natural, continental, marine, lake and river habitats. Article 5 defines the “Key Areas for Biodiversity” and “Important Areas for Birds” as bird protection zones. Appendices A and D define the protected species, the exploitation of which is not permitted, Appendix B defines the bird species in Mozambique included in CITES.
Decree nº 25/2008, Regulation regarding the Control of	Article 8 of this decree prohibits activities involving invasive alien species without prior authorization and states that 'after hearing the Interinstitutional Group for the Control of Invasive Alien Species, the National Environmental Authority (MTA) may prohibit any activity that, by its nature, may involve the spread of invasive alien

Invasive Exotic Species	species'. Activities include the import of any type of invasive exotic species, whether by sea, land, or air.
FISHERIES	
Law nº 22/2013, Fisheries Law	Its Article 17 states that any project that requires discharge of residual waters into maritime or continental waters must have prior authorization from the competent authorities, and that the polluters have the obligation, at their own expenses, to restore the quality of the affected environment to the condition prior to the action or omission causing the pollution.
POLLUTION, EFFLUENTS AND WASTE	
Decree nº 18/2004 as amended by Decree nº 67/2010, Regulations for Environmental Quality Standards and Effluent Emissions	The Regulations apply to both public and private activities, and define control parameters and methodologies for the maintenance of air quality, water quality, soil quality and noise. In addition, the competences for control, technical support, revision of standards, supervision of violations and sanctions regime are established.
Decree No. 52/2023, Regulation on Discharges	The Regulation applies to all public and private entities that carry out activities within the national territory, which can directly or indirectly modify the quality of water, through discharges of effluents. The operation of discharging effluents into surface and underground water resources, with standards different from those established in Annex II of this Regulation, is subject to authorization by the Regional Water Administration, Public Institution (ARA, IP) of the respective area of jurisdiction, upon opinion from the entity that oversees the environmental area.
Decree nº 83/2014, Regulation on Hazardous Waste Management	Establishes the legal framework for hazardous waste management in Mozambique aiming to minimize negative impacts on social health and the environment. It applies to all natural and legal, public and private persons involved in hazardous waste management or import, distribution and sale of expired used or new tires, setting the general principles of management, competences and classification, prohibitions and obligations, licensing and certification. It also establishes fees and penalties for illegal activities. Every facility and equipment for the preliminary storage, transport, disposal, treatment, recovery or elimination of hazardous waste, is subject to previous environmental licensing, according to the EIA Regulations. Operators and transporters of hazardous waste must be certified by MTA.
Decree nº 45/2006, Regulations for the Prevention of Pollution and Protection of the Marine and Coastal Environment	The Decree for the Prevention of Pollution and Protection of the Marine and Coastal Environment (Decree 45/2006) applies to discharges of dangerous or harmful substances from vessels in ports, port facilities, offshore installations, platforms, or other land-based sources, to the sea or inland waterways. This decree prohibits pollution of waters and beaches. It requires the establishment of further legislation for the protection and conservation of maritime, lacustrine, and fluvial areas, beaches, and fragile ecosystems.
Resolution nº 78/2009, Regulation regarding the Management of Substances that Destroy the Ozone Layer	This regulation prohibits the import, export, production, sale and transit of substances that destroy the ozone layer including the following: • Chlorofluorocarbon (CFCs); • Halogenated substances (Halon-1211, Halon-1301 and Halon-2402); • Carbon tetrachloride (CCL_4); and • Other substances defined by the Montreal Protocol as Substances that destroy the ozone layer, (ratified by Resolution 8/93, of 8 December)
LAND, RESETTLEMENT, CULTURAL & HISTORICAL HERITAGE	
Law nº /97, and Decree nº 66/1998, Land Law and Regulations	The Land Law classifies land in the public domain as Total and Partial Protection Zones. Total Protection Zones include, among others: • Interior waters, the territorial sea and the maritime exclusive economic zone (EEZ); • The continental shelf. • The strip along the maritime coast and around islands, bays and estuaries which is measured from the maximum high tide line to a mark 100m inland. Use of land in both total and partial protection zones requires issuance of a specific license for the required purpose. Approval of petroleum and gas infrastructure requires the automatic creation of a partial protection zone 50m beyond the area.
Law nº 10/1988, Cultural Protection Law and Regulations	The Law on the Protection of Cultural Heritage and the Regulations for the Protection of the Archaeological Heritage address the protection of monuments, buildings of historical importance, artistic and scientific sites, and natural elements of scientific and

for the Protection of the Archaeological Heritage (Decree nº 27/1994)	aesthetic interest. They also provide guidelines to be followed to protect cultural and archaeological heritage. While they would not apply directly to offshore activities, land-based facilities associated with offshore petroleum developments may require the consideration of cultural and archaeological heritage. As the main activities in offshore petroleum developments are undertaken at sea, the issues of land rights and land use planning are not of relevance for a major part of an operation. However, offshore petroleum developments may have associated facilities and infrastructure located on land (e.g. terminals, bases to support offshore activities, etc.), which may warrant the consideration of land rights and land use issues. These are described in detail in the onshore EIA guidelines. Decree-Law nº 27/1994 establishes the rights and protection of resources that have archaeological and historical value. Article 21 of these regulations prohibit construction and demolition or any other works that may result in physical changes to the protection zones of archaeological property of high scientific value or that are important to preserve for the future generations. These regulations establish, inter alia that the finding of artefacts shall be reported to the local authorities (District Administration or Municipal Council) within a period of 48 hours.
SEA AND MARITIME SPACE	
Law nº 4 of 1996, Law of the Sea	This law defines the legal context of jurisdictional rights regarding the strip of sea along the coast of Mozambique and contains provisions regarding the normative basis for regulating the administration and maritime activities of the country. The law also establishes sovereignty rights of the State for purposes of exploration and enjoyment of its natural resources. Defines the limits of the Mozambique territorial sea and its Exclusive Economic Zone (EEZ) as 200 miles from the territorial sea, which in turn is defined as 12 miles from the coastline. Within the EEZ the GOM has sovereign rights to exploration, conservation, and management of resources as well as other economic activities.
Decree nº 21/2017, Regulation Establishing the Legal Regime for the Use of the National Maritime Space	These regulations are applicable to the maritime space and to all the activities and uses (both public and private), including areas under jurisdiction of the port authorities. These establish the guidelines for: • Preparation, approval, modification, revision, and suspension of the instruments used for maritime space planning • The regime applicable to the titles for private use of maritime space, to the licenses to build on the strip along the maritime coast and around islands, bays and estuaries which is measured from the maximum high tide line to a mark 100m inland. • Taxes associated to the private use of maritime space. • Monitoring and technical evaluation of the maritime space planning. Two instruments are required for maritime space planning: (i) Situation Plan (Plano de Situação) and (ii) Allocation Plan (Plano de Afectação). Article 12 states that the Situation Plan is supported by an environmental declaration, under the EIA legislation. The Situation Plan may also be subject to a Strategic Environmental Assessment as well as to public consultation (article 18). Article 23 states that an Allocation Plan is considered a Project and as such it is subject to an EIA, considering what is established in Article 14 (Environmental Assessment). This Plan is also subject to Public Consultation (Article 25). The allocation of a Title for Private Use of Maritime Space (TUPEM) binds the title holder to effective use and to ensure adoption of measures required to maintain the good status of the marine environment and to, after extinction of the rights, the reinstatement of the environmental conditions which have been altered. For a project to move to the EIA stage it is mandatory to previously have the TUPEM.

APPENDIX F
KEY INSTITUTIONAL STAKEHOLDERS

INSTITUTIONAL SETTING	
Institution	**Roles and Responsibilities**
Ministry of Land, and Environment (MTA)	MTA is the main institution for regulating environmental issues. The Ministry of Land and Environment (MTA), established by Decree-Law nº . 1/2020 of 17 January (GdM 2020a), is the central authority that supervises environmental issues. The Ministry of Land and Environment has the following responsibilities: • Territorial Planning for the sustainable development of the country; • Formulation of policy implementation proposals, legislation and integrated development strategies for earth, environment, climate change, conservation, forests and wildlife; • Land administration and management; • Administration, management and sustainable use of forests and wildlife; • Administration and management of the national network of conservation areas; • Promotion of knowledge development in the domain of land and environment; • Guarantee, maintain and development the environment; • Definition and implementation of education strategies, awareness and outreach; • Intersectoral coordination and sustainable use of resources available for sustainable development. In the scope of the EIA Process, MTA has the following attributions: • Make decisions regarding the EIA Process and environmental licensing at central level, through the National Directorate of the Environment (DINAB), and at provincial level through the Provincial Environmental Services (SPA), including: o Project Categorization; o Analysis and approval of all documents and reports within the scope of the EIA process – Scoping Report (EPDA), and EIA Report (Categories A+ and A), Terms of Reference and Simplified Environmental Study - EAS (Category B), Environmental Management Plans (Categories A+, A, and B), and Good Environmental Management Practice Procedures (Category C); o Issuance of Environmental Licenses. o Inspection and Auditing of Environmental Performance. MTA includes several directorates and departments, of which the most relevant for the offshore petroleum sector are: • National Directorate of Environment (DINAB). Concerned with development of environmental policies, reviews of EIAs, and the issuing of environmental permits; • Provincial Environmental Service (SPA). Responsible for the issuance of licenses among other duties at the provincial level; • National Agency of Environmental Quality (AQUA) was created by Decree no. 80/2010 of 31 December (GdM, 2010a), as amended by Decree no. 2/2016 (GdM, 2016a), and has the responsibility, among other duties, to develop and implement strategies for the integrated control of water, air and soil pollution; Environmental auditing is part of their mandate; • National Administration of Conservation Areas (ANAC), which is administratively and financially autonomous, was created by Decree no. 9/2013 of 10 April, revised by Decree no. 8/2016 of 15 April, with the aim to ensure the implementation of biodiversity conservation policies and the management of conservation areas, among other responsibilities. It is responsible for the administration of protected areas (national parks and reserves), including wildlife, species, and habitats.

	• National Directorate of Land and Territorial Planning (DNDT), which is responsible for issues related to resettlement and compensation at national level, represented at Provincial level by the Provincial Directorate of Territorial Development and Environment (DPDTA). DNDT is also responsible for land management issues and the national land cadastre. • National Directorate of Climate Change. In charge of all aspects related with climate change. • Land and Environment Inspection (ITA) which is responsible for inspecting the activities and procedures of the MTA;
Ministry of Mineral Resources and Energy (MIREME)	MIREME is responsible for guiding and implementing policies in the context of geological research, inventory of and exploration for mineral resources including hydrocarbons. MIREME (among other authorities), is responsible for the inventory of underground resources in the Mozambican territory and the exclusive economic zone (EEZ), promoting and controlling prospecting and geological exploration activities and the rational use of mineral resources. MIREME is also responsible for promoting and controlling exploration, production, separation and processing activities for crude oil and natural gas and controlling transport of these for their delivery to export points or points for commercial sale within the country.
National Petroleum Institute (Instituto Nacional do Petróleo - INP)	The National Petroleum Institute (INP) is a regulatory entity, responsible for the administration and promotion of Petroleum operations, ensuring that petroleum operations are carried out in accordance with laws, regulations, and best international practices, with special emphasis on the optimized management of resources and compliance with health, safety and environmental protection aspects. Apart from the MTA, INP is also involved in the environmental permitting of petroleum developments by assisting in the evaluation of applications for environmental licenses and relevant documentation. Furthermore, INP's involvement in assisting in inspections and audits during the operational phase should be substantial.
General Inspection of Mineral Resources and Energy (Inspecção Geral dos Recursos Minerais e Energia - IGREME)	IGREME´s attributions include, among others: • Organise and carry out inspections, investigations and audits of different activities related to the Mineral Resources and Energy Sectors • Inspect and monitor compliance with provisions of regulations and standards related to health, safety, and environment. • Inspect and audit production facilities, transport, distribution and marketing of electric power, hydrocarbons, and fuel, including storage and fuel unloading facilities. • Ensure control of oil and fuel spills.
National Directorate of Hydrocarbons and Fuels (DNHC)	DNHC is a National Directorate under MIREME responsible for, among others: • Proposing and preparing policies, strategies, programs, plans and legislation related to the exploration, development, production, transport, storage, distribution and commercialization of hydrocarbons and fuels, and ensure their implementation. • Proposing and ensuring implementation of investment policies for the areas of oil, natural gas and their by-products, including the increase of local content involvement. • Preparing and proposing safety and environmental protection standards and ensure its implementation. • Ensuring licensing of activities related with petroleum operations.

Empresa Nacional de Hidrocarbonetos E. P. (National Hydrocarbon Company) - ENH	ENH is a Mozambican State entity responsible for exploration, prospecting, production and marketing of petroleum products and represents the State in petroleum operations.
Ministry of Sea, Inland Waters and Fisheries (Ministério do Mar, Águas Interiores e Pescas – MIMAIP	MIMAIP is the central organ of the Mozambican Government that directs, coordinates, organizes and ensures the implementation of the policies, strategies and business plans in the sea , inland waters, and fisheries areas. It administers all aspects of the maritime, river and lake environments, including fisheries, enforcement of maritime and inland water activities and scientific research.
The National Marine Institute (INAMAR IP)	INAMAR is an autonomous public institution working under the umbrella of MIMAIP. The responsibilities of INAMAR, IP are: the exercise of maritime authority in the maritime, lake, river and coastal jurisdiction areas, as well as in the fields of maritime administration, security and protection; the territorial planning of maritime space and the maritime public domain of the coastal zone; supervision of activities in maritime, river and lake spaces and maritime public domain of the coastal zone, as well as compliance with standards relating to the protection of marine ecosystems and coastal areas, and conservation and exploitation conditions of the marine conservation areas; the development and application of measures that ensure sustainable exploration, conservation and preservation of aquatic ecosystems; carrying out and/or coordinating rescue and search activities, as well as the salvation of goods, in maritime, river and lake spaces, with involvement from other relevant entities
Mozambique Oceanographic Institute (InOM)	InOM is a legal person governed by public law, dedicated to investigation and scientific research, development of knowledge, technological and innovation capital, endowed with legal personality, scientific, administrative, financial, and patrimonial autonomy. Among others, InOM is responsible for proposing legislation and defining policies, strategies, development-oriented programs and plans, scientific and technological bases of knowledge in its area of mandate; applying the legislation and instructions related to the activities that fall within the framework of its duties and competencies; execute government policies defined in relation to aquatic and fishing research, in accordance with the priorities established in sectoral plans; develop and implement strategic plans with a view to improve scientific knowledge; propose the establishment of national centers and international research and scientific research; carry out, participate in, observe and supervise the activities of marine research on scientific cruises;
National Fisheries and Aquaculture Development Institute (IDEPA)	IDEPA, IP operates throughout the national territory. The responsibilities of IDEPA, IP comprise: Preparation of specialized statistical studies on fishing activities and development infrastructure to support small-scale fishing; The development of policy and strategy proposals, development plans and programs for extension of fishing and aquaculture, with an emphasis on small-scale producers; Promoting the development of fishing and aquaculture, with a view to increasing the capacity of operators in the production, valorisation, management and commercialization of small national fishing producers; Carrying out and coordinating, within the scope of fishing, research, experimentation, demonstration and extension activities, with the involvement of local

	State bodies and communities for small-scale aquaculture producers; The promotion of actions aimed at the implementation of infrastructure to support production, processing, handling, conservation and marketing of fisheries and aquaculture products; f) Monitoring and evaluation of programs and projects to support the development of fishing and aquaculture
Maritime Transport Institute (ITRANSMAR, I.P)	Under the umbrella of the Ministry of Transports and Communications. ITRANSMAR, I.P, is responsible for: • The exercise of regulatory authority in the field of maritime, river and lake transport; • Carrying out studies that serve as a basis for the formulation of policies and strategies for the development of maritime, river and lake transport; • The regulation of access processes to services of river and lake maritime transport; • The application of uniform rules, equitable treatment and non-discriminatory to all operators in maritime, river and lake transport; • Promoting the incentive of efficiency and competition through specific economic regulation, in interest of users and service providers, in the scope of its domain; • The application and enforcement of legislation, both national and international, regarding maritime registration, training, examination, and certification of seafarers. • Signage of access channels to ports, berthing infrastructures, and ports; • Maintaining maritime safety conditions for carrying out merchant marine activities; ITRANSMAR, I.P, acts in coordination with other public and private bodies with functions and interests in transport and maritime signalling activity with the aim to ensure the fulfilment of its duties and functions.
The Ministry of Health (MISAU)	Includes a National Directorate of Public Health as well as a Community Health Department that oversees community health.
National Institute of Disaster Management (INGD)	In terms of contingency and response, INGD is responsible to coordinate the implementation of the Master Plan of Prevention and Management of Disasters approved by the Government; to ensure the preparation and updating of Contingency Plans and to direct the search and rescue operations in case of emergencies. The INGC is also responsible for conducting mitigation efforts (such as collection and analysis of data), undertaking preparedness measures (e.g. awareness campaigns), and coordinating disaster response (including distribution of food, tents, and other supplies).

APPENDIX G
COMPARISON BETWEEN DECREE 54/2015 AND DECREE 56/2010

The below table compares the provisions of EIA Regulations (Decree 54/2015) and those of the Environmental Regulations for Petroleum Operations (Decree 56/2010). It is worth noting that work is currently ongoing to revise the regulations to ensure consistency and updated and harmonized environmental management.

Due to the characteristics and risks of petroleum activities this Appendix focuses only on Category A+ and A.

DECREE	EIA REGULATIONS (DECREE 54/2015)	ENV. REGULATIONS FOR PETROLEUM OPERATIONS (DECREE 56/2010)
CATEGORIES	A+, A, B, C	A, B, C
STAGES	**Category A and A+** Category A+ Projects: all studies shall be reviewed and supervised by independent Specialists with proven relevant experience (Peer Review). Peer reviewers to be contracted by MTA but report is to be appended to the EPDA & EIS Reports.	**Category A** • Elaboration and submission of the Project Registration Process • Elaboration and submission of the EPDA and ToR for the EIS • Elaboration and submission of the EIS report EMP A Decommissioning and Rehabilitation Plan must be included as part of the EIS
COMPONENTS OF THE PROJECT REGISTRATION/ PROJECT PROPOSAL	• Descriptive memoir and preliminary design of the activity • Justification for the need and desirability of the project • Legal framework relevant for the activity • Brief description of the biophysical and socio-economic setting of the project area and area of influence • Current land use on the proposed site • Completion of the preliminary environmental information form (Annex VI of the EIA Regulations) • A proof of having a DUAT or a provisional DUAT (Land Use Rights) • Exploration Plan	• Identification and address of Proponent • Description of the Petroleum activity – including its functionalities, technologies to be used, location alternatives, materials to be used, etc; • Legal and factual justification for the petroleum activities • Summary bio-physical and socio-economic description of the affected area; • Description of the potential impacts of the activity on the environment • Annexes, containing maps on an appropriate scale and designs of the petroleum operations
COMPONENTS OF EPDA AND TOR (FOR CATEGORY A+ AND A PROJECTS)	• Non-technical summary • Names and contact details of the proponent and the EIA consultants team • The area of influence of the proposed activity (both direct and indirect) • The limits and land patterns in the indirect and direct area of influence of the project	• Identification and Professional Address of the Proponent • Background of the EIA process; • The EIA process to be followed • Identification and Professional Address of the EIA Consultants; • Pre-feasibility Studies; • Scope Definition; • ToR definition;

	• Description of the project, including all activities and respective alternatives, relating to the planning, construction, exploration, and, when applicable decommissioning stages • Description of the biophysical and socio-economic environments, including a preliminary identification of ecosystem services and the vulnerability to climate change • Identification and assessment of any fatal flaws • Indication of potential environmental impacts relevant for the activity, including those relating to climate change, if applicable • Identification and description of the aspects to be investigated in detail in the EIS (Terms of Reference (ToR)) • A report on the public participation process	• Impact significance assessment; • Description of petroleum activity and the anticipated actions, as well as the respective alternatives during the construction, operation and decommissioning phases; • Legal and factual justification of the Petroleum Operations; • Biophysical and socio-economic description of the affected area; • Description of the potential impacts; • Timetable of the studies to be carried out and the phases of setting up the Petroleum Operations • Identification of impacts to be studied in depth during the EIS • Direct and indirect area of influence; • Fatal flaws that can prevent the petroleum operations from being carried out; • Annexes, containing maps on an appropriate scale and designs of the petroleum operations
COMPONENTS OF EIS (CATEGORY A+ AND A)	• A non-technical summary covering the main issues, conclusions, and recommendations • Identification and address of of the proponent • Identification of the multidisciplinary team that carried out the study • The legal context of the activity, including resettlement and/or biodiversity offsets, if applicable and its insertion into existing land use plans, for the direct and indirect areas of influence of the activity (by activity, meaning project) • A description of the activity in the planning, construction, operation, and decommissioning phases • A detailed description and comparison of alternatives • Geographical location and representation of the area of influence of the activity • A description of the baseline environmental and social situation, including a qualitative assessment of the existing ecosystem services and an evaluation of the vulnerability of the project to the effects of climate change • A forecast of the future environmental situation with and without the implementation of the recommended mitigation measures	• Identification of professional domicile of the Proponent • Identification of the environmental consultant as well as the team responsible for the EIA and their functions; • Non-technical Summary, including the main issues addressed, as well as conclusions and recommendations; • The limits and geographical representation of the Project area of influence; • Description of the proposed petroleum operations, planed actions, impacts and mitigation measures; • Legal framework of the petroleum operations and its insertion on the existing land use plans for the direct area of influence; • Identification of information gaps and measures to minimize the gaps; • Identification, classification and assessment of potential environmental impacts and mitigation measures; • Description of environmental components covered by the study; • Description of emissions to sea, air and soil;

	• Summary of the impacts and environmental and social feasibility of the alternatives • Identification and analysis of the impact of the project on the health, gender and vulnerable members of affected communities and the associated mitigation measures • Identification and assessment of the direct, indirect, residual, and cumulative impacts and the proposed mitigation, enhancement and/or compensation measures • The provisional or final land use permit (DUAT) for the project area • An Environmental Management Plan (EMP) that includes the monitoring of impacts, as well as environmental education, communication, accident emergency and contingency programs/plans. • A Biodiversity Offset Management Plan (as applicable) as an annex to the EIS • The Physical and Socio- Economic Survey Report (RLFSE) as an annex to the EIS (as applicable), to be submitted and approved by the entity that superintends the resettlement process, elaborated according to the technical directive for the preparation and implementation of resettlement plans (Ministerial Diploma 156/2014). The RLFSE must include the report of the public participation meetings (at least two) held for the resettlement process. • The public participation process report • The proof of payment of the Income tax, for consultants not domiciled in Mozambique (subcontracted) • The Specialist studies as an Annex • For A+ Category, the report of the Independent Expert Reviewers must be submitted to the environmental authority before the approval of the EIS.	• Description of material goods and cultural importance of potentially affected monuments; • Assessment of potential consequences of chosen technical specifications; • Environmental criteria and impacts considered for the final option of technical specifications; • Description of the possible measures planned in order to prevent, control, mitigate and the possibility of rehabilitation and offsetting the possible negative effects on the environment. • List of all the licenses, authorizations and concessions that should be obtained from other departments; • Description of the systems that shall be applied for the control and monitoring of the activities and their effects. • Detailed description and assessment of the different alternatives and future environmental forecast with or without mitigation measures • Environmental Management Plan, including monitoring actions, Environmental Education Program Waste Management Plan, Emergency Response Plans, • Public Participation Process Report • Impacts assessment, including cumulative impacts
PUBLIC PARTICIPATION	• Mandatory for A+, A and B categories. • Minimum of two rounds of meetings in each place are mandatory for A and A+. • Communication of public consultation meetings must be publicized at least 15 days before the meetings. • All technical reports must be distributed to the public before the meetings;	• Mandatory for A and B Category, including in the EPDA stage. • Full reports must be distributed to the public (increases costs), namely EPDA report and EIS Report.

	• The public has 45 days to send comments on the EIS to the consultant, for Category A+; • The public has 15 days to send comments on the EIS to the consultant, for Category A and B;	
DEADLINES	**<u>Category A+</u>** *MTA's Review:* Project registration – 8 business days EPDA + ToR – 45 business days EIS – 60 business days; *Client/Consultant:* Submission of EPDA + ToR: **maximum 270 days** from approval of Project registration; Submission of EIS: **maximum 360 days** from approval of EPDA and ToR **<u>Category A</u>** *MTA's Review:* Project registration – 8 business days EPDA + ToR – 30 business days EIS – 45 business days; *Client/Consultant:* Submission of EPDA + ToR: maximum 180 days from approval of Project registration; Submission of EIS: maximum 270 days from approval of EPDA and ToR	**<u>Category A</u>** *MTA's Review:* Pre-Assessment – 7 business days EPDA + ToR – 20 business days EIS Report – 45 business days;
LANGUAGE AND SUBMISSION REQUIREMENTS	All documents in Portuguese All documents submitted in colour, in the number of copies determined in the project categorization/EPDA approval letters, in paper and electronic format. Submission of the EIA report must include geo-referenced habitat maps (shapefile format or similar).	All documents in Portuguese. All documents submitted in the number of copies determined in the pre-assessment/EPDA approval letters, in paper and electronic format.
FEES	For starting the process, the applicant should pay a fee of 1,000.00 MT to purchase the pre-evaluation form. *Environmental License:* Category A+ - 0,30% of the total amount of the investment Category A and B - 0.2% of the total amount of the investment; Category C (declaration of exemption) - 0,02% of the total amount of the	For the purposes of commencement of the EIA process, the proponent shall pay a fee in the amount of 10,000.00 MT. *Environmental License:* Category A and B - 0,01% of the total amount of the investment

	investment (projects above 5,000,000.00 MT) or 1,000.00 (projects under 5,000,000.00 MT);	Category C (declaration of exemption) -0,01% of the total amount of the investment
FOREIGN CONSULTANTS	Individual consultants and non-resident companies may not do EIAs in Mozambique except as sub-consultants to registered consultants (Mozambican or resident foreign consultants). In such cases, more than 50% of the technical team must be Mozambican.	No requirement
OTHER	With Categories A&A+, the following must also be submitted with the EIA (if applicable): • A physical and socio-economic survey report (RAP´s Phase 1). • Biodiversity Offsets Management Plan	No requirement
TYPES OF ENVIRONMENTAL LICENSE	**Provisional license** – issued after approval of the EPDA (this license is optional). **Environmental license for installation** – issued after approval of EIA and presentation of the approved Resettlement Plan (where resettlement is applicable) **Environmental license for operation** – issued after verification/inspection of the integral compliance of the EIS versus the construction works and full implementation of the Resettlement Plan (where the latter is applicable). Payment of the license fee is done after the approval of the EL for Installation. The beginning of any operation activity without an issued EL for operation is prohibited and is subject to fine.	1 environmental license upon approval of EIA and payment of fees
ENVIRONMENTAL LICENSE TERM	The license lapses if the activity does not initiate in two years after its emission. In this case, term extension should be requested to the Authority for EIA 90 days before it expires Provisory License is valid for 2 years (non-renewable). License for installation is valid for 2 years (renewable if properly justified); License for operation is valid for 5 years. Renewable for the same period, through a request to the Authority for EIA.	Environmental licenses are valid for a period of 5 years, renewable for another 5 years. In this case, term extension should be requested to the Ministry responsible for the Environment 180 days before it expires.

	For Category A+ projects this can be conditioned to a submission of an updated EMP and/or a Biodiversity Offset Management Plan For Category A and B projects this can be conditioned to a submission of an updated EMP For Category C projects this can be conditioned to submission of Environmental performance Report. Renovation of EL is preceded by a visit of the Authority for EIA to Project area.	
TRANSMISSION OF ENVIRONMENTAL LICENSE	Proponent should pay 10.000,00MT and submit an updated EMP in case of transmission of Environmental License to another entity or in case of alteration of its Social denomination (in the last case the Boletim da República where this alteration is communicated should also be submitted).	In case a proponent wants to change the name in the Environmental License a tax of 30.000,00MT; 20,000.00MT; and 10.000MT should be paid for Category A, B and C projects, respectively.