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NCEA recommendations on ToR for the preparation of EIAs for offshore wind energy projects

Colombia



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Advisory Report by the NCEA

Title	NCEA recommendations on ToR for the preparation of EIAs for offshore wind energy projects (DRAFT)
To	The National Authority for Environmental Licenses (ANLA)
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Request by	ANLA
Date	15 April 2024
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1. Introduction

1.1 The request by ANLA

The Netherlands Commission for Environmental Assessment (NCEA) has recently signed an MoU with the National Agency for Environmental Licensing (ANLA) in Colombia. One of the areas of cooperation is on ESIA for offshore wind energy. In particular, ANLA requested the NCEA to comment on a Terms of Reference (ToR) document for the preparation of the environmental impact studies –EIAs¹– for offshore wind energy projects. Colombia has some experience with onshore wind energy, but none so far with offshore wind energy development.

This ToR has been developed by ANLA and others and is currently undergoing public consultation. The document will finally be approved by the Colombian Ministry of Environment and Sustainable Development (MADS). The ToR are meant to guide offshore wind energy project developers when they have to undertake EIAs, but serves at the same time as a framework for ANLA and regional environmental authorities when they have to review the quality of EIAs submitted to them for environmental licensing and approval.

1.2 Approach taken by the NCEA

The NCEA has approached 3 experts (see colophon for their names and expertise) to contribute to reviewing the quality of the aforementioned ToR document. The experts were asked to give their opinion on the following questions:

- Is the required information complete and sufficiently tailored to EIA for offshore wind projects? Is information missing?
- The pitfall of Generic ToR is that they tend to be overly complete. Can some parts could be skipped or put in an annex? If so, which information is superfluous or too detailed?
- A large part of the ToR is dedicated to the required baseline information, and less so to impact assessment and Environmental (and Social) Management Plans etc. These texts are more generic. Can suggestions be provided to make these parts more tailored to offshore wind energy?
- The ToR are both on offshore activities and associated onshore activities. Is this indeed recommended practice or should there be two separate ToR documents?
- The document contains many cross-references to other documents (a.o. MGEPEA, Metodología General para la Elaboración de Estudios Ambientales), is this helpful or would another approach in terms of readability and easy guidance be advisable?

The findings are listed in Chapter 2 (in random order) and are at the same time a summary of the main findings of the expert group. The recommendations on each finding are included in the boxes. In Chapter 3 provides some miscellaneous additional recommendations.

In the ToR document itself (separate document) the detailed observations of the experts can be found in track change mode. This may help ANLA to clarify the background of the main findings. This is a draft advisory report and will be discussed with ANLA on April 18th 2024.

¹ Colombia uses EIA as an abbreviation, whereas the NCEA generally uses ESIA.

2. Main findings and recommendations

2.1 Purpose and target audience of the ToR

The information provided appears extensive, potentially overshadowing the primary purpose of a ToR, which is to clearly delineate the objectives, scope, deliverables, and responsibilities of drafting the EIA. Moreover, the intended audience of this ToR is unclear.

Recommendation: Include a concise articulation of the ToR's objectives, as these parameters guide the expected outcome of the EIA process and report. If the ToR is meant to serve as a guiding document, an introductory section would be helpful, outlining how to interpret and apply its contents effectively, especially in the context of the permitting process. This introduction could refer to relevant Colombian EIA regulations and include an annex with a template providing clear guidelines.

2.2 Structure and approach of the ToR

It is unclear whether there is a process in place that allows alignment of the project developer's planned EIA approach/focus and the expectations of the relevant agencies/regulatory bodies. This is considered necessary to minimize project permit risks, ensure efficient budget use and timeline planning which is a prerequisite to meet the ambitious Offshore Wind Power Roadmap². In other countries this is done via a scoping process that results in an agreed scoping report that includes a ToR that is tailored to a particular project.

Recommendation: Apply a scoping approach to streamline the EIA, reduce volume and focus on the essential topics, i.e. significant impacts and their receptors (see also next paragraph). In addition, it is advised to streamline the structure of the ToR:

- in line with the EIA process flow (project description, baseline, impact assessment and mitigation, Environmental and Social Management Plan) to avoid repetition throughout the chapters and
- to clearly distinguish between requirements for offshore and/or onshore.

2.3 Focus of baseline information in the ToR

The ToR is not sufficiently tailored to the risks and likely impacts of an offshore wind development project. Requesting a large amount of baseline information, including costly and time consuming primary data collection (surveys), has little value to the impact assessment. If the ToR excessively prioritizes the baseline information, it risks transforming into primarily a baseline study rather than a comprehensive EIA. It would be more efficient to focus on the abiotic and biotic elements that can have a potential impact on the construction and operation (and removal) of an offshore wind energy project, or can be impacted by the project. In Annex 1, an example is included of a list of elements used in Dutch EIA reports for wind farms at the North Sea (2023). A distinction can be made as follows:

- What is required for the EIA? → focus only on the potential negative and positive impacts.

² Offshore wind roadmap for Colombia, final report, Ministry of Energy and World Bank

- What is required for the Permit request? → this includes technical details of the wind turbines.
- What is required for the developer to construct an offshore wind energy project? → the developer has interest in a geological survey to design the foundation of the wind farm (i.e. how deep the foundation has to go into the sea bottom). Or, the developer needs a wind survey of e.g., a year on a specific location. These are examples of factors to calculate the business case and are required for the Final Investment Decision (FID). These elements may be also relevant for the authorities to have certainty that the wind farm is built in a secure way and is economically viable, but are not needed as part of the EIA. This distinction will reduce the efforts for the EIA and reduce the risk for the developer and thus costs.

Recommendation: Make the ToR more risk-based, i.e. consider the likely impacts and request only data that will support the impact assessment. Data required for project design and permit request should not be requested as part of the EIA. Unless described elsewhere, the needs for additional permits and the respective requirements should be provided in an appendix. This may include permitting requirements for surveys (geotechnical, geophysical, environmental, etc.), discharge permits or other that are not included within the EIA permit.

2.4 Mandatory content versus ‘nice to have’ information

While certain sections of the ToR are highly prescriptive, others remain more generalized. For instance, specifying adherence to the Colombian Technical Standard NTC 1000 Meteorology for recording physical magnitudes in the EIA is appropriate. However, critical elements such as objectives and methodology retain a degree of ambiguity. Given the specific focus on offshore wind energy projects and specific zones of interest, greater specificity regarding objectives, methodology, and other essential aspects would be expected.

While there is a significant emphasis on obtaining primary data, this information should ideally be readily available to facilitate the EIA process. For instance, mentioned baseline data should be regularly updated and accessible through a designated data portal. Additionally, sensitivity maps or models can be considered to establish benchmarks for identifying potential risk levels and making informed decisions regarding aspects to be avoided, reduced, mitigated, or offset.

Recommendation: Clearly distinguish between mandatory requirements and other content to ensure the permit risk is minimized for a potential project developer. Mandatory requirements may e.g., include the need for modelling of certain parameters (e.g. noise), environmental baseline survey requirements, primary data formats for input into a national public database/data portal, maximum validity of existing primary baseline data that can be used or the provision of printed maps versus a GIS.

2.5 (Missing) link with offshore wind roadmap report

Considering that Colombia has already formulated an Offshore Wind Roadmap outlining two scenarios, along with zones of interest and environmental and social considerations, it would have been expected for this ToR, to make extensive reference to this Roadmap as a guiding

framework. Furthermore, querying the EIA to evaluate how the project aligns with these scenarios, particularly the "High" scenario, which represents an achievable yet accelerated growth in offshore wind development, would have been appropriate. Similarly, given that the zones of interest for offshore wind have already been identified (see annex 2), it would have been expected for the ToR to refer to the identification of Areas of Special Environmental Interest (AEIA) and the Maritime Spatial Plan (MSP) developed for these areas. Utilizing these resources would provide a robust guidance for making recommendations on how to avoid, reduce, mitigate, or offset potential impacts.

Recommendation: Align the ToR with this offshore wind roadmap as well as with other potentially available tools for environmental management such as a Strategic Environmental Assessment (SEA), (marine) spatial plans or regional development plans, as applicable.

2.6 Definition of ‘project’: offshore and/or associated onshore activities

The ToR currently lacks a clear definition of what is considered to be ‘the project’. It is helpful to use the definition of the International Finance Corporation (IFC)³ in this respect to ensure impacts of all project components and activities related to a particular development are considered and the related impacts are identified and managed adequately. In case a development is sliced up into various EIAs (e.g. offshore and onshore) it is important that an assessment of the combined impacts is also undertaken.

In addition, although the zone of interest currently is near the northern coast of Colombia, it could be important to acknowledge that it could potentially shift to areas near Colombian islands close to Nicaragua in the future (see annex 3). Consequently, the establishment of onshore infrastructure may be located in Nicaragua requiring another EIA in accordance with Nicaraguan laws and regulations.

Recommendation: Encompass all aspects of the project in the ToR for the EIA, not solely focusing on the offshore wind turbines. Several other developments are necessary to facilitate the construction and operation of these wind farms, and these should be duly considered in the EIA, including an assessment of the combined impacts.

2.7 Definition of ‘environment’

The current ToR appears weighted towards environmental issues, however, it is important that social receptors (e.g. indigenous/afro-descendent peoples, vulnerable or marginalized groups, livelihoods, physical or economic displacement/resettlement or cultural heritage) are equally considered in the EIA.

Recommendation: Provide a holistic definition of ‘environment’ to avoid ambiguity regarding social issues (unless this is clearly specified in the MGEPEA).

³ <https://www.ifc.org/en/insights-reports/2015/publications-policy-ehs-wind-energy>

2.8 Cumulative impact assessment

A requirement for a cumulative impact assessment is currently missing, to ensure that cumulative impacts from the development as well as third party projects in the Area of Influence (Aoi (e.g. other wind farms, oil and gas projects, etc.) are considered. There seems for instance to be significant activity by the oil industry in the same region.

Recommendation: Include a cumulative impact assessment requirement and/or refer to information as available in SEA and/or marine spatial planning documents (see also 2.1.5)

2.9 Assessing alternatives

Colombian EIA regulations (Decree 1076) distinguish between DAA (Environmental Diagnosis of Alternatives) and EIA (Environmental Impact Assessment). Chapter 3 (p. 191) of the decree mentions that a DAA may be required (ANLA decides on a case-by-case basis) for projects for exploration and use of alternative energy sources with installed capacity above 10 MW. However, this ToR document is only applicable for EIAs, which is why there is no reference to alternative options in the text. However, including alternative options is still relevant.

Recommendation: Include a requirement for assessing alternatives (siting/routing, timing outside sensitive periods, layout, grid infrastructure, technology and material choices, etc.) to ensure all options for impact minimization have been evaluated and choices have been made based on documented evidence.

2.10 Climate risk and impact assessment

The topic of climate risk assessment is not considered in the ToR.

Recommendation: Include a climate change risk assessment to ensure adherence to best practice. This should come in addition to the assessment of natural hazards and the respective considerations during design. It is recommended to discuss natural hazards in one chapter.

2.11 Chapters in the ToR on impact assessment and ESMP

Detail regarding the methodology for the impact assessment is lacking as well as on norms and standards.

Recommendation: Clearly define the parameters to be considered (magnitude of impact, extent, duration, reversibility as well as probability for accidental events) and introduce a requirement for scoring to ensure a transparent assessment process for impact significance. Provide norms (based on scientific international research) on what is acceptable or not (what is significant and what is not). For instance, information on noise impact of hammering on mammals and on other ecological impacts is internationally available. Identification of

mitigation measures should be an integral part of the impact assessment with pre- and post-mitigation impact ranking and the identification of residual impacts.

There is no information on the required Environmental and Social Management System (ESMS). This is the key tool to manage identified impacts and the associated mitigation measures and provides the flexibility for continual improvement. In addition, the current requirements of the ToR for contingency planning, decommissioning and investment planning are not sufficient to manage the anticipated impacts.

Recommendation: Include an ESMS framework (defining responsibilities and laying out the overall structure of the ESMS and its interfaces with e.g. health and safety or local content) and the associated management plans (plans for waste management plan, stakeholder engagement, community health and safety, contingency planning etc. as applicable) for the construction phase and operations. Define when the ESMS and its plans will be available for review, i.e. as part of the EIA submission or at a later stage. Regarding the requirements for biodiversity offsetting, ensure that offsetting is understood as the last step in the mitigation hierarchy, emphasis needs to be on impact avoidance as far as feasible.

3. Miscellaneous recommendations

3.1 Management of Change process

The introduction of a transparent 'Management of Change' (MoC) process is recommended for cases when technical information is updated after EIA submission. This is considered necessary to avoid having to delay the EIA submission to a late stage (therefore increasing project permitting risk and reducing the ability of the EIA to influence design) so that all relevant information on the project description is available. The need for either notification, submission of an addendum or EIA update should be defined for cases when updated design or technical information becomes available that has the potential to change the conclusions of the impact assessment.

3.2 Cross references to other documents

The ToR should only make a single reference to the MGEPEA (currently 38 times), as there is no need to duplicate the same paragraph under multiple sections, which unnecessarily lengthens the document. This recommendation is also applicable to other references. The MGEPEA is an important document with almost 230 pages. A thorough cross-check is needed to avoid duplication, gaps or discrepancies. The ToR for instance do not provide guidance on stakeholder engagement and its modalities (when, what, where, how and how often, with whom). Time did not allow the experts to perform this cross-check, and therefore this remains to be a task for ANLA to make sure this is adequately covered in the MGEPEA.

3.3 Key principles

Key principles likely to be of relevance for Colombia such as the polluter pays principle, the application of Best Available Technique (BAT), adherence to the mitigation hierarchy, etc. should also be clearly stated. Although offshore wind is a relatively new sector, it currently has a 30 to 40 year history and the developments in the last 10 years are enormous including reduction of, in particular, ecological impacts.

In addition, it is recommended to include consideration of lessons learnt elsewhere (e.g. the long-term experience from North Sea offshore wind projects) and international best practice such as the IFC/World Bank Group guidance documents, the Equator Principles, WHO guidance, ILO conventions, global offshore wind health and safety organization or BAT reference documents (BREFS).

3.4 International treaties

It is normally the responsibility of the project applicant to identify the international conventions signed or ratified by the host nation as part of the chapter on the legislative framework. It is not recommended to provide an exhaustive list in the ToR as this may change over time and would require frequent updating. In Annex 4 a (non-exhaustive) overview is provided of such international treaties that may be relevant.

Annex 1: Example: EIA criteria in the Netherlands for offshore wind farms at the North Sea

Aspects	Judging criteria	Method of impact assessment
Morfology and Hydrodynamica		
	Effect on waves	Qualitative analysis based on available quantitative information wave patterns
	effect on water movement (water level/flow)	Qualitative analysis based on available quantitative information on the flow of foundations
	Effect on water depth and soil forms	Qualitative analysis based on available quantitative data
	Effect on seabed composition	Qualitative analysis
	effect on turbidity and water quality (including the effects of cathodic protection)	
	Effect on sediment transport	
	Effect on coastal defences	
Birds and bats		
Construction/removal of wind farm		
Birds (all groups)	Disruption of the construction/removal of the foundation	Number of disturbed birds per km2
	Disruption due to increased shipping	Number of disturbed birds per km2
Operation of the wind farm		
Local seabirds	Collision risk	Number of bird casualties
	Barrier effect	Qualitative effect of overflying
	Disruption by wind turbines	Number of disturbed birds per km2
	Disruption due to wind farm maintenance	Number of disturbed birds per km2
	habitat loss/alteration foraging opportunities	Habitat loss in km2 and translation by number of casualties
Breeding colony birds	Collision risk	Number of bird casualties
	Barrier effect	Qualitative effect of overflying
	habitat loss/alteration foraging opportunities	Loss of habitat in km2
	Disruption by wind turbines	Number of disturbed birds

Aspects	Judging criteria	Method of impact assessment
	Disruption due to wind farm maintenance	Number of disturbed birds per km ²
Migratory birds	Collision risk	Number of bird casualties
	Barrier effect	Qualitative effect of overflying
Bats	Collision risk/barotrauma	Number of bat casualties
Marine life		
Construction/Removal of wind farm		
Benthic animals and fish	Soil disturbance	Disturbed area in km ²
	disturbance, due to noise and vibrations during the laying of foundations and geophysical research	Disturbed area in km ²
Marine mammals	disturbance, barrier effect, habitat loss, change in foraging opportunities due to noise and vibration during foundation construction and geophysical surveys	Disturbed area in km ² Number of animals disturbed (porpoise disturbance days) Effect on population
	physical impairment (temporary hearing damage)	Number of animals affected
Operation of wind farm		
Benthic animals and fish	Disturbance due to noise and vibration turbines	Qualitative effect
	Disturbance due to noise and vibration of shipping (maintenance)	Qualitative effect
	Habitat loss due to the presence of turbines	surface that is lost
	electromagnetic radiation	Qualitative effect
	absence of seabed disturbing activities (fishing)	Qualitative effect on the number of species and biomass
	add hard substrate	Qualitative effect on the number of species and biomass
Marine mammals	Disturbance due to noise and vibration turbines	Qualitative effect
	Disturbance due to noise and vibration of shipping (maintenance)	Qualitative effect
	barrier effect, habitat loss	Qualitative effect
	electromagnetic radiation	Qualitative effect
Nature and other marine functions		

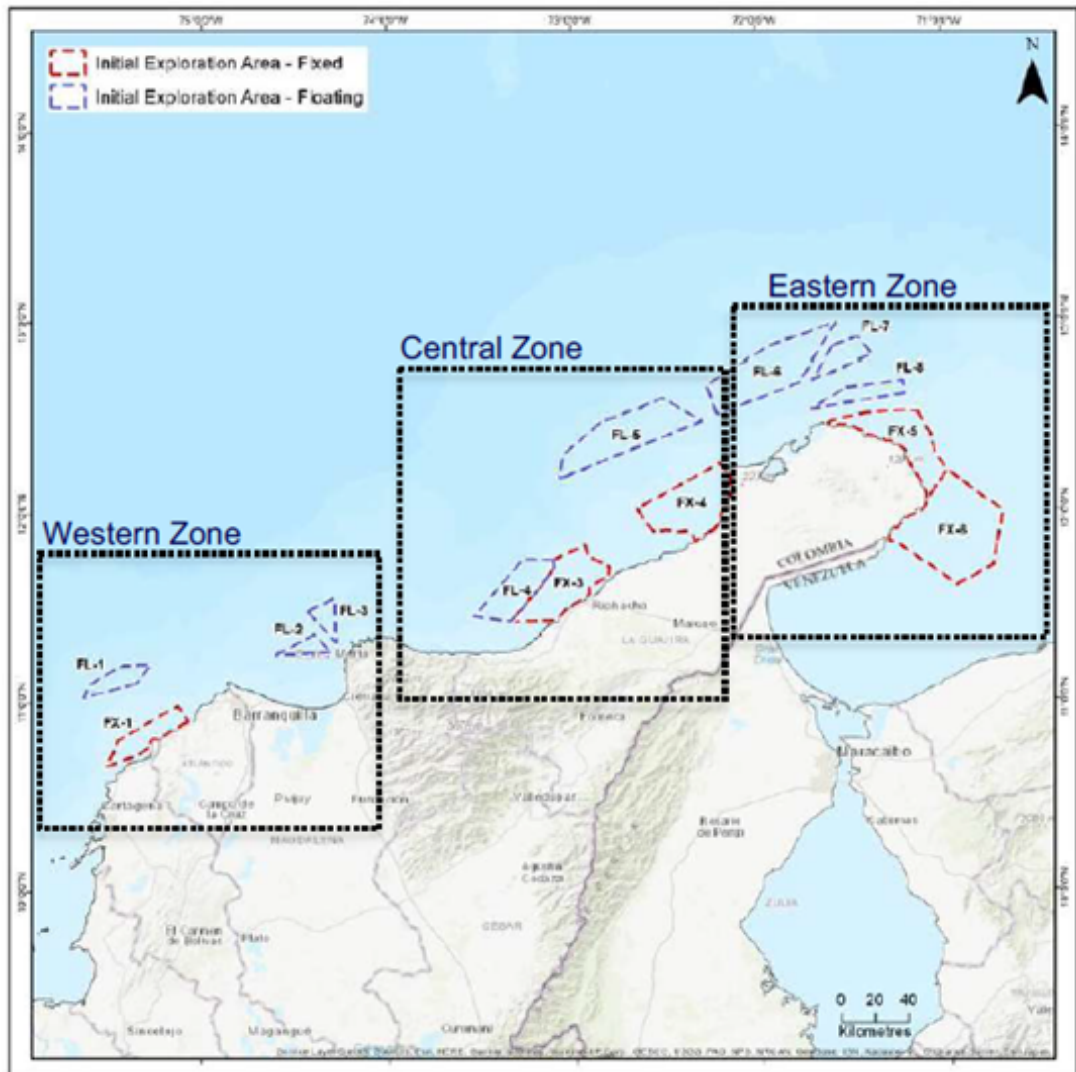
Aspects	Judging criteria	Method of impact assessment
Natura 2000 sites	effects on habitat types of Natura 2000 sites (including impacts due to nitrogen deposition)	qualitative and quantitative impact assessment by means of Aerius calculations based on the conservation objectives
	effects on types of Natura 2000 sites	qualitative and quantitative impact assessment on the basis of the conservation objectives, as described for species groups
Flora and fauna and other natural values	effects on protected flora and fauna (as referred to in Article 7 of the Offshore Wind Energy Act) and other nature and environmental values (as protected by international frameworks such as the Marine Strategy Framework Directive, OSPAR Conventions and ASCOBANS)	qualitative and quantitative Impact assessment as described for species groups
Shipping & Safety ⁴	Risk of collision and propulsion route-related and non-route-related shipping	quantitatively determine the number of possible collisions or drives per year based on the SAMSON model
	Consequential damage from collision or propulsion route-related and non-route-related shipping	determine damage in the form of oil released on the basis of a quantitative risk analysis with the SAMSON model and on the basis of studies that have already been carried out and published.
	Fallback options for crossing shipping	Qualitative analysis of possible visual obstructions by wind turbines during a meeting. Considerations are also used in previous wind farm studies.
Landscape and visibility from the coast	Effects on landscape and visibility from the coast	quantitatively (% of the time the park is visible) based on: <ul style="list-style-type: none"> - the properties of the object, - the curvature of the earth, - the vision of the human eye and - the meteorological conditions
Other Usage Functions		
fishery	effects on current fisheries and the fishing techniques used in them	qualitatively and quantitatively based on, among other things, the available area of fishing

⁴ The basic principle is that there is no passage through the wind farm area.

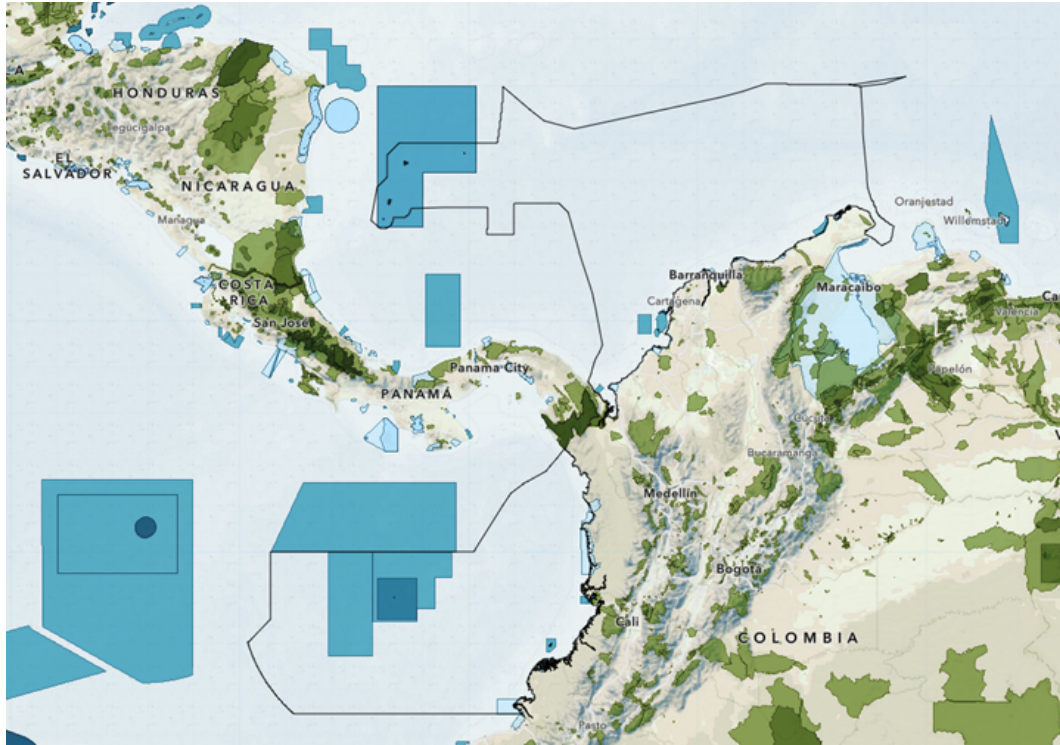
Aspects	Judging criteria	Method of impact assessment
		grounds, economic damage, reduced catch yields and effects on detours
oil and gas extraction	Effects on Mining	Qualitatively, among other things, in relation to helicopter accessibility platforms, and the exploitation of fields present in the subsurface. Effects on possible future use of platforms for hydrogen production and CO2 storage, for example, are also assessed
aviation	Effects on aviation and air traffic safety	Qualitatively in relation to airspace classes, beacons and lighting, communication, navigation or surveillance equipment (CNS), Search and Rescue and Helicopter Main Routes
sand, gravel and shell extraction	Effects on sand, gravel and shell extraction	qualitatively based on location locations for extraction
Dredging material	Restrictions on dredging landfill areas	Qualitative based on location of dredging landfill areas
Ship, shore and aviation radar	Effects on ship's and aviation radar	qualitatively taking into account shading and bouncing
Cables and pipes	Effects on cables and pipes	qualitatively based on the location of cables and pipelines
telecommunications	Disruption of cable connections and beam paths	Quantitative based on location of beam paths
Military activities and ammunition dump areas	Effects on space use by the Ministry of Defence (Air Force, Navy) due to the presence of training grounds and ammunition dumping areas above and at sea	qualitative based on location Training grounds and ammunition dumping areas
	Risk of unexploded ordnance	qualitatively based on the presence of NGE
Recreation and tourism	Accessibility of recreational boating routes	qualitatively based on location of recreational routes
	Effects on Coastal Tourism	qualitative based on distance from coast
Cultural history and archaeology	effects on archaeological values, such as mineral resources, shipwrecks, drowned landscapes	qualitative based on the presence of archaeological values

Aspects	Judging criteria	Method of impact assessment
shellfish farming and aquaculture	Effects on mussel seed capture installations and seaweed cultivation	Qualitative based on location of mussel seed capture installations
Existing wind farms	Effects of electricity yield on existing wind farms (wind capture)	Quantitative analysis
Electricity yield and avoided emissions	Electricity production	quantitative in kWh/year
	Payback period energy construction	Quantitative in months
	CO ₂ emission reduction	Quantitative in tonnes/year
	NO _x emission reduction	Quantitative in tonnes/year
	SO ₂ Emission Reduction	Quantitative in tonnes/year
climate	Impact on climate change	quantitative CO ₂ emission reduction in tonnes/year

Annex 2: Zones of Interest – Overview map



Annex 3: Colombia Exclusive Economic Zones and protected areas



Annex 4: Overview of potential relevant treaties

United Nations Convention on the Law of the Sea (UNCLOS): Colombia is a signatory to UNCLOS, which establishes legal frameworks for the use and management of the world's oceans, including rights and responsibilities of coastal states.

International Convention for the Prevention of Pollution from Ships (MARPOL): MARPOL is a crucial international treaty aimed at preventing marine pollution from ships. Colombia is a party to MARPOL.

Convention on Biological Diversity (CBD): Colombia is a party to the CBD, which addresses the conservation of biological diversity and sustainable use of its components, including marine biodiversity.

Convention on the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention): While Colombia is not located in the North-East Atlantic, it has expressed interest in marine environmental protection and may engage with OSPAR Convention mechanisms.

Regional Fisheries Management Organizations (RFMOs): Colombia may be a member or cooperate with RFMOs responsible for managing fisheries in specific regions, such as the Inter-American Tropical Tuna Commission (IATTC) or the International Commission for the Conservation of Atlantic Tunas (ICCAT).

Agreements with Neighboring Countries: Colombia may have bilateral or regional agreements with neighboring countries related to marine management, including issues such as maritime boundaries, fisheries management, and environmental protection.

Global Biodiversity Framework (GBF): The Global Biodiversity Framework is a post-2020 global biodiversity framework under the Convention on Biological Diversity. While not a treaty itself, it sets out goals and targets for biodiversity conservation, which may influence Colombia's marine management policies.