

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEXES

Contents

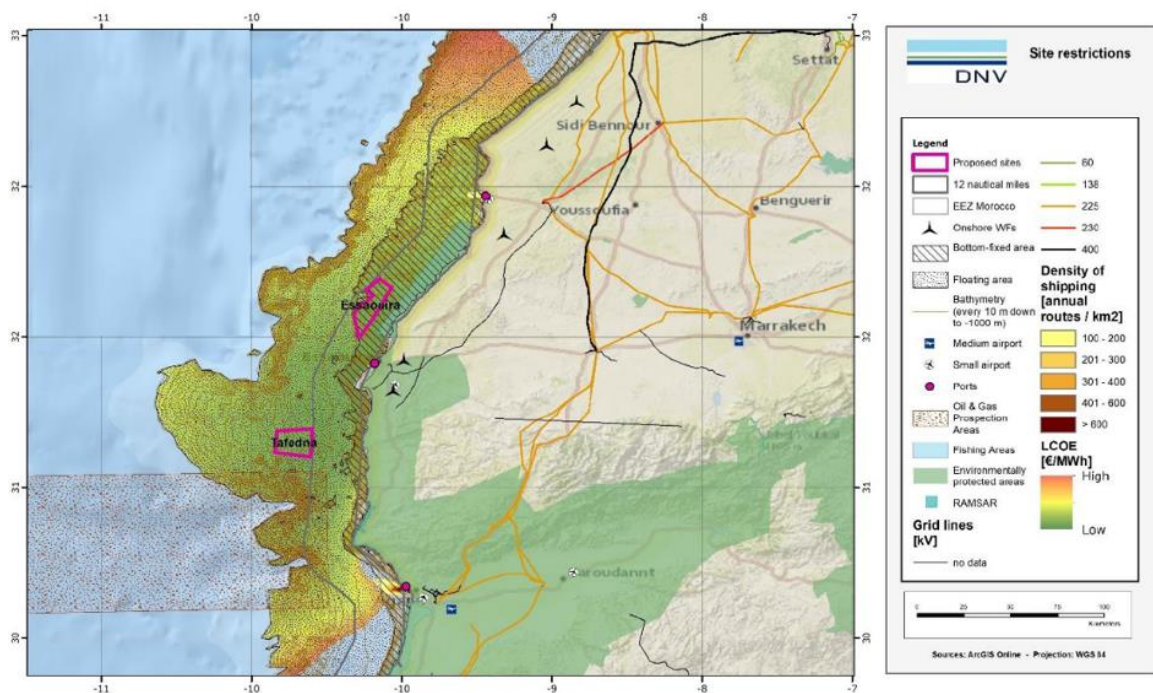
1. SCOPE OF WORK.....	2
2. TASK 1: ENERGY MARKET REVIEW.....	3
3. TASK 2: CONSTRAINTS GAP ANALYSIS & SITE SELECTION	4
4. TASK 3: WIND RESOURCE ASSESSMENT	4
5. TASK 4: SITE CONDITION ASSESSMENT	5
6. TASK 5: CONCEPTUAL DESIGN.....	6
7. TASK 6: PORTS, LOGISTICS AND SUPPLY CHAIN ASSESSMENT	7
8. TASK 7: HIGH-LEVEL PROJECT SCHEDULING ASSESSMENT	7
9. TASK 8: ECONOMIC AND FINANCIAL ANALYSIS	8
10. TASK 9: REGULATORY FRAMEWORK REVIEW	8
11. TASK 10: TECHNICAL RISK ANALYSIS	9
12. TASK 11. INITIAL GROUND MODEL STUDY.....	10
13. TASK 12. UNEXPLODED ORDNANCE (UXO) DESKTOP STUDY.....	10
14. FEASIBILITY STUDY DELIVERABLES.....	12
15. GRID IMPACT STUDY	13
16. GRID REINFORCEMENT STUDY.....	15
17. PORT STUDY.....	15
18. SUPPLY CHAIN STUDY	16
19. REGULATORY FRAMEWORK STUDY.....	17
20. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA).....	19

Annex 1 - Feasibility study

1. Scope of Work

A pre-feasibility study has already been performed by MASEN (conducted by DNV GL)¹ at a regional/national level, with a high-level screening of the potential of the Moroccan coast, including the pre-identified site off the coast of Essaouira. It is the responsibility of the Consultant to review and familiarise itself with the report (which will be made available). This is to ensure that all work conducted is not repeated during the Feasibility Study.

As a result of the pre-feasibility study, a broad Area of Interest (AoI) has been pre-identified off the coast of Essaouira. Initial investigations indicate that the site is approx. 211km² in size, located 10-20km from the coast and has water depths of between 25-65m. The figure below is taken from DNV-GL's pre-feasibility report and illustrates further site details, and initial restrictions² which have been identified.



Source: DNV - prefeasibility report

The next stage to be completed, is conducting a Feasibility Study in order to assess the viability and potential risks associated with it. The Feasibility Study will help determine if the pre-identified location is suitable in terms of wind resource, seabed conditions and environmental impact for a Pilot Offshore Wind Farm (OWF, the Project) of 750 – 1000 MW.

Financial and technical feasibility will also be evaluated to ensure the project is economically viable and feasible from a technical standpoint. Furthermore, the Feasibility Study will help secure funding, permits, and gain stakeholder support by providing a comprehensive analysis of the project's potential challenges, but also its benefits. The overall objective of the Feasibility Study is to ultimately guide decision-making and map out mitigants to potential issues before more advanced studies are performed, and the construction begins.

¹ The prefeasibility study will be shared with the awarded bidder.

² These restrictions are related to protected areas (off/onshore), submarine cabling and pipelines, transmission network, military areas, oil & gas prospecting areas, economic exclusive areas, fishing areas and ports.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 1 – Feasibility study

The Feasibility Study assessment must cover the following tasks, which are further detailed in turn, within this document.

- Task 1: Energy Market Review
- Task 2: Constraints Gap Analysis
- Task 3: Site Selection and Wind Resource Assessment
- Task 4: Site Condition Assessment
- Task 5: Conceptual Design
- Task 6: Ports, Logistics and Supply Chain Assessment
- Task 7: High-Level Project Scheduling Assessment
- Task 8: Economic and Financial Analysis
- Task 9: Regulatory Framework Review
- Task 10: Technical Risk Analysis
- Task 11: Initial Ground model
- Task 12: UXO studies

The Specific ESIA will be undertaken concurrently to the Feasibility Study.

2. Task 1: Energy Market Review

Performing an Energy Market Review is the first step of the Feasibility Study, with the aim to provide an updated overview of the current Moroccan energy market, what developments are planned, and how the Project can be implemented within this landscape. The findings from this task can then be used as inputs for the Request for Qualification (RfQ) and Request for Proposal (RfP) documents during the Project's tendering phase.

During the Energy Market Review, the Consultant shall:

- Identify key aspects of Moroccan energy/electrical market, highlighting the evolution of the national power consumption (demand), and installed/forecasted generation capacities (supply).
- Provide an overview of the energy import and export situation, analysing how it has evolved during at least the past 10 years, and how the forecast is expected to look at a national level during at least the coming 10 years.
- Present an overview of the national energy market organization and identify the key aspects of its structure.
- Assess how future offshore wind projects contribute to the Moroccan energy transition goals.
- Assess the project's competitiveness against other renewable energy sources.
- Identify growth projections for the Moroccan offshore wind energy market.
- Identify key aspects of the permitting process, the associated cost-drivers and provide insights into the resultant timeline implications the permitting may have on the development of the Project.
- Perform a high-level overview of the advantages and disadvantages of offshore wind in comparison to fossil fuel and commercially viable renewable energy options in Morocco. Within this task, the technical and commercial aspects must be analysed, but also the environmental and social aspects (for e.g., assessment of direct/indirect employment possibilities in-country, local training requirements and other benefits).
- The Consultant shall identify the latest advances in terms of technologies and features that the offshore wind turbine manufacturers and offshore substation constructors could offer to protect the wind turbines components and farm infrastructures against climatic conditions.
- Provide a list of the main actors in Wind offshore Technology development (including developers, EPCs, O&Ms, OEM...) indicating for each actor their share in the market and the installed offshore capacities (aggregate and per wind farm capacities) and the installed wind turbines.
- The Consultant shall provide a benchmark of different available contractual mechanisms put in place to handle some specific topics related to the wind offshore development (geotechnical risk, windy days...)
- The Consultant shall further evaluate the general conditions necessary to make offshore wind economically viable in Morocco.
- Cost ranges and a breakdown analysis (CAPEX, OPEX) for a representative OWF of 1GW shall be provided.

Technical Assistance for Offshore Wind Feasibility Study

AA-010864-002

ANNEX 1 – Feasibility study

3. Task 2: Constraints Gap Analysis & Site Selection

The Consultant shall ensure that the constraints mapping performed by DNV GL at the pre-feasibility stage for the selected site is accurate and up to date. The Consultant shall further provide an exhaustive list of hard and soft constraints and propose mitigation measures. This task can include discussions with identified key stakeholders (such as fisheries and associations relating to other marine users etc.).

- Mapping of the exclusion criteria in the area of interest: shipping routes, cruise routes, fishing areas, areas where other maritime industries such as oil and gas operate and areas with other technical constraints, protected areas, territorial waters, military zones, civil aviation, maritime traffic, pipelines, aquaculture, sand and gravel extraction areas, marine archaeology sites, seascapes as public heritage, the location of oil and gas platforms and mining areas,
- Confirm the suitability of the pre-identified site or recommend an alternative location along the coast of Essaouira.
- Provide a benchmark on the need for authorizations for occupation of the offshore site, the rights of passage of cables for connection to the electrical network/ factory.

(1) Deliverables

- Constraints maps in GIS format.
- Report describing the methodology and analysis for the site selection

4. Task 3: Wind Resource Assessment

Conducting a Site Selection and Wind Resource Assessment is crucial to accurately determine the wind conditions at the preselected location and ensure optimal Wind Turbine Generator (WTG) selection, placement, and energy production, while also minimizing project risks and costs. Although this will support in site laying out and design, it will mainly determine the expected energy yield potential which will guide investment decisions and substantiate project financing.

The Consultant shall perform a Site Selection and Wind Resource Assessment with the aim of identifying the site's wind characteristics to be considered in the Project's design parameters. In doing so, the Consultant shall conduct a series of analyses including the following:

- The Consultant shall assess the energy yield and define the long-term wind regime of the site at the optimum selected hub height (to be recommended by the Consultant and agreed upon with MASEN). This selection should consider wind resource characteristics alongside recent WTG technological developments. The assessment will be based on high-resolution mesoscale modelling (at least a 300m resolution and 20 years historical data).
The wind resource assessment shall comprehensively analyse the following site-specific parameters: the mean wind speed, wind direction, turbulence intensity (standard deviation or turbulence intensity for every time step of time series), extreme wind speed, average wind speed over 10 minutes, wind shear, wind gust, seasonal/diurnal variations (at the heights: 10m, 40m, 60m, 80m, 100m, 120 m, 140m, 160m and 200 m), and other climatic conditions specific to the site (humidity, pressure, salinity, waves, temperature etc.). ^{*3}
- Provide the Weibull distribution indicating its key values (A and k for a representative hub height). Additionally, the Consultant shall recommend the suitable WTG IEC class and define key design parameters to be agreed together with MASEN considering WTG technological developments, for a minimum of 3 layouts within the selected site.
- Perform the calculation using recognized industry-standard software based on high-resolution mesoscale modelling (at least a 300m resolution and 20 years historical data) and provide the related results for the 3 layouts mentioned above. The Consultant must be aware that this sub-task may be needing to be re-performed once measured wind data (to be collected during the TA Assignment) becomes available (cf. below).

³ The resource assessment and wind measurement campaign shall be in line with the guidelines and limits outlined by MEASNET, and comply fully with IEC standards, specifically IEC 61400-12. The Service Provider must ensure the engagement of a MEASNET-accredited third party to validate compliance with IEC requirements

Technical Assistance for Offshore Wind Feasibility Study

AA-010864-002

ANNEX 1 – Feasibility study

- Perform an uncertainty and probability of exceedance assessment, including a detailed uncertainty assessment for P50, P75, P90, P95, and P99 over 1-year, 10-year, and 20-year prediction horizons.
- Provide a mesoscale Wind Resource Evaluation Report describing the methodology, data (reanalysis, Digital Terrain Model, roughness, etc.) and models (mesoscale and microscale) used. The source of the data used should be specified in the report and a methodological flowchart relating to the simulation approach used should be included. The Consultant is required to explain the expected accuracy of the time series and the sources of uncertainty.
- Considering the exact location of the target site, recommend an optimal spot for installing the coastal wind observation system. Based on the findings of the TA Assignment, the Consultant will suggest the most appropriate technology, whether it be a meteorological mast (met mast) or LiDAR.

To support the validation of mesoscale wind modelling at the selected site, the Consultant shall as a first step validate any available measured wind data. Neither MASEN nor the Contracting Authority shall provide any wind data to the Consultant.

Additionally, the Consultant shall further plan and execute an onshore wind measurement campaign in close proximity to the selected site to enable the robust definition of long-term energy yields and substructure designs. The onshore wind measurement campaign (met mast or lidar) **shall cover a minimum of 12 months**, comply to international standards and be designed to match the typical WTG hub heights of the planned site. The coastal (onshore) met system (met mast or lidar) and the overall cost of the wind measurement campaign must be included within the Consultant's proposal budget.

The Consultant shall manage the meteorological system permitting, installation, operation, and data analysis reports, including wind resource assessment. MASEN will assist the Consultant in all the processes related to obtaining permits from the authorities relating to the measurement campaign in development phase. All survey data will be fully interpreted, assessed, and reported with a focus on allowing 3rd parties to gain a full understanding of the onsite metocean environment.

5. Task 4: Site Condition Assessment

Metocean Assessment

Understanding the weather, sea conditions, and ocean dynamics is a critical aspect of developing an OWF. Conducting a Metocean Assessment will support in ensuring the Project's design and operational safety, optimizing efficiency, and minimizing risks for construction and operations.

The Consultant shall perform a Metocean Assessment, and a series of analyses including the following:

- Assess sea and swell conditions using publicly available oceanographic datasets (including but not limited to bathymetry, tidal data, wave and current information), available historical data and regional models (like satellite imagery and radar data).
- The Consultant shall acquire 12 months of high quality and reliable wave hindcast data at one or two points within the selected area for the Project. This must also include oceanographic data to support the design of substructures.
- Perform a meteorological and oceanographic desktop analysis necessary to appropriately characterise the metocean conditions in the selected area for the Project.
- Design the data collection campaign to efficiently ensure the incorporation and analysis of existing relevant meteorological and oceanographic data. The measurement campaign must be designed to calibrate existing data where appropriate.

Geoscience Studies

Geoscience Studies are essential to assess site suitability, mitigate geological, geotechnical, and seismic risks and optimise the construction phase. Additionally, performing this task will support in defining the Project design including WTG foundation design and cable routing. Findings will aid in identifying suitable WTG locations, assessing the different WTG foundation options available and ensuring the safety and stability of the structures.

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 1 – Feasibility study**

The Consultant shall perform Geoscience Studies, covering a series of high-level analyses including the following:

- Provide an overview of the local seabed and bathymetry conditions, describe the overall geological evolution and expected geological succession (sub-seafloor soil layers) of the Area of Interest (Aoi).
- Provide seabed features maps and digital elevation models in GIS formats.
- Highlight and describe potential geohazards which could be encountered during the in-field investigations (such as submarine landslides), or which may impact on various foundation design proposals.
- Identify any existing subsurface infrastructure (such as pipelines or cables) that may impact project development.
- Provide an overview of regulatory requirements related to seabed sampling and geotechnical investigations.
- Examine historical seismic data to identify patterns and recurrence intervals of seismic events in the region.
- Evaluate the magnitude and frequency of past earthquakes.
- Produce a high-level overview of the potential UXO threats.
- Provide a preliminary risk assessment based on expected seabed conditions and the expected offshore construction activities.
- Provide a preliminary risk mitigation strategy that covers all activities during the development and construction phase with mechanical seabed interaction.

The Geoscience Studies shall be conducted based on existing, publicly available data, and presented in a final report with all data sources referenced. The final report will contribute to the overall understanding of the site's suitability for offshore wind development, will help optimize the upcoming geophysical site investigations, and potentially shortlist the potential Aoi eligible for the Project.

6. Task 5: Conceptual Design

Preparing a Conceptual Design for an 750-1000 MW OWF provides an initial understanding of the Project's key features, enabling estimations of its production, cost, timelines, and impacts/benefits to be made, thus facilitating decision-making in the design and procurement phases.

During the Conceptual Design, the Consultant shall perform the following:

- Define the maximum capacity of the Area of Interest
- Prepare representative OWF feasibility-level project concepts (a minimum of 2 layouts, or as otherwise agreed with MASEN), including suitable WTG type, WTG foundation concept envelope, cable routing proposal (single line diagram) wind farm capacity, preliminary layouts, yields, cost estimates and sustainability parameters (e.g., embodied carbon, lifecycle assessment calculations etc.).
- Review onshore infrastructure needs (landfall, cable routing, offshore/onshore substation), including the opportunity to provide shared infrastructure options and considerations in case of project expansion.
- Comparison and assessment of the site layouts to provide and recommend an optimal site layout of the Project for MASEN's approval (the "Recommended Plant Configuration") supported by detailed arguments and calculations.
- The Recommended Plant Configuration shall be the layout that allows for maximizing the capacity factor with the minimum Levelised Cost of Energy (LCoE). For that, the analysis shall take into account, at least, the following criteria:
 - o CAPEX and OPEX
 - o Annual Energy Production (AEP) at different Probability of Exceedance (PoE) levels, including an estimation of uncertainties.
 - o Capacity factor
 - o LCoE
 - o Confirmation of environmental constraints (as applicable)

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 1 – Feasibility study**

For sake of clarity, the Consultant is free to use its in-house tools to design the OWF and calculate the AEP for the different site layouts. However, the Consultant shall provide the WindPRO project files for all site layouts. Other software with equivalent capability is acceptable. The technical proposal should explain how they differ from WindPRO.

7. Task 6: Ports, Logistics and Supply Chain Assessment

For an OWF, assessing ports, logistics, and the supply chain is crucial for efficient project execution. In addition to this, for Morocco, such a task will support in framing the roll-out of the industry on a larger scale. Findings from this task will help determine suitable port facilities for WTG component Transport and Installation (T&I) and WTG Operation and Maintenance (O&M), and support in assessing the availability of skilled labour and materials (local/international). Furthermore, investigating the ports, logistics and supply chain at this stage will help identify potential bottlenecks or shortcomings, and support in developing proactive solutions to minimize delays and cost overruns during the procurement and construction phases of the Project.

During the Ports, Logistics and Supply Chain Assessment, the Consultant shall perform the following:

- Undertake a port appraisal based on publicly available information to establish the existing capacity and ability to support offshore wind deployment and the ports' potential for upgrades and expansion (if necessary). This screening is expected to apply a 'traffic light approach' in order to provide a ranking and shortlist of 2 preferred ports for further study.
- Perform an analysis of current in-country capabilities and opportunities for future investment under the different phases; this assessment must take into consideration regional supply chain (Tier 1 and 2 suppliers) trends and opportunities for Morocco to provide materials and services to support future growth, also in regional markets such as Europe or other North African countries.
- Detect potential supply chain hubs along Morocco's coastal region, considering the current infrastructure, location, and maritime capacity (including vessel sizing and availability based on the Project's conceptual design) and provide recommendations as to what the Moroccan industry needs to focus on, and suggest the ideal sequencing of implementation.
- Identify key agencies/contractors available in Morocco that can play an important role in a future offshore wind industry (cable manufactures, civil contractors, vessel providers, etc.), including links to existing oil and gas developers and contractors.
- Identify potential risks in the supply chain, such as geopolitical, transportation, or supplier-related risks.
- Assess the resilience of the supply chain to external disruptions.
- Identify the trends in sustainable and green logistics practices.
- Include recommendations for optimizing the supply chain.

8. Task 7: High-Level Project Scheduling Assessment

Creating a high-level schedule as part of the feasibility study establishes an early-stage roadmap outlining key project milestones, work activities, and timelines. This schedule ensures alignment among project stakeholders, supports in regulatory compliance and the coordination of activities, with the overall goal of preventing delays and associated cost overruns for the Project.

During the High-Level Project Scheduling Assessment, the Consultant shall perform the following:

- Develop a high-level development (inclusive of all necessary studies and surveys), construction and operation schedule for the Project. This schedule must include an indicative and realistic timeframe for bidding, negotiations, construction, and operation. Dependencies between tasks and critical paths must be shown along with possible options to accelerate the timeline, highlighting the main potential constraints, risks and show-stoppers impacting the scheduling identified in the Task 2: Constraints Gap Analysis and Task 10: Technical Risk Analysis.
- Integrate into timeline, duration necessary for obtaining permits and approvals.
- Develop a contingency schedule for identified risks.
- Identify any potential issues or delays in advance.

9. Task 8: Economic and Financial Analysis

Conducting an economic and financial analysis is crucial for assessing the viability of an OWF and attracting international investment. Findings will provide insights into expected costs, and revenue generation potential. Investors and stakeholders can use this analysis to make informed decisions, secure financing, and develop strategies to optimize project profitability and ensure the Project maximises its positive impact, also on a more macro level. It also supports in obtaining the necessary regulatory approvals by demonstrating the Project's economic benefits and long-term environmental and social sustainability credentials.

During the Economic and Financial Analysis, the Consultant shall perform the following tasks:

- Estimate the Capital Expenditure (CAPEX) cost estimate and O&M expenses (or OPEX) estimates providing all assumptions and a detailed breakdown. This assessment must take account the global cost reduction trends, resource potential, country characteristics, regional supply chain capabilities, potential local content requirements and other key factors.
- Perform a comparative assessment of the CAPEX, OPEX, AEP projections and LCOE on the different potential site layouts defined under the Task 5.
- Conduct a financial analysis on the likely bankability of the Project and its ability to attract international financing. This must consider the macro context, off-taker credit worthiness, tariff support and key provisions of the Power Purchase Agreement (PPA) (e.g., payment conditions, termination, deemed generation, force majeure, dispute resolution etc.).
- Analyse the need for concessional finance (including concessional climate finance) to facilitate implementation of the OWF and achieve tariffs that are acceptable to MASEN, the Government of Morocco and consumers.
- Estimate the potential for job (both direct and indirect) creation and direct investment in Morocco's offshore wind industry. The sectors to cover shall include the following, but not limited to: fishing, agriculture, tourism, construction, shipping, etc.
- Assess the potential economic impact of the export of energy to neighbouring countries.
- Provide an assessment of the opportunities at different stages of the industry (including manufacturing, installation, O&M and decommissioning), and provide an overview of the potential role public support could hold in maximizing economic benefits and accelerate cost reductions as the offshore wind industry is rolled-out in Morocco.
- Summarise the role of public financial support in the form of concessional financing and other incentives, including deployment of climate finance, along the respective development phases. This analysis shall draw on the experiences in Europe and other countries to illustrate the kind of financial support that might be required to build a sustainable market, achieve affordable tariffs, and maximize broader economic benefits.
- Consider at a high-level financial contingencies to address potential cost overruns associated with delays.
- Based on the identified risks, assess at a high level the insurance coverage needed for various project phases (construction, operation, and decommissioning).

Draw up a high-level risk register for all relevant risks and potential mitigants (Cf. Task 10: Technical Risk Analysis). Consider coverage for property damage, liability, business interruption, etc. The Consultant will provide a financial model summarising its findings of the above tasks in an XLSX format.

Moroccan tax regime should be considered. MASEN will assist regarding assumptions to be used for the economic and financial analysis.

10. Task 9: Regulatory Framework Review

Analysing the regulatory framework is critical to assess the Project's legal compliance and mapping out the route to be followed for a Project of this scale and nature, and for the wider build-out of the offshore wind sector. Findings from this review will help identify legal requirements, the permitting processes, and environmental regulations. Understanding the regulatory landscape will aid risk mitigation, support in more accurately estimating the permitting timelines, and securing necessary approvals.

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 1 – Feasibility study**

During the Regulatory Framework Review, the Consultant shall perform the following:

- Assess the current and planned offshore permitting, regulatory and consenting framework for offshore wind in Morocco, and provide a gap analysis focusing on suggested improvements to the system. This assessment shall cover the Moroccan framework in itself, but also relate to the context of other jurisdictions (e.g., UK, The Netherlands, Denmark) and international best practices such as Equator Principles, IFC Performance Standards and World Bank and EIB Environmental and Social Standards.
- Identify specific areas and gaps in the onshore permitting, regulatory and consenting framework where work is needed to provide an appropriate framework for offshore wind project development.
- Provide recommendations on legal aspects to be addressed before launching an offshore wind industry in Morocco.
- Assess the legal needs related to grid connection, including interconnectors and PPAs in national and international context.
- Analyse the procurement options available to ensure steady market growth.
- Based on enabling procurement regimes of other jurisdictions, assess the possibilities and suitability of the current/planned regime in terms of procurement and commissioning options in promoting market growth and market stability to gain market confidence.
- Identify and list potential stakeholders, and stakeholder organizations, that must be engaged as part of development of the Project.

11.Task 10: Technical Risk Analysis

A Technical Risk Analysis will enable a full overview of the potential technical challenges and uncertainties to be made, whilst presenting an overview of the associated mitigations to be considered as the development of the Project (and subsequent industry) progresses. The analysis will further aid in securing project financing by providing a comprehensive risk profile to investors/lenders.

During the Technical Risk Analysis, the Consultant shall perform the following:

- Specific to the technology, provide a high-level analysis of all risks associated with the main component technology (WTG, major components, SCADA etc.) during all phases of the Project (engineering, procurement, development, construction, O&M and decommissioning).
- Provide a high-level red flag analysis of the specific risks relating to the Project including:
 - o Site risks: natural risks of the site, soil stability issues, presence of hazardous materials, such as seismic loads, wind, gust, floods, hurricanes, or extreme temperatures.
 - o Component risks: the technical risk study shall consider (i) inputs from WTG manufacturers and (ii) the full lifecycle of the project (engineering, procurement, development, construction, O&M and decommissioning). The components risk study shall also identify the list of the critical parts of the plant and the risks of technical obsolescence of these parts/components.
 - o Export cable and grid connection risks: analyse the impact of the limited capacity of the grid on the installed capacity, the produced energy and the profitability of the project.
 - o Market risks: the market risks study shall highlight the potential risks related to the development of the wind offshore in the Moroccan context including but not limited to authorization obtaining, lack of regulation.
 - o Environmental risks: identify and analyse the impact that the project may have on the environment addressing at minimum the visual impact, embodied carbon, water and soil pollution, disturbance to wildlife, flora, communities and endangered species.
 - o Maintenance and operation risks: the Consultant shall provide the risks, and their mitigations, that may occur during the OWF operation phase considering among other the technology maturity, the site characteristics, safety, spare part availability, logistic constraints etc...
- Provide a risk matrix with an appropriate rating to indicate the criticality index of each risk. The Consultant shall also recommend for each identified risk, the relevant mitigations specifying the

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 1 – Feasibility study

relating period (engineering, development, construction, O&M and decommissioning) as well as the impact that such mitigations may have on the final energy production and/or LCoE.

It must be noted that all the aforementioned tasks should be expected to be supported by targeted stakeholder engagement (e.g. through workshops or other means, as deemed necessary by MASEN) in Morocco.

12. Task 11. Initial Ground Model Study

A critical component of offshore wind development is the seafloor and sub-seabed suitability assessment of the development sites to support in guiding decision-making, ensure compliance with environmental regulations, mitigate any potential negative effects, and promote sustainable development.

12.1 Objectives

The objectives of the Initial Ground Model Study are to describe the local seabed and shallow sub-seafloor conditions and potential geo-hazards within the Area(s) of Interest (Aoi) in order to assess the suitability of an Offshore Wind Farm (OWF) development and optimize the planning for the upcoming site investigations.

12.2 Scope of work

The Initial Ground Model Study is to be built on the findings of the Feasibility Study, and must consider the following:

- › Provide an overview of the local seabed conditions, including sediment types, bedrock characteristics, and any known geological features.
- › Describe and interpret the overall geological evolution of the Aoi.
- › Describe the expected geological succession (sub-seafloor soil layers) within the Aoi and define the initial soil 'zonations'.
- › Highlight and describe potential geohazards and define potential mitigation strategies.
- › Develop a site investigation concept report, to be utilised in determining the focus of the site investigation campaigns.
- › Provide an overview of potentially suitable WTG locations and export cable routing. Assess the different foundation types available at these WTG positions, as well as protection technology for the export cable route.

The study shall be conducted based on existing, publicly available data, and presented in a model and accompanying report with all data sources referenced.

12.3 Deliverables

The results of the study shall be an initial ground model with an accompanying report, including a Geographic Information System (GIS) project and associated geological charts and maps.

The desired GIS software is ArcGIS (an ESRI product) or Quantum GIS (open source), capable of handling shapefile “shp” formats for vector data and “geotiff” formats for raster files. The coordinate systems for the deliverables will be: WGS 84 - EPSG 4326 or Merchich/North Morocco - EPSG 2619. GIS deliverables shall be in SHP for vector files and GEOTIFF for raster files.

13. Task 12. Unexploded Ordnance (UXO) Desktop Study

An important component of the investigations in offshore wind development is a UXO risk assessment and evaluation of potential mitigations.

13.1 Objectives

The objective of the UXO Desktop Study is to map out any potential UXO hazards and describe the potential mitigation actions to reduce the risk to a minimum and acceptable level for the development of a Project.

Technical Assistance for Offshore Wind Feasibility Study

AA-010864-002

ANNEX 1 – Feasibility study

13.2 Scope of Work

The UXO Desktop Study must cover the following:

- › Produce a background study of the potential UXO threats. The study must characterise the UXO polluting activities, when and where the pollution took place and provide a physical characterization of the threat objects.
- › Develop a risk assessment based on expected seabed conditions and the expected offshore construction activities.
- › Develop a risk mitigation strategy that covers all activities during the development and construction phase with mechanical seabed interaction.

13.3 Deliverables

The results of the study shall be a UXO desktop study report which includes detailed analyses, risk assessments, and recommendations, supplemented with digital data to allow for displaying the study results in Geographic Information System (GIS).

Furthermore, a report covering the UXO risk related to grab-sampling during the offshore site investigations must be provided.

All deliverables shall be made available in English.

13.4 Detailed requirements

The requirements described in this section shall apply for the completion of the Scope of Work as described above.

a. Desktop study

In the Area(s) of Interest (Aoi), the Consultant shall clarify any UXO contamination activities. Any identified or potential UXO pollutions must be characterized by the following information:

- The nature of the polluting activity (e.g., bombings, mining activity, shells from marine war activities, firings from land, dumping, etc.).
- The nature of the UXO items subject to the polluting activities. The UXO items need to be physically characterized in terms of e.g., object dimensions, weight, ferromagnetic mass, explosive mass and other information relevant for mitigation.
- When the polluting activity took place.
- Where geographically, the UXO pollution took place. Pollution that is not relevant to the area(s) of investigation should not be addressed in the study.
- An estimate of possible migration and burial of the UXO items based on the anticipated seabed conditions.

It is expected that the Consultant will carry out the investigation of UXO pollutions by means of a search in relevant archives, databases and literature combined with interviews of relevant key persons.

b. Risk assessment

Based on the background study, the Consultant must prepare a detailed assessment of the UXO risk. The risk assessment shall be expressed using a probability x consequence risk matrix.

The risk assessment must be applicable to operations expected in relation to the development and construction of an offshore wind farm such as site investigations, subsea cable installation, construction of platforms and installation of foundations and WTGs.

As such, the risk assessment must cover at least the following activities:

- Performance of boreholes, geotechnical tests with CPTs and vibro-cores and grab sampling.
- Anchoring and jack-up operations.
- Seabed interactions with (pre-lay) grapnel run, dredging, ploughing, trenching, or jetting.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 1 – Feasibility study

- Cable lay operations.
- Protection activities with placement of rock berms and mattresses.

The specific activities subject to the risk assessment shall be confirmed by the Consultant and approved by the Client.

The risk assessment must address the feasibility of splitting the Aol into separate geographical regions that reflect substantial variances in the UXO risk. Factors may involve spatial extent of UXO pollution, water depth, seabed geology and stability of seabed. The assessment should derive a segmentation of the Aol if justified by the analysed factors.

The risk assessment must be adapted to the seabed conditions and address the potential for objects being buried. As such the seabed geology and seabed morphology must be included in the desk study. To allow the present works to progress at this current stage, the Client requests that the study is performed on basis of archive information about the seabed. The specific seabed conditions applicable for this study shall be recommended by the Consultant and approved by the Client.

c. Mitigation strategy

The Consultant must prepare a strategy for mitigating the risks identified in the risk assessment. The mitigation strategy shall be coordinated with the Client and aiming to lower the risk to As Low As Reasonably Practicable (ALARP) within the industry practice for offshore wind.

The mitigation strategy must be feasible to be used by either the Client or future wind farm developers, to price the UXO mitigation activities and to integrate mitigation plans within time schedules for further development and construction.

Minimum UXO threat item

If an UXO survey is included as part of the mitigation strategy, then identifying and describing the UXO item which the Consultant assesses to be the smallest to be considered by the UXO survey in order to prepare for risk sign-off, is required. The minimum UXO threat item must be selected as a balance between the actual risk posed by the UXO item and the efforts required to detect the item by the UXO survey.

The mitigation strategy for the UXO survey must describe the quality parameters applicable for geophysical data acquisition to enable detection of the minimum UXO threat item. The description could provide details of sensor specifications, measurement densities (such as distance between sensors during survey and noise levels for example).

14. Feasibility study deliverables

The Consultant shall provide a complete Feasibility Study report including detailed findings on each of the aforementioned tasks.

The Consultant shall determine whether the project's eligibility to move forward to the detailed design and development phases by providing a Go/No Go Matrix.

Further, regular updates throughout the process shall be provided by the Consultant in the form of Power Point presentations (at a frequency to be determined by MASEN).

The Consultant is also required to provide a note summarizing the content, conclusions, and vigilance points of the study.

The Feasibility study will be updated and adjusted considering:

- Discussions and approval of MASEN and EIB regarding the location, capacity, technology, and other parameters
- Results of complementary studies conducted on the selected project.

Annex 2 - Complementary studies

15. Grid impact study

A critical component of offshore wind development is the management of the power offtake and the impact that it will have on the local and national grid. As part of the proposed Project, basic electrical studies must be performed and potential Points of Connection (PoC) must be identified for each site (if there are multiple) based on proximity to the site and suitable existing grid infrastructure (e.g., substation). In addition to this however, the offtake of the power into the local and national grid must be considered beyond the PoC, and this is the subject of this Terms of Reference (ToR).

It is important to note that ANRE (the national electricity regulatory authority) has published the network code (available at <https://anre.ma/wp-content/uploads/2023/07/CRENT.pdf>). this code sets out the rules and procedures for connecting projects to the network.

All the grid studies need to ensure the proposed windfarm complies with the grid code.

ONEE, as transmission system operator (TSO) will be involved through MASEN particularly for grid aspects. ONEE will share with MASEN and the Consultant the necessary data for grid connexion. MASEN will coordinate interactions between ONEE and the Consultant.

15.1 Objectives

The objective of the Grid Impact Study is to determine not only the impact of the proposed windfarm on the local and national grid, but also to begin the process of specifying the main electrical components for the Offshore Wind Farm (OWF, the Plant) substation, developing Single Line Diagrams (SLDs) for the wind farm up until the PoC and determining whether an offshore substation is required or if an onshore substation may suffice.

In order to perform the grid impact study of the Plant, the Consultant shall take into consideration at least the following aspects:

- The complexity of the local grid, i.e. the structure, voltage and frequency stability, voltage levels, etc.
- The overall pipeline of potential offshore wind as well as other renewable initiatives in the local area.
- The internal electrical configuration of the Plant including transformers.
- The electrical characteristics of the Plant components.
- The grid interconnection configuration of the Plant.
- Plant operation (up to the nominal power) and the relating reactive power needs.
- Plant operation conditions (start-up, low load...).
- Safe and secure operation conditions of the Plant.
- Dumped energy taking into account grid limits and operation conditions.

The grid impact study shall include at least the following aspects:

- Intensity transits.
- Voltage variations in the interconnection sub-stations.
- Voltage plan.
- Short-circuit power level.
- Amplitudes and limit-values of flickers, harmonics and all disturbances that could be generated by the Plant.
- Sizing of the equipment based on the short-circuit power (P_{sc})
- Impact on the national grid protection plan.
- Dynamic network analysis.
- Plant's participation in the electrical faults (single or multiple phase) which affect the grid.

Technical Assistance for Offshore Wind Feasibility Study

AA-010864-002

ANNEX 2 – Complementary studies

- Ability of the Plant to operate in the normal conditions of voltage and frequency of the national grid.
- Ability of the Plant to operate when the grid voltage reaches exceptional values on limited duration (voltage ride-through).
- Fast voltage fluctuations (flickers).
- Harmonics generation.
- Imbalance rate.
- Any phenomena that may occur while coupling or decoupling the Plant to the national grid
- Impact of the Plant on the global reserve.

After analyzing these parameters, the Consultant shall identify the appropriate measures and applicable standards suitable for the Plant in order to meet with the “Office National de l'Electricité et de l'Eau potable” (ONEE) requirements without having any impact on the Grid. Likewise, the Consultant shall identify the appropriate devices and equipment to protect the Grid against any disruptions the Plant may generate.

15.2 Scope of Work

The Grid Impact Study assessment must cover the following:

- SLDs for OWF and substation – this is a conceptual design of the main cables and wiring both on the seabed, to the PoC and within the substation (evaluation of need for offshore vs. near-shore substation to also be conducted). This will enable the developer to determine the configuration of main components and de-risk the design process. The SLDs provided are also required to include the preliminary specifications of the WTG Inner-Array Cabling (IAC), onshore/offshore substation (as may be applicable) and export cable basic specification.
- Initial load flow and short circuit study – this will constitute the basis for determining the power system topology and give rating of the main components within the OWF and at the Onshore Substation (OnSS) close to the PoC. High-level route plans and general arrangement of the Offshore Substation (OSS, where relevant) and OnSS are to be established.
- Power system topography including evacuation capacity – this will be performed in collaboration with ONEE to understand the local and national energy uses and demands and ability to transport the energy from the PoC to the wider grid, as well as reacting to imbalances in the grid.
- Assessment of the electrical components' fulfilment towards grid code requirements.
- Main component specification and sizing for substation and PoC – including the specific requirements of an OnSS and OSS as applicable, transformers for the PoC to the existing grid infrastructure, as well as technology selection (HVAC vs. HVDC).
- A decision matrix on the applicability of an offshore substation versus an onshore substation – including assessment of additional subsea cabling requirements and the possibility of requiring both.

All information related to the electrical aspects will be shared with the awarded bidder once needed, including the SLDs and the High Voltage (HV) electrical characteristics (which will be requested from MASEN to ONEE)

15.3 Deliverables

The Grid Impact Study report must cover the following:

- Recommendations for each scenario and summary of works to be performed, including estimations of cost and time.

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 2 – Complementary studies**

- Identification of hold-points or potential showstoppers, including an overview of the proposed/potential mitigations.
- Conceptual designs and SLDs.
- Main component specification for OnSS and OSS as applicable.

16. Grid Reinforcement Study

A critical component of offshore wind development is the management of the power offtake and the impact that it will have on the local and national grid. As part of the proposed Project, potential Points of Connection (PoC) must be identified for each site (if there are multiple) based on proximity to the site and suitable existing grid infrastructure (e.g., substation).

Furthermore, a grid impact study must be performed, and used as the basis of this further study on the potential upgrades and expansion of the local and national grid to support the Offshore Wind Farm (OWF).

16.1 Objectives

The objective of the Grid Reinforcement Study is to determine in detail the impact of the proposed Project on the local and national grid, and to assess how the PoC, the local grid and the national grid may be expanded or upgraded to support the additional load from the project.

16.2 Scope of Work

The Grid Reinforcement Study assessment must cover the following:

- Evaluate grid reinforcement options available.
- Assess the overall pipeline of potential offshore wind shall be considered as well as other renewable initiatives in the local area. MASEN will assist the Consultant in cooperation with ONEE, as far as possible, to enable the consultant to collect the data available in regards to this pipeline.
- Recommend necessary upgrade projects to the PoC(s) and transmission system (including technology selection – HVAC vs. HVDC).
- Consider the topography of the ground and all the other technical and legal components in defining the optimal option for grid reinforcement.
- Draft technical specifications for tender of reinforcements, considering the grid code compliance requirements.

16.3 Deliverables

The Grid Reinforcement Study report must cover the following:

- Recommendations for each scenario and summary of works to be performed, including estimations of cost and time.
- Identification of hold-points or potential showstoppers, considering also those related to land mobilization and including an overview of the proposed/potential mitigations.
- Conceptual designs and SLDs.
- Draft specifications of reinforcements for tender process to be used for the construction works.

17. Port study

A critical component of offshore wind development is the identification and assessment of potential ports or harbours from which to perform Transport & Installation (T&I) and Operations & Maintenance (O&M) tasks for the Offshore Wind Farm (OWF) sites.

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 2 – Complementary studies****17.1 Objectives**

The objective of the Port Study is to assess each viable port against the detailed criteria (set by the Consultant) for a T&I port and an O&M port, as well as considering short-term suitability for the Project and long-term requirements for the future OWF pipeline in Morocco. This Port Study would build on from the work already conducted in the Feasibility Study, as detailed within this document and focus on the ports already identified in the Feasibility study.

17.2 Scope of Work

The Port Study assessment must cover the following:

- Review of the Ports masterplan and potential for expansion and assess expansion potential of sea-facing port facilities such as port entrance, depth and breakwaters for the short/long-term and T&I/O&M use.
- Provide overview of the current conditions of the ports, areas requiring upgrades/expansions and assess Environmental and Social (E&S) considerations of proposed upgrades.
- If applicable the study shall compare different upgrade/expansion options and their cost impact
- Consult with port owners and stakeholders jointly with Masen to determine the impact of the proposed use of the port and potential risks and mitigations.
- Undertake site visits to the 2 preferred ports including consultations with local stakeholders on topics including capacity factors, ownerships and leasing agreements.
- Detail cost and time estimates for each of the two scenarios, including preliminary timelines to match the requirements of the Project deployment.
- Assess and quantify the local content (including job creation) and the (positive) impact on the local economy both during the process of upgrading the ports for offshore wind activities and during the construction and Operation and Maintenance (O&M) work.
- Provide conceptual designs for the 2 preferred ports, including:
 - › An overview and sketches of upgrades and/or expansions required.
 - › Risk-based assessment and high-level engineering evaluations of upgrades and/or expansions.
 - › Feasibility trade-off between short and long-term requirements.

17.3 Deliverables

The Port Study report should cover the following:

- Recommendations for each scenario and summary of works to be performed, including estimations of cost and time, along with cost benchmarking against similar upgrade projects.
- Identification of hold-points or potential showstoppers, including an overview of the proposed/potential mitigations.
- Conceptual designs.

18. Supply Chain Study

When developing a greenfield Offshore Wind Farm (OWF) project, assessing the supply chain required to support the project is important, and it is this step that is further described within this document.

18.1 Objectives

The objective of the Supply Chain Study is to understand the in-country/regional capabilities and opportunities for future investment to support in the development of an offshore wind industry. Conducting such a study will facilitate optimizing component sourcing, logistics, and ultimately cost efficiency of the Project.

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 2 – Complementary studies****18.2 Scope of Work**

The Supply Chain Study assessment must cover the following:

- Performing a thorough review of the current Moroccan business climate, available professional services for construction and maintenance, manufacturers, equipment and material suppliers and other general service providers during all phases of an Offshore Wind Farm (OWF) project (i.e., cable manufactures, civil contractors, vessel providers etc.).
- Detecting potential supply chain hubs along Morocco's coastal region, considering the current and under-development/construction infrastructure, location and maritime capacity. This task should include an assessment of how the existing manufacturing facilities could be utilized, and whether any modifications may be required.
- Providing recommendations as to what the Moroccan industry needs to focus on as a priority, given the timeline target of implementing the Project (and the wider roll-out of the offshore wind industry thereafter).
- Providing an assessment of the expected supply chain build-up in Morocco and the region and evaluate what opportunities this may have.
- Assessing the opportunities for Morocco to provide materials and services to support future growth in regional markets.

18.3 Deliverables

The Supply Chain Study report must cover the following:

- A comprehensive report summarizing findings, analyses, and recommendations.
- Identification of hold-points or potential showstoppers, including an overview of the proposed/potential mitigations.

19. Regulatory Framework Study

When developing a greenfield Offshore Wind Farm (OWF) project, assessing the regulatory framework in which the project will find itself is key, and it is this step that is further described within this document.

19.1 Objectives

The objective of the Regulatory Framework Study is to increase understanding of potential demand, competition and the applicable legal frameworks in the development of Offshore Wind Farm (OWF) projects. Such a study will support in guiding investment decisions, aid in risk assessment and map-out the route to regulatory compliance.

19.2 Scope of Work

The Regulatory Framework Study assessment must cover the following:

- Assessing the regulatory/legal framework, permitting/consenting procedures and requirements, as well as the general energy market and planning in Morocco.
- Providing recommendations on legal aspects to be addressed before launching of an offshore wind industry.
- Reviewing the existing renewable energy directives and laws for onshore wind and assessing the planned regulatory framework in Morocco for offshore wind.
- Providing a comparison of the regulatory framework versus that of other jurisdictions and international best practices. The comparison will clearly set out advantages and disadvantages of the regulatory framework in other countries. The study will propose a strategy to be implemented, which could look to follow a 'one-stage' market where projects are de-risked and

Technical Assistance for Offshore Wind Feasibility Study**AA-010864-002****ANNEX 2 – Complementary studies**

then tendered (e.g. Germany, Denmark and The Netherlands), a ‘two-stage’ market where a developer would take the de-risking role (e.g. UK, USA and Taiwan), or a hybrid of these options that suits local capabilities and practices but provides a clear route to developing a project whilst ensuring competitive tension.

- Establishing an elaborated gap analysis related to the regulatory framework, permitting, consenting and legal framework for offshore wind, and presenting suggested improvements to the system.
- Assessing the possibilities and suitability of the current regulatory regime in terms of procurement and commissioning options in promoting market growth and market stability in order to gain market confidence.
- Assessment and recommendations on procurement options in terms of facilitating the generation and sharing of knowledge (e.g., developer to government and other market players) in order to establish an on-going competitive development of the offshore wind industry.
- Identification of stakeholders, and stakeholder organizations, that should be engaged at various stages of an offshore wind project’s development. As deemed necessary by the Consultant, holding interviews with key stakeholders and governmental organizations could be proposed.

19.3 Deliverables

The Regulatory Framework Study report must cover the following:

- A comprehensive report summarizing findings, analyses, and recommendations.
- Identification of hold-points or potential showstoppers, including an overview of the proposed/potential mitigations.

Annex 3 - Environmental and Social Impact Assessment (ESIA)

20. Environmental and Social Impact Assessment (ESIA)

20.1 Objectives

A critical component of offshore wind development is the assessment of environmental, social, and economic impacts to support in guiding decision-making, ensure compliance with regulations, mitigate any potential negative effects, and promote sustainable development.

The objective of the ESIA is to provide a comprehensive assessment of Project environmental and social impacts and to describe the proposed measures to minimise, mitigate or offset/ compensate the negative impacts and to enhance and raise the value of the positive ones in a manner relevant and appropriate to the nature and scale of a Project.

The ESIA shall be developed in accordance with national and international standards. In particular, the ESIA should be conducted in collaboration with a certified/accredited firm (Agrément D19), as required by Law 49-17 on environmental assessment (Moroccan Law).

At the national level, the applicable legislation includes, among others:

National standards/laws	Date	Title	Institutions in charge
Law 13-09	11 February 2010	Law related to renewable energies	Ministry of Energy Transition and Sustainable Development
Law 58-15 amending law 13-09	11 February 2016	Law related to renewable energies	Ministry of Energy Transition and Sustainable Development
Law 40-19 amending law 13-09	10 February 2023	Law related to renewable energies	Ministry of Energy Transition and Sustainable Development
Law No. 11-03	12-05-2003	Law relating to the protection and development of the environment	Ministry of Energy Transition and Sustainable Development
Law No. 36-15	06-10-2016	Law relating to water management and its implementing texts	Ministry of Equipment and Water.
Law 12-03 Law 49-17	May 12, 2003 August 08, 2020	Law relating to environmental impact studies and its implementing decrees. Law relating to environmental assessment (published in the official bulletin but only comes into force after the publication of its implementing texts)	Ministry of Energy Transition and Sustainable Development
Law 47-18	February 21, 2019	Law 47-18 on CRIs promulgated by Dahir no. 1-19-18 of 7 jomada II 1440 reforming Regional Investment Centers and creation of Unified Regional Investment Commissions.	CRIs
Law 99-12	Mars 2014	Law related to National Global Charter on the Environment and Sustainable Development	Ministry of Energy Transition and Sustainable Development
Law No. 22-07	July 16, 2010	Law relating to protected areas	Ministry of Energy Transition and Sustainable Development
Decree No. 2-04-553 (of Law No. 10-95)	01-24-2005	Decree relating to spills, flows, discharges, direct or indirect deposits in surface or groundwater	Ministry of Energy Transition and Sustainable Development
Decree No. 2-05-1533	March 16, 2006	Decree relating to on-site sanitation.	The cities
Law 23-12 amending Law 28 00	September 06, 2012	Law relating to solid waste management and its elimination and its implementing texts	Ministry of Energy Transition and Sustainable Development

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

National standards/laws	Date	Title	Institutions in charge
Law 57-18 amending Law 77-15	July 16, 2020	Law prohibiting the manufacture, import, export, marketing and use of plastic bags.	Ministry of Energy Transition and Sustainable Development
Decree No. 2-07-253	July 18, 2008	Decree classifying waste and establishing the list of hazardous waste	Ministry of Energy Transition and Sustainable Development
Dahir n° 1-03-194 (law 65-99)	September 11, 2003	Law relating to the labor code	Ministry of Economic Inclusion, Small Business, Employment and Skills
Law No. 103.13	February 22, 2018	Law on combating violence against women	Ministry of Solidarity, Social Integration and Family
Dahir n° 1-15-85 (law n°113-14)	July 7, 2015	Dahir promulgating the organic law relating to municipalities	Ministry of the Interior
Law 13-03	May 12, 2003	Law on air quality	Ministry of Energy Transition and Sustainable Development
Law 81-12	October 15, 2015	Law relating to coastline	Ministry of Energy Transition and Sustainable Development
Law 29-05	July 21, 2011	Law relating to the protection of wild flora and fauna species and to the control of their commerce	National Water and Forestry Agency (ANEF)

The ESIA shall be developed in accordance with the EIB Environmental and Social Standards (2022). The ESIA shall follow the recommendations made within the World Bank Group EHS Guidelines for Wind Energy (2015). It shall also enable the EIB to determine the project's alignment with the EU Taxonomy, in particular for (i) electricity generation from wind power and (ii) transmission and distribution of electricity (for transmission component). The ESIA shall therefore be informed by the EU Taxonomy Regulation (2018), the Commission Delegated Regulation of 4.6.2021, and the Annex I to the Commission Delegated Regulation of 4.6.2021 establishing the technical screening criteria for climate change mitigation.

The ESIA report shall facilitate the environmental consenting process of the Government of Morocco and the EIB's decision.

The main outcome of the ESIA is an Environmental and Social Management Plan (ESMP⁴) that clearly identifies the management measures (mitigation and monitoring) that need to be put in place in the construction and operation phases of the project. Other specific plans will be developed hereinafter.

20.2 Scope of Work

The ESIA shall comprise the construction, operation and decommissioning phases of the following Project activities:

- Offshore windfarm including subsea cables and substation.
- Onshore landing and associated structures, e.g., substation.
- Overhead transmission line.
- Point of connection to the grid.
- Transportation and storage of materials and equipment.
- Operational base

20.3 ESIA Process Activities

Tenderers shall present an ESIA process that reflects the following main activities:

- Inception phase.
- Stakeholder identification and engagement including a public consultation
- Scoping exercise.
- Baseline studies.

⁴ The ESMP may include the implementation of other plans such as Resettlement Action Plan (if physical - on the grid connection ROW - or economic resettlement - inc. on use of OWF site), Stakeholder Engagement Plan (including Grievance Redress Mechanism), compensation and mitigation of environmental impacts, etc.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

- Impact assessment and mitigation reporting.
- Development of Environmental and Social Management plan.

20.4 Inception phase

This phase involves planning, scoping, and defining the parameters that will guide the entire ESIA study. The inception report serves as a comprehensive document that communicates the initial plans, methodologies, and timelines for the ESIA study to the client. It outlines how the assessment will be conducted and what the client can expect in terms of deliverables and outcomes. This phase is particularly important for ensuring alignment between the client's expectations and the methodologies outlined in the detailed deliverables.

The client may use the inception report to guide decision-making and project steering. It serves as a roadmap for the ESIA study, allowing the client to make informed decisions based on the proposed methodologies and approaches.

The inception report must be approved by the client before undertaking the detailed assessments.

20.5 Stakeholder Identification and Engagement

Stakeholder identification involves the determination of the various individuals or groups who may have an interest in the project or who may affect or be affected by the project. The approach used by the ESIA Consultant shall be consistent with EIB E&S Standard 2 on Stakeholder Engagement.

Stakeholder identification process includes:

- Identifying individuals, groups or local communities that will be affected by the project, positively or negatively and directly or indirectly, including those who are disadvantaged or vulnerable.
- Categorize the identified stakeholders into groups such as local communities, businesses, environmental groups, etc.
- Classify stakeholders based on their level of influence, interest, and impact on the project.
- Identifying broader stakeholders who may be able to influence the outcome of the project because of their knowledge about affected communities or political influence over them.
- Identifying legitimate stakeholder representatives.
- Mapping the impact zones by placing the affected groups and communities with a geographic area and conduct overlay analysis to visualize the intersection of stakeholder locations with project impact zones.
- Stakeholder mapping will identify the presence of individuals or groups within the project Aol who are particularly vulnerable or disadvantaged and who could experience adverse impacts from the proposed project more severely than others. This would assist the Client to define or refine the project's Area of Influence (Aol).
- Assess the needs, expectations, and concerns of each group of stakeholders.

The ESIA should assess potential impacts, including differentiated impacts, on these individuals and groups and propose specific (and if necessary separate) measures in consultation with them to ensure that potential impacts and risks to them are appropriately avoided, mitigated or compensated. The ESIA will include a description of stakeholder engagement activities and outcomes from those engagements undertaken at various stages throughout the process.

Stakeholder engagement will take place:

- In conjunction with the scoping exercise, and,
- To present the findings of the ESIA process, based on the draft final ESIA.

Note that the consultation process⁵ may take 3 months to comply with EIB and national standards, after which the draft final ESIA shall be finalised taking into account any comments received during the consultation. The ESIA Consultant shall include their approach for the consultation process in their proposal.

⁵

https://www.eib.org/attachments/documents/guidance_note_on_stakeholder_engagement_in_eib_operations_en.pdf

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

A Stakeholder Engagement Plan (SEP) shall be developed early in the ESIA process and will describe the following engagement activities:

- Selecting communication channels based on the preferences of the stakeholders.
- Outlining communication protocols and frequency
- Engagement aimed at seeking opinions and inputs from identified stakeholders on the proposed Project and its likely environmental and social aspects and impacts, including cumulative impacts and feasible alternatives.
- Engagement to assist in identification of disadvantaged or vulnerable groups.
- Engagement with appropriate stakeholders to contribute to the collection of baseline data on, for example, land use and livelihoods, biodiversity and ecosystem services and cultural heritage.
- Setting up a formal conflict resolution process to handle disagreements.
- Developing an emergency response process as well as focal points for information from the project owner side and the stakeholders involved in the project.
- Seeking stakeholder comments and input to the ESIA through a public consultation period and responding to comments and recommendations received.
- Where a Resettlement Action Plan (RAP) is required, then the engagement process shall be integrated to meet the needs for resettlement planning in addition to the broader engagement objectives.

The format to be used in the SEP is provided in Annex 3 of this document.

As part of the consultation process, a public consultation meeting should be carried out by the Consultant (in the presence of the Client) in order to present the project to the concerned population and stakeholders and collect their opinions and comments on the project and its related impacts.

- The main steps of this public consultation meeting are as follows: Gathering of all the concerned stakeholders by meaningful means (publication of an open invitation in national newspapers (in French and Arabic) and specific invitation in collaboration with local authorities; local advertising of invitation to public consultation; provision of free transport to the consultation location for the population);
- Note that every effort should be taken to include broad representation from all stakeholder groups with particular attention to include women and potentially marginalized or vulnerable groups.
- Preparation of all necessary documents for the meeting (ex: PPT presentation, NTS, flyer. etc)
- Presentation of the Project during the meeting with adapted and appropriate languages and in an appropriate manner (photomontage in local language);
- Organization of a debate session to answer the questions raised by people attending the meeting; and
- Drafting of a report including all Q&As and signed attendance sheet.

It should be noted that the final ESIA validated by MASEN and EIB that will be presented during the Public Consultation meeting

20.6 Scoping Exercise

The scoping process shall be informed by the outcomes of any project screening conducted by the national authorities and EIB (as applicable). The purpose of the scoping exercise is to identify key sensitivities and those activities with the potential to contribute to, or cause, significant effects to the environment and social receptors and resources.

The key scoping objectives are to:

- Define Project scope and boundaries.
- Identify significant potential impacts.
- Obtain stakeholder views through public consultation.
- Align on the baseline studies/field work needed to ensure that the ESIA process and associated reporting output are focussed on key issues and are fit for purpose.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

The scoping process uses available information on the project location and design, known baseline characteristics, results of any early stakeholder engagement and the details of the applicable environmental and social standards. The scoping phase should, where possible, be based on:

- Project design data including alternative sites, design configurations and construction methods.
- Initial baseline description from scoping phase baseline studies (usually desktop and field surveys) including identification of potential environmental and social receptors known trends in the status of receptors that may be affected by the project (sea and land).
- Stakeholder engagement to understand the views of stakeholders on key issues and obtain information to identify sensitive receptors. The initial stakeholder engagement may inform a Stakeholder Engagement Plan developed to manage and coordinate engagement with project affected people and other stakeholders throughout the ESIA process.

The scoping of the ESIA should:

- Determine the project Aol and Study Area.
- Using the EIB E&S Standards as the point of departure, identify the type of environmental and social impacts to be assessed and reported in the ESIA Report, and in doing so “scope out” “insignificant impacts” that do not warrant further consideration at the ESIA stage (a clear justification for assigning impacts as insignificant should be documented in the scoping report).
- Identify and prioritise missing information/ information needs, for example baseline data gaps.
- Determine assessment techniques e.g., predictive modelling requirements.

The project Aol should be determined in the ESIA scoping phase and include consideration of areas affected by:

- Direct and indirect impacts. For indirect impacts, the focus is specifically on impacts affecting biodiversity and ecosystem services upon which affected communities’ livelihoods are dependent.
- Impacts from unplanned, but predictable events caused by the project that may occur later or at different locations e.g., population influx, loss of containment of hazardous materials.
- 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 effects arising from the project and other existing, planned or reasonably defined developments at the time the scoping and impact assessment process is conducted.

Note that the study area is not necessarily the same as an Aol. The study area is a geographical defined area for specific studies to determine or verify receptor sensitivity and or the potential for and extent/intensity of impacts. The study areas vary depending on receptor and impact type and are defined in the scoping phase.

The boundaries of a study area are established based on the specific criteria for impact assessment, considering both spatial and thematic factors.

20.7 Baseline Studies

The baseline studies provide a comprehensive understanding of the existing environmental and social conditions in and around the project area before any project activities commence. Baseline studies serve as a benchmark against which potential impacts can be assessed, and they play a fundamental role in shaping the overall impact assessment process.

Indeed, these studies allow to identify and quantify existing conditions to establish a reference point for impact prediction and assessment.

Components of Baseline Studies:

- Physical Environment: Geology and topography, Climate, water resources (Hydrology, water quality), etc
- Ecological systems: Flora and fauna
- Social Environment: Demographics, Cultural heritage, Land use
- Infrastructure and Utilities: Transportation networks, schools, hospitals
- Economic Activities: Fishing, Agriculture, shipping traffic

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

Tenderers shall propose baseline studies and cost them in the tender based on the anticipated content of the ESIA report. They shall be verified based on the scoping exercise in coordination with the national authorities and the EIB.

20.8 Impact Assessment and Mitigation Reporting

20.8.1 Non-Technical Summary

A Non-Technical Summary (NTS) of the ESIA should be developed as a part of the ESIA public disclosure process and included in the ESIA report. The summary should communicate the key outcomes of the ESIA to Project stakeholders in a way that is readily understood, in the relevant local language/s and concise. The Non-technical Summary will focus on describing the key environmental and social impacts and how negative impacts are proposed to be mitigated and how positive impacts will be enhanced. The NTS will be written in French and in Arabic.

20.8.2 Project Description and Analysis of Alternatives

The ESIA should define the project with a focus on those aspects of the project that have the potential for environmental and social impacts. The project description in the ESIA should be written in non-technical language and use maps and concept diagrams to present locations, layouts and process flows in a way that can be readily understood by a broad non-technical audience. The description of the project should include a description of Associated Facilities.

The ESIA will include an examination of technically and financially feasible alternatives to the source of such impacts, and documentation of the rationale for selecting the particular course of action proposed. The analysis should consider alternative project locations, designs, operational processes or alternative ways of dealing with environmental and social impacts. The analysis of alternatives should also consider options that may improve resource efficiency such as the use of design alternatives that reduce Greenhouse Gas (GHG) emissions or usage of resources. This analysis should be undertaken in consultation with Client design and engineering teams who would consider such alternatives during early Project scoping/feasibility studies.

20.8.3 Impact Assessment

Potential impacts and risks should be assessed and documented for each key stage of the project cycle including design and planning, construction, operations, and decommissioning or closure and for their short-term, long-term, and cumulative contexts, keeping in mind the dynamic and shifting nature of these impacts and risks. The impact assessment process should include robust and consistently applied methods for:

- › Predicting impacts, which includes:
 - › Distinguishing between positive and negative impacts
 - › Spatial and Temporal Considerations - evaluating where and when the impacts are likely to occur, considering the spatial distribution of impacts within the project area and the seasonal variations and the timing of project activities.
 - › Determining impact magnitude - considering impact type (positive or negative), spatial extent, duration, frequency, likelihood and reversibility (whether an impact is reversible or irreversible i.e., resulting in a permanent impact).
 - › Receptor sensitivity - based on the degree to which a receptor is resilient to change, and the value attributed to the receptor by stakeholders or applicable regulations/policies.
- › Impact evaluation – where the impact magnitude and receptor sensitivity results are combined to determine the significance of the effect by employing numerical values or indicators to express impact severity.

The assessment of impacts should include unplanned events which are reasonably foreseeable but are not planned to occur as part of the project. These may include major emergencies, incidents or accidents such as industrial accidents that result in fatalities and/or major injuries or release of hazardous materials that pose a major public health risk. Impacts arising from unplanned events

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

should be assessed using systematic and consistently applied methods that consider both the incident likelihood and the consequence of the event.

Assessment of unplanned events can be integrated into the impact assessment process through:

- List potential unplanned events that may occur during the project lifecycle.
- Categorize events based on their nature, source, and potential impacts.
- Distinguish between minor incidents and major emergencies.
- Describe the characteristics and consequences of each unplanned event.
- Evaluate the potential for environmental, social, and economic harm.
- Implementing preventive measures to reduce the likelihood of unplanned events and their potential consequences is a crucial part of the study. This takes place through:
 - Engaging the stakeholders to share information about identified risks.
 - Identifying the key components and activities of the project that could pose risks.
 - Using mathematical models or simulations to estimate risk levels.
 - Prioritizing risks based on their likelihood and severity.
 - Analyzing interactions and dependencies between different risks.
- Establishing monitoring systems to detect early signs of potential hazards.

Cumulative Effects

Cumulative effects are those that arise due to an impact from the project interacting with another activity to create additional impact. Cumulative impacts should consider existing, planned and /or reasonable anticipated future projects. Impacts from Associated Facilities should be considered in the assessment of cumulative effects.

The Cumulative Effects are to be assessed by:

- Developing scenarios that simulate the cumulative effects of the proposed project in conjunction with other projects.
- Using environmental models to predict cumulative effects on ecosystems, water quality, air quality, etc.
- Defining indicators and metrics to measure cumulative effects on specific environmental and social parameters.

Preventive measures must be considered by:

- Examining interactions and synergies between the proposed project and other projects.
- Implementing management strategies to reduce or prevent adverse cumulative effects.

Trans-boundary Impacts

The impact assessment component should identify transboundary impacts that extend to multiple countries, beyond the host country of the project, but are not global in nature. Examples include air pollution extending to multiple countries, use or pollution of international waterways, and transboundary epidemic disease transmission. The ESIA should describe any requirement for notification by the project to the affected country or counties if it is determined that:

- The project entails activities that may cause adverse effects through air pollution or abstraction of water from or pollution of international waterways.
- The affected countries and the host country have entered into any agreements or arrangements or have established any institutional framework regarding the potentially affected airshed, waterway, sub-surface water, or other resources.
- There are unresolved differences between the affected and host countries regarding the potentially affected resource, and the likelihood of a resolution is not imminent.

Residual impacts

The ESIA will have to indicate the nature and the importance of the potential residual impacts generated by the Project after the implementation of the mitigation measures.

Climate Change

The impact assessment should include a climate change risk and vulnerability assessment of the project (physical and transition risks). The depth and nature of the Climate Change Risk Assessment will depend on the nature of risks identified, including their materiality and severity.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

Archaeology and cultural heritage

The impact assessment should also include an archaeological survey which will identify the potential cultural and archaeological heritage of the study area in order to effectively assess potential impacts on material cultural resources, and more specifically any archaeological remains that may be present in the study area.

20.8.4 Impact Mitigation

As part of the ESIA process, when negative impacts are identified (the effects of which cannot be managed via design controls /incorporated mitigation), additional mitigation measures will be developed (including avoiding, management and monitoring actions).

The process of identifying design controls and mitigation measures shall follow the sequence of the mitigation hierarchy. Efforts should be firstly applied to avoid or prevent, then minimise or reduce adverse effects through the application of the design controls. Where trade-offs between avoidance and mitigation/compensation are considered, these should be documented. The assessment should consider economic, financial, environmental, and social costs and benefits and identify to which parties these accrue.

In the case where a Project component causes damage to the environment or local communities in an irreversible way, the Consultant will have to conduct a complementary analysis of the environmental and social impacts taking into consideration the irreversible character of such damage and identify measures to compensate/offset such irreversible losses.

These efforts are supplemented by additional design controls and mitigation measures during project construction, operation, and decommissioning. For positive impacts, enhancement measures to increase the benefits generated by the project may also be developed.

The mitigation measures in the ESIA should consider the extent to which the Client can mitigate or influence impacts from Associated Facilities or other third party operated facilities that result in significant cumulative impacts. Mitigation actions may include applying influence on third party operated facilities within the project AoI, with the intent of aligning those project's environmental and social plans with the Applicable Standards. For example, the Client project's mitigation actions may include environmental and social provisions aligned with the Applicable Standards in the contract for services for a third party operated port facilities upgrade that is identified as an Associated Facility.

20.9 Deliverables

The deliverables resulting from the study shall be the following:

- **Inception report** forms a critical document that outlines the scope, objectives, methodology, and initial considerations for conducting the assessment for the proposed project for approval by the client before undertaking the Assignment that will lead to the preparation of the Scoping Report and subsequently the ESIA Report. The Inception Report indicate the commencement of the contracted works as well as to map out the whole ESIA process up to the delivery of the final report.
- **Scoping Study** including results of scoping consultation and asset Inventory/Detailed Measurement Survey and Socioeconomic Survey the land concerned by the project activities and outlining the methodologies that will be used in the subsequent ESIA.
- **Environmental and Social Impact Assessment (ESIA)** (in French, EIES (Etude d'Impact Environnemental et Social) according to national and international laws.
- The table of contents for the ESIA Report is provided at the end of this Annex. The ESIA shall reflect the requirements in the EIB E&S Standards (Standard 1).
- The ESIA Consultant will develop a draft ESIA report for the project and submit it to EIB/MASEN for review. Thereafter the Consultant will submit the ESIA to MASEN and EIB for comments and no objection. Based on any comments, the ESIA Consultant will then finalise the draft final ESIA report. In addition, the Consultant will provide the draft final ESIA report translated in French and related documents (PSSE "Programme de Surveillance et de Suivi Environnemental", Descriptive sheet and NTS both in French and in Arabic, and any other technical documents that may be requested by the Moroccan authorities) subject

Technical Assistance for Offshore Wind Feasibility Study

AA-010864-002

ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

to national approval/validation. MASEN will be responsible to conduct the national validation process by Moroccan authorities. This draft final ESIA report will be used as the basis for the final public consultation, the duration of which is 3 months.

- After the public consultation, the ESIA Consultant will develop the final ESIA, considering any comments received.
- **Stakeholder engagement plan** including a comprehensive list of identified stakeholders, their interests and needs, grievance management system and implementation of public inquiries (national law) and public consultation meetings (BEI standards requirements).
- **Environmental and Social Management Plan (ESMP):**

An Environmental and Social Management Plan (ESMP) is a comprehensive document that outlines the strategies and measures to be implemented for the effective management of environmental and social risks associated with a project. The purpose of an ESMP is to ensure that the project is developed and operated in a manner that minimizes adverse impacts on the environment and communities, complies with relevant regulations and standards, and promotes sustainable practices. The Environmental and Social Management Plan shall include the following plans, among others:

- Environmental and social monitoring plan
- Climate change risk management and carbon footprint
- Occupational health and safety plan (OHSP), including awareness raising against HIV/AIDS.
- Industrial/technological risk management plan and emergency preparedness.
- Industrial solid waste management including hazardous waste.
- Biodiversity action plan (if triggered)
- Resettlement and compensation Action plan (RCAP) /livelihood restoration plan (if triggered)
- Summary report regarding a documentary review and field investigation on the possible presence of anti-boat mines in the project footprint
- Social inclusion and gender integration plans
- Human resources management plan (including local employment and personnel management)
- Mitigation plan relating to trafficking in persons risks.
- Employee grievance management plan
- Chance find procedure
- **Non-Technical Summary (NTS):** A concise, accessible summary of the ESIA report, written in a language that is understandable to the general public which provides key findings, potential impacts, and proposed mitigation or enhancement measures. The NTS will be provided in French and Arabic.
- **Environmental Monitoring Program = Programme de Surveillance et de Suivi Environnemental (PSSE) :** including all mitigation measures to be implemented throughout the project life cycle (construction, operation and decommissioning), in accordance with the model provided by the Ministry of Energy transition and Sustainable Development. (PSSE is the equivalent of the ESMP in national format)
- **Descriptive Sheet:** highlighting the main features of the project. The Descriptive Sheet will be provided in French and Arabic.
- **Geographic Information System (GIS) files**

GIS files as a part of ESIA deliverables, could help in organizing, analysing, and presenting spatial data relevant to the ESIA such as:

- Layers representing baseline environmental conditions, topography, and underwater topography

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

- Polygons representing the Area of Influence and Study Area
- Polygons representing areas with specific environmental and social constraints, such as sensitive habitats, marine protected areas, or restricted zones.
- Polygon layers representing the distribution of marine species.
- Lines representing existing shipping lanes, navigation routes, and areas with high ship traffic.

All deliverables shall be made available in English and French. The NTS deliverable will be translated into Arabic.

All deliverables will be subject to a 2-week review process by the EIB and MASEN, after which comments will be submitted to the Consultant. The Consultant then has two weeks to respond to and integrate the comments into the final versions of the deliverables.

20.10 Expert Requirements

The Consultant shall put forward a team of appropriately experienced and capable experts to develop the ESIA efficiently and comprehensively to meet the national and EIB requirements.

It is assumed that the team will need to consist of international ESIA experts and / or national environmental and social consultants. International ESIA consultants are those consultancies with specific expertise and experience in the development of ESIA that supports Projects financed by EIB and other international financial institutions. National consultants shall ensure the national environmental assessment if/as required under law for Project permitting and approvals. National consultants are often best placed to undertake primary baseline studies and stakeholder engagement activities for ESIA.

The experts shall have demonstrated experience in the following areas:

- Land acquisition, resettlement and livelihoods impact.
- Biodiversity specialists where critical habitats may be affected.
- Social engagement specialists with experience in free prior and informed consent where indigenous peoples may be encountered.
- Climate change risk consultants with experience in climate risk identification (physical and transitional) and adaptation measures.
- Specialists who can undertake monitoring and modelling of air quality, noise, hydrology or hydrogeology for the assessment of specific emissions and discharges.
- Human health/occupational health risks specialists where impacts to community or worker health are identified.
- Waste management and product life cycle assessment specialists.
- Topographic surveyor engineer if not provided for by other studies relating to the project.

These experts should have relevant and recognized experience in similar projects.

20.11 National and international validation of the ESIA

The Consultant is required to be available and support the client in the entire Environmental and Social Impact Assessment validation process as much as needed, exclusively concerning the deliverables outlined in Chapter 20.9, until the closure date of the TA Assignment.

The validation of the ESIA involves a formal process of review and approval by relevant authorities and institutions to ensure that the study meets the required standards and regulations.

Both national and international levels of validation play crucial roles in the approval process. Here's an overview of the validation process at both levels:

a. International validation

The whole ESIA is submitted to the EIB for review and approval as part of the funding application process. The review includes an assessment of the project's potential environmental and social impacts, the effectiveness of proposed mitigation measures, and compliance with the EIB's standards.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ANNEX 3 - Environmental and Social Impact Assessment (ESIA)

Throughout the validation process, it might be needed to address concerns and incorporate feedback from international institutions into the various documents constituting the ESIA.

The Consultant will be required to adjust the content of the deliverables, in the appropriate format, until they are definitively approved by the client, EIB and relevant institutions and have obtained their no objection, as applicable.

b. National validation (Environmental Acceptability process)

The ESIA report is submitted by MASEN to the national environmental authorities responsible for environmental regulation and oversight namely the unified regional investment commission "CRUI". These authorities review the ESIA to ensure compliance with national environmental laws, regulations, and standards.

The Environmental Acceptability (national validation) process may involve coordination with other relevant government agencies, authorities, or ministries. Public consultation and participation are integral to the Environmental Acceptability process. The Environmental Acceptability process may result in conditional approval, where certain requirements or conditions need to be met before the project can proceed. In such cases, the Consultant may be required to adjust the content of the ESIA report to ensure that the specified conditions are adequately addressed.

MASEN will be responsible for the Environmental Acceptability process. The Consultant is involved⁶ in the process as an advisory member of the CRUI, chaired by the Government Authority in Charge of Sustainable Development, providing expertise to ensure that the ESIA report meets all regulatory requirements and that any conditions for approval are properly addressed. The Environmental Acceptability process is completed when the CRUI issues the "decision d'acceptabilité environnementale" (the Final Environmental Acceptability Certificate).

⁶ Please refer to [Loi-49-17 relative à l'évaluation environnementale](#), in particular Articles 7, 13 and 15.

ESIA ToR Annexes

A. Table of Contents for the ESIA Report

- 1 Executive summary
- 2 A description of the applicable environmental and social legal framework, including a gap analysis indicating the differences between the relevant national legislation and EIB standards, as applicable.
- 3 The description of the country and/or sector context relevant to the specific social-related risks at project level, such as human rights, labour conditions, enabling environment for public participation, gender-based and other types of violence and harassment, including risks of reprisals, socio-economic inequalities including those related to gender, as well as any impacts and risks specific to conflict-affected and fragile situations.
- 4 The description of the project, including in particular:
 - 4.1 the location, site, design, size.
 - 4.2 the physical characteristics of the project (including any demolition or land-use requirements).
 - 4.3 the technical capacity and the characteristics of the operational phase.
 - 4.4 an estimate of any residues, emissions and quantities and type of waste produced.
- 5 The description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) which are relevant to the proposed project, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental and social effects.
- 6 The description of the baseline scenario against which the project's impacts are assessed. This should be based on adequate and appropriate quantitative and qualitative, primary and secondary data on the relevant aspects.
- 7 The description of the environmental, climate and social aspects⁷ likely to be affected by the proposed project, including comprehensive and context-specific identification and analysis of people and communities likely to be affected, as well as other relevant stakeholders, paying particular attention to persons and/or groups that are vulnerable, marginalised, discriminated against or excluded on the basis of their socio-economic characteristics.
- 8 Assessment of the likely significant environmental and social effects of the proposed project (also taking into account the outcomes of any complementary assessments and/or focused studies as referred to in paragraphs 9 and 10, if applicable), resulting from inter alia:
 - 8.1 the construction and existence of the project.
 - 8.2 the use of natural resources, considering as far as possible the sustainable availability of these resources.
 - 8.3 the technologies and substances used.
 - 8.4 the emissions of pollutants, noise, vibration, light, heat and radiation, and the disposal and recovery of waste.

⁷ The list is not exhaustive and may include: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydro morphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects and landscape, and, whenever possible, sex-disaggregated socio-economic data.

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ESIA ToR Annexes

- 8.5 the risks to human health, well-being, persons and/or groups that are vulnerable, marginalised, discriminated against or excluded on the basis of their socio-economic characteristics, cultural heritage or the environment.
- 8.6 the cumulation of effects with other projects and/or activities.
- 9 The description should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-, medium- and long-term, permanent and temporary, positive and negative effects of the project.
 - 10 A description of the forecasting methods or evidence used to identify and assess the significant environmental, climate and social effects, including details of difficulties related to technical deficiencies or lack of knowledge, as well as the main uncertainties involved.
 - 11 A description and justification of the measures planned to prevent, reduce and where possible, compensate/remedy any significant environmental, climate and/or social adverse effects as outlined in the ESMP.
 - 12 A description of the expected significant environmental, climate and/or social adverse effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned, including those caused by climate change. Where appropriate, a description of the measures planned to prevent such risks, as well as measures regarding preparedness for and response to emergencies (as required by Standards 3 and 9), should be included in the ESMP.
 - 13 A description of opportunities and measures to further enhance the environmental and social (including human rights) performance of the project and increase its positive impacts.
 - 14 Arrangements for monitoring and evaluation of the effectiveness of impact management and any positive enhancement action, where applicable, measured as part of the overall environmental and social management plan and system, which should include appropriate qualitative and quantitative indicators and draw on feedback from both internal and external sources, including affected stakeholders.
 - 15 A summary of the stakeholder engagement process undertaken with different groups of affected men and women and/or communities, as well as other relevant stakeholders, including its results and how those results have been incorporated/taken into account or otherwise addressed (full stakeholder engagement process is described in Standard 2).
 - 16 Arrangements for grievance mechanisms and the steps that will be taken to ensure effective access to remedy for affected stakeholders; such mechanisms should reflect prevailing social norms and cultural context to ensure that they are culturally and socially appropriate to and inclusive of the intended users, in line with the relevant requirements set out in Standard 2.
 - 17 A non-technical summary (or equivalent) of the information provided under the above-mentioned headings.

B. Minimum information to be included in the ESMP

- 1 The mitigation and/or compensatory/remedial measures, reflecting the mitigation hierarchy and determining the monitoring arrangements. Where stakeholders are identified as disadvantaged, excluded, vulnerable or marginalised (as defined in Standard 7), the ESMP/equivalent shall include differentiated measures so that adverse impacts do not fall disproportionately on them, and they are not disadvantaged in sharing any development benefits and opportunities resulting from the project.
- 2 Opportunities to achieve additional environmental and social benefits of the project including, when applicable, community development programmes noting clearly that any positive contributions shall not be used to offset any adverse environmental and social effects.
- 3 Procedures to: (i) evaluate the effectiveness of the mitigation and/or compensatory/remedial measures, including appropriate qualitative and quantitative indicators (disaggregated by sex, age and any other relevant socio-economic characteristics, wherever possible), targets or

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ESIA ToR Annexes

acceptance criteria; and (ii) identify any hitherto unforeseen adverse effects that draw on feedback from both internal and external sources, including affected stakeholders. In addition, the promoter may use third parties, such as independent experts, local communities or NGOs, to complement or verify its own monitoring information.

- 4 Allocation of resources (including financial), responsibilities and timeframe for its implementation and monitoring. As appropriate, the ESMP or equivalent shall recognise and incorporate the role of relevant actions and events controlled by third parties to address identified risks and impacts. It may also include provisions for the involvement of impacted men and women, communities and other stakeholders as appropriate, e.g. as mentioned above.

C. Table of Contents for Stakeholder Engagement Plan

(from EIB E&S Handbook – p179)

1.0 Introduction

1.1 Project Description

1.2 Public Consultation and Project Design, Construction and Operations

1.3 Project Purpose and Objectives

1.4 Total Project Cost and Associated Financiers and Lenders

2.0 Public Consultation Regulations and Requirements

2.1 Local Regulations and Requirements

2.2 International Best Practice

3.0 Previous Public Consultation and Disclosure Activities

- Summarize all public consultation and information disclosure activities to date. This should include the types of information disseminated, the locations and dates of meetings, descriptions of those individuals/groups involved.

- An overview of issues discussed, how they were responded to and how they were communicated back to the concerned publics.

4.0 Stakeholders

- Provide an inventory of key stakeholder groups who will be informed and consulted about the project.

- Account for inter- and intra- social dynamics across all stakeholders, identifying under-represented and vulnerable groups.

5.0 Stakeholder Engagement Plan

5.1 Goals of the Plan

5.2 Methods for Information Dissemination and Public Consultation

5.3 Information Disclosure and Public Consultation

5.3.1 Issues Scoping

5.3.2 ESIA Review

5.3.3 Construction and Operations

6.0 Schedule and Timetable

- Provide a schedule detailing when public consultation and information disclosure will occur, with which stakeholder groups, at what stages of the project's process/project cycle, and through what formats.

7.0 Resources and Responsibilities

Technical Assistance for Offshore Wind Feasibility Study
AA-010864-002
ESIA ToR Annexes

- Indicate budgets allocated to the realisation of all activities foreseen in the Plan
- Indicate management and expert staff devoted to, and responsible for, the public consultation and disclosure programme.

8.0 Grievance Mechanism

- Describe how the operation-affected people can bring their concerns to the project authority and how they will be considered and addressed.

9.0 Monitoring and Reporting

- Identify where and when the results of public consultation and information disclosure will be reported. This should include at a minimum reporting on the results of consultations at the draft ESIA stage and annual monitoring reports.