Final Report for the Regional Assessment of Offshore Wind Development in Newfoundland and Labrador: Executive Summary

Contents

1 Introduction

1.1 Summary

On March 23, 2023, the Governments of Canada and Newfoundland and Labrador launched the Regional Assessment of Offshore Wind Development in Newfoundland and Labrador (the Regional Assessment). The federal and provincial Ministers released the Agreement and Terms of Reference between the Governments of Canada and Newfoundland and Labrador to conduct the Regional Assessment (the Agreement) and appointed the Committee responsible for conducting the assessment. The Committee conducted the Regional Assessment in a phased manner, in accordance with the Agreement.

It is not within the scope of this Regional Assessment to determine if there is a need for offshore wind development in Newfoundland and Labrador; the Committee based its approach on the government's message that offshore wind is necessary. Consequently, the Committee did not evaluate the necessity of offshore wind energy. However, over the course of this Regional Assessment, participants[1] questioned the need for and economic viability of offshore wind in this province.

The purpose of this Regional Assessment is:

> to provide information, knowledge and analysis regarding future offshore wind development activities in the Study Area and their potential effects, in order to inform and improve future planning, licencing and impact assessment processes for these activities in a way that helps protect the environment and health, social and economic conditions while also creating opportunities for sustainable economic development.

This Report contains information, knowledge, and analysis to help inform and improve future planning and licencing, and impact assessment processes for offshore wind projects in the Study Area (Figure 1).

[1] Throughout this Report, the term "participant" refers broadly to any Indigenous peoples and organizations, stakeholder groups, federal and provincial authorities, and members of the public participating in the Regional Assessment process.

Figure 1. The Study Area and Focus Area for the Regional Assessment

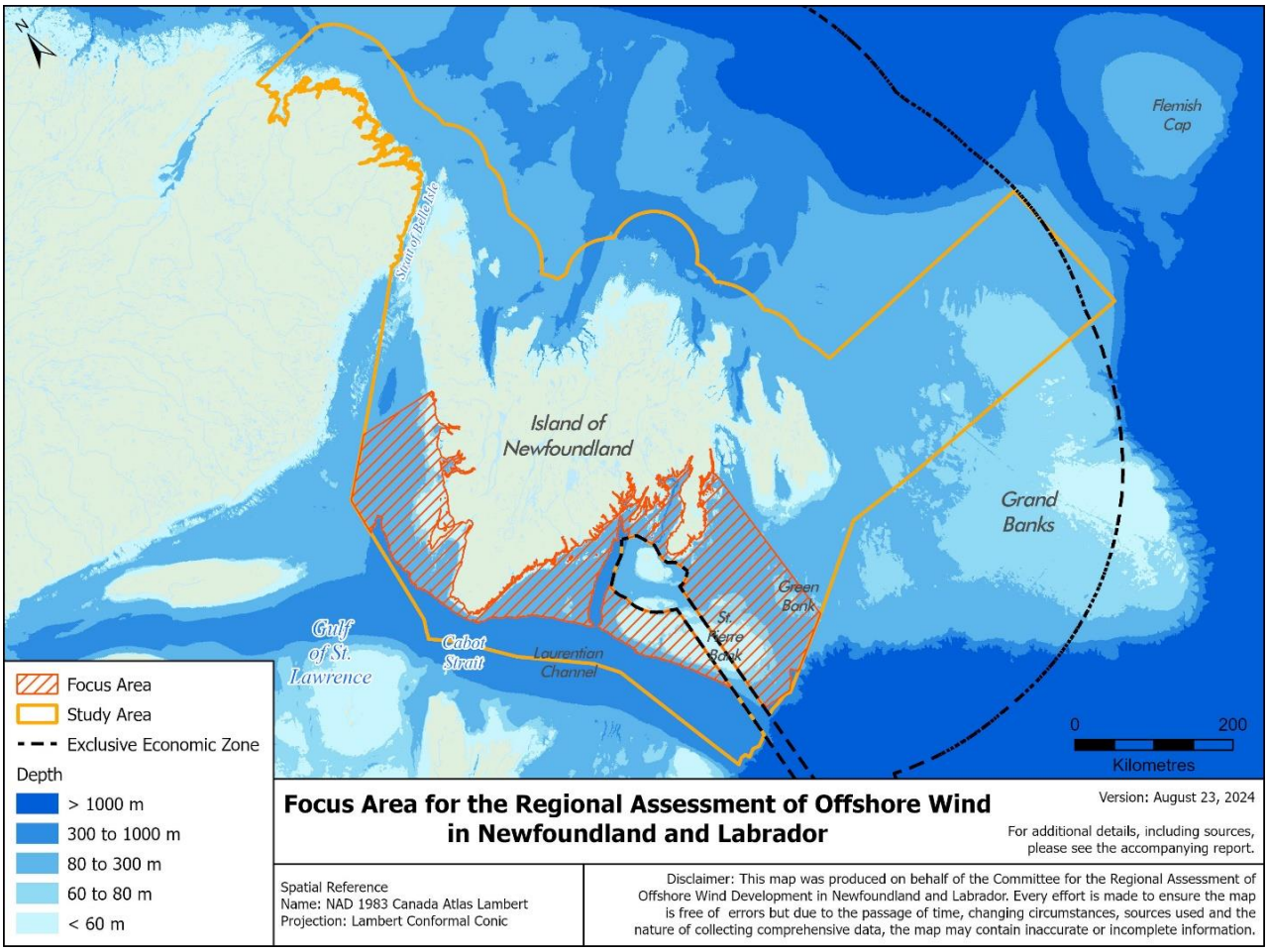

Figure Description: Map depicting the Focus Area for the Regional Assessment, shown in relation to the Study Area, France's Exclusive Economic Zone and water depths.

Following an analysis of the Study Area based on current technical feasibility criteria, the Committee identified a Focus Area as the portion of the Study Area more likely to see offshore wind development (of 10 turbines or more) in the foreseeable future. The Committee's recommendations of locations that may and may not be feasible for future licencing processes for offshore wind development activities are all within this Focus Area. However, the Committee is of the opinion that portions of the Study Area outside the Focus Area may become feasible for offshore wind development as information and data gaps are filled and as technology advances.

This Regional Assessment considers the potential effects (including cumulative effects), and interactions of those effects, of activities in the construction/expansion, operation, and decommissioning and abandonment phases of an offshore wind power generation facility itself and associated subsea infrastructure and offshore substations. It does not assess any activities associated with the development of land-based infrastructure that

may be included in the design of a specific offshore wind project (i.e., onshore substations, port facilities, and transmission lines on land). Project level assessments would consider any land-based infrastructure associated with an offshore wind development.

Finally, it is important to acknowledge the high-level nature of regional assessments and the absence of an offshore wind industry in Canada. The effects and mitigation information presented in this Report and the Committee's recommendations are useful for informing planning and licencing on a regional scale, and for providing a general overview for consideration when scoping impact assessments of offshore wind. It does not, however, replace the need for identifying and assessing effects and mitigation at a local level through project impact assessments.

1.2 Recommendations

The Committee makes the following recommendations:

- The governments of Canada and Newfoundland and Labrador, in collaboration with experts in offshore wind development in emerging markets, undertake initiatives to demonstrate need for an offshore wind industry in Newfoundland and Labrador, including:
  - use of electricity (e.g., expansion of domestic energy supply, replacement of domestic energy supplied by fossil fuel, hydrogen production, electrification of offshore oil and gas industry, etc.).
  - infrastructure readiness (e.g., grid capacity).
  - economics (e.g., levelized cost of energy, market demand, supply chain readiness, etc.).
  - how offshore wind fits into the province's overall energy and economic strategy.
- The governments of Canada and Newfoundland and Labrador communicate the results of these studies with the public to increase public knowledge of the role of offshore wind in the province's energy mix and economy.

2 Committee Conduct and Approach

2.1 Summary

The Committee consisted of five members with diverse backgrounds and expertise in various fields. The Ministers appointed the Committee, but the Committee operated independently from government. The Committee's priority was having a fair and transparent process and using publicly available data as much as possible.

2.2 Recommendations

The Committee did not have recommendations in this section.

3 Indigenous, Public, Fisheries, and Stakeholder Engagement

3.1 Summary

Between May 2023 and December 2024, the Committee has engaged with Indigenous peoples, fishers, other ocean users, municipal leaders, federal and provincial governmental agencies, environmental organizations, research groups, offshore wind developers, and individuals that have information, knowledge, and interests relevant to the Regional Assessment. The Committee hosted over 90 meetings and engagement sessions, attended by nearly 500 participants.[2] Section 3 presents an overview of engagement. The details of engagement activities are provided in the *Indigenous Participation – What We Heard Report* and the *Public, Fisheries, and Stakeholder Participation – What We Heard Report* (Appendices A and B to the Report). The Report describes how specific engagement outcomes have helped inform the Regional Assessment to date.

Challenges that arose during engagement included:

- Engagement fatigue –There are numerous overlapping initiatives all requesting time from the same participants (e.g., marine spatial planning [MSP], onshore wind development, other natural resource development projects). Communities and organizations have a limited capacity to engage.
- Advertising engagement sessions – The Committee leveraged their email distribution list, social media, and local and print media to advertise engagement sessions. However, for in-person sessions in rural communities, the Committee heard that additional advertising (e.g., mailed notices, placing posters in community gathering spaces) is needed.
- Access to technology – While technology enables engagement (e.g., holding virtual engagement sessions, sharing information on the Registry, communicating with participants via email, advertising meetings on social media), it also excludes anyone without internet access or anyone less familiar with technology.
- Seasonality / timing – The timeline for the Regional Assessment, even with the four-month extension, limited the ability of the Committee to meet with participants at a time that worked best for participants. The Committee's engagement efforts overlapped with hunting and fishing seasons, cultural celebrations, and engagement programs for other local projects.

3.2 Recommendations

The Committee did not have recommendations in this section.

[2] "nearly 500 participants" refers to the number of participants throughout the engagement process, many of whom participated in numerous meetings and sessions.

4 Description of Offshore Wind Development Activities

4.1 Summary

An offshore wind project typically is made up of:

- turbines), each consisting of a either a fixed or floating subsea foundation, an above-sea tower, a rotating hub with attached blades, and a nacelle that converts mechanical energy of the rotating blades to electrical energy
- subsea array and export cables
- a substation, and possibly a converter station.

Offshore wind development occurs in several phases: site selection and planning, design and fabrication, construction, operations and maintenance, and decommissioning and abandonment. This Regional Assessment is specific to construction (including expansion), operations (which includes maintenance activities), and decommissioning and abandonment. Activities take place in each phase that are important to understand when identifying the potential effects of offshore wind development. Examples of construction activities include use of vessels to transport turbine, substation, and converter station components from a port out to project site offshore; hammering or connecting turbine and substation foundations into the ocean floor; assembling and attaching the associated components to the foundations; and laying and securing the cables. Operations and maintenance activities also use vessels, as well as underwater vehicles for inspections. Decommissioning activities are like those in the construction phase. The lifetime of an offshore wind project can be 30 years from the time construction starts to when the project is decommissioned. Construction is the shortest (2 - 3 years) but most active phase. Operations is the longest (20 years) but least active phase. The decommissioning phase is also of relatively short duration (2 to 3 years).

4.2 Recommendations

The Committee did not have recommendations in this section.

5 Defining the Regional Assessment Focus Area

5.1 Summary

The Committee used water depths and information about icebergs and current offshore wind technology to select a Focus Area. The Focus Area is a portion of the Study Area more likely to see offshore wind development in the near future. The Committee then carried out the rest of their information gathering and analysis within the Focus Area. The Committee believes that portions of the Study Area outside the Focus Area will become feasible for offshore wind as information and data gaps are filled and as technology advances.

5.2 Recommendations

The Committee makes the following recommendations:

- Potential iceberg and drift ice presence in the Focus Area should be considered further during project impact assessments.
- Physical constraints to initial offshore wind energy licencing areas should be revisited as more data becomes available, for example through the Offshore Wind Predevelopment Program led by NRCan.

6 Identifying Initial Offshore Wind Licencing Areas for Consideration

6.1 Summary

Within the Focus Area, the Committee removed areas where there is a higher chance of environmental, health, social, and economic impacts. This includes, for example, avoiding Marine Protected Areas, sensitive areas close to shore, and commercial fishing areas. The remaining areas are where offshore wind development is most likely feasible and will likely have the least impact. The licencing areas are just Committee recommendations. The governments of Canada and Newfoundland and Labrador will ultimately decide on licencing areas. The Committee anticipates licencing areas will evolve as more information and data becomes available and as experience is gained in offshore wind development and operation.

Figure 6.12. Result: Initial Offshore Wind Energy Licencing Areas for Consideration

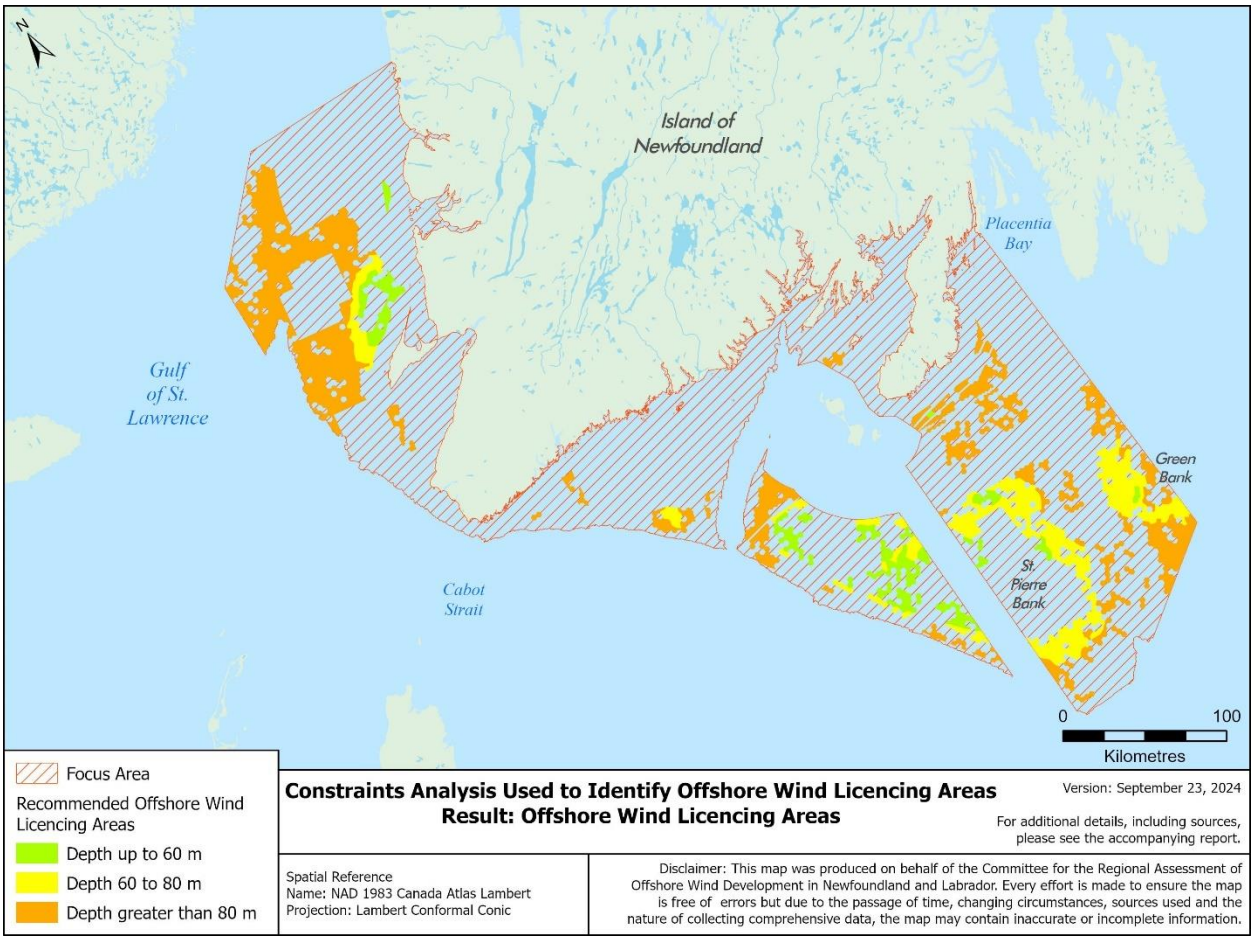

Figure Description: This map depicts initial offshore wind energy licencing areas for consideration, which resulted from the removal of all the above constraints. The map additionally depicts which of these areas may be suitable for technologies designed for depths up to 60 m, 60 - 80 m, and 80 - 300 m. The map was produced using Step 9 Resulting Area (from Figure 6.11). Additional steps were applied to complete the resulting offshore wind licencing areas such as filling small holes and removing slivers and isolated polygons. Licencing areas were categorized by water depth (up to 60 m, 60 - 80 m, and greater than 80 m) and small, isolated resulting areas were combined with surrounding areas. Any separated areas that were less than 10 km² in size were also removed where appropriate. Further details on analysis steps are outlined in Appendix F: GIS Methods.

Data Sources: NRCan, 2023; Regional Assessment Committee, 2024f.

6.2 Recommendations

The Committee recommends:

- As a high priority, the Government of Canada should reinstate a long-term commitment to funding MSP and key initiatives currently contributing to MSP.
  - The Government of Canada should continue to support DFO's development and maintenance of the Atlas to assist in MSP.

  - The Government of Canada should continue to support NRCan's development and maintenance of the Open Science and Data Platform (OSDP).
  - The Government of Canada should facilitate effective communication and collaboration across departments and agencies with relevant data, information, expertise and ongoing initiatives relevant to MSP.
- As a high priority, the governments of Canada and Newfoundland and Labrador should develop a marine spatial plan and that this should continue to be supported by further development of the Atlas.
  - The Government of Canada should continue to support DFO's MSP initiative for the Newfoundland and Labrador region.
  - The plan should incorporate known biotic and abiotic features of the area; current human uses, including all data submitted by fishers to DFO;[3] existing development; and protected areas.
  - A component of the plan should include zoning areas for potential development of marine based alternative energy projects, within which offshore wind areas could be selected for licencing consideration to help reduce conflict in advance of impact assessment processes.
  - MSP should be a participatory process done with all relevant government agencies, Indigenous peoples, and stakeholders.
- The governments of Canada and Newfoundland and Labrador include Indigenous peoples and Indigenous knowledge in the offshore wind regulatory licencing processes and monitoring and baseline research.
- The governments of Canada and Newfoundland and Labrador include existing ocean users, such as local fishers, in the offshore wind regulatory licencing processes and monitoring and baseline research.
- The Canada-Newfoundland and Labrador Offshore Energy Board (C-NLOER) re-evaluate the constraints used in this report and other initiatives informing licencing areas, as necessary or appropriate (determined by C-NLOER). This work should engage with relevant government agencies, Indigenous peoples, and stakeholders to establish their validity over time.
- The C-NLOER require developers to implement a follow-up and monitoring program for all offshore wind development projects and that the C-NLOER maintain a data repository to track ongoing results.[4] Any follow-up and monitoring program must be transparent, with information available free to the public through a public repository. Tracked information should include:
  - Data on existing conditions (i.e., before development) and predicted baselines for comparison should be tracked.
  - Observed effects of offshore wind development should be monitored and tracked.
  - Mitigation measures implemented, and their effectiveness should be monitored and tracked.

[3] Due to privacy screening and the 'Rule of Five', all data may not be displayed in a MSP.
[4] From the IAA: "Follow-up program means a program for verifying the accuracy of the impact assessment of a designated project and determining the effectiveness of any mitigation measures" (Impact Assessment Act, S.C. 2019, c. 28, s. 1.).

- Results of research and development and/or pilot projects should be monitored and tracked.

- The governments of Canada and Newfoundland and Labrador conduct multiple rounds of identifying offshore wind licencing areas as more information and data becomes available and as experience is gained in the Canada-Newfoundland and Labrador offshore wind industry.
- The federal Minister of Environment and Climate Change does not exclude future offshore wind projects within the Study Area from future project-level impact assessments, including at sites within the initial offshore wind licencing areas for consideration.
- Should portions of the Offshore Area become exclusively provincial jurisdiction, the provincial Minister of Environment and Climate Change require all offshore wind development projects undergo environmental assessments. The Committee also recommends that these assessments be considered as a case where cooperation and coordinated action between the federal and provincial governments (and possibly another jurisdiction) is needed.[5] Offshore wind development projects within the bays could result in adverse effects within federal jurisdiction including:
  - non-negligible adverse changes to fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act*, 1985*;* aquatic species, as defined in subsection 2(1) of *SARA*; and migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act,* 1994*.*
  - with respect to the Indigenous peoples of Canada, a non-negligible adverse impact on physical and cultural heritage, the current use of lands and resources for traditional purposes, or any structure, site or thing that is of historical, archaeological, paleontological, or architectural significance.
  - a non-negligible adverse change occurring in Canada to the health, social, or economic conditions of the Indigenous peoples of Canada.
  - a non-negligible adverse change to the marine environment that is caused by pollution and that would occur outside Canada.
  - a non-negligible adverse change — that is caused by pollution — to boundary waters or international waters, as those terms are defined in subsection 2(1) of the *Canada Water Act*, 1985, or to interprovincial waters.
- The governments of Canada and Newfoundland and Labrador, in collaboration with industry and researchers, support research and development regarding offshore wind turbines under various local conditions (e.g., icebergs and deeper waters). This includes exploring technologies and management approaches in areas where offshore oil and gas platform operators are exploring reducing emissions via electricity from offshore wind turbines.
  - Adequate funding through multi-year budget commitments from both federal and provincial governments should be provided to support initiatives and further research.

[5] From the IAA: Coordinated action is the collaboration between "jurisdictions that have powers, duties and functions in relation to the assessment of the effects of designated projects" (Impact Assessment Act, S.C. 2019, c. 28, s. 1.). In addition to federal and provincial authorities a jurisdiction can include, for example, an Indigenous governing body that has powers, duties or functions in relation to an assessment of the environmental effects of a designated project. Section 2 of the IAA should be referenced for the full definition of the term jurisdiction.

- The governments of Canada and Newfoundland and Labrador be transparent and continue engagement with Indigenous peoples, fisheries, stakeholders and public as the offshore wind development regulatory framework and industry develop in the province.
  - Adequate funding support should be provided through a multi-year budget by both federal and provincial governments to support internal and external engagement and education about offshore wind.
- The governments of Canada and Newfoundland and Labrador consider all new information or advice noted in the Final Report (e.g., ECCC recommendation on increasing the bird colony buffer to 10 - 15 km). Engagement should continue with government departments with subject-matter experts to ensure the most up-to-date information and recommendations are utilized.

7 Assessment of Environmental, Health, Social, and Economic Components: Summary

7.1 Summary

This Regional Assessment considers the following environmental, health, social, and economic components:

- Air Quality and Greenhouse Gases (GHGs)
- Aerofauna
- Marine Fish and Fish Habitat
- Marine Mammals and Sea Turtles
- Protected and Special Areas
- Indigenous Communities, Activities, Interests, and Rights
- Fisheries
- Other Ocean Uses
- Visual Aesthetics and Viewscapes
- Acoustic Environment
- Physical and Cultural Heritage
- Health
- Communities and Economy

The Report describes the following for each component:

- Existing conditions
- Potential effects
- Mitigation and other measures
- Engagement outcomes
- Data gaps and limitations

- Committee conclusions and recommendations

The construction phase has the greatest potential for adverse effects, and key components of concern are aerofauna; marine fish and fish habitat; marine mammals and sea turtles; Indigenous communities, activities, interests, and rights; and fisheries. Avoidance through licencing area selection and project siting is the primary means of mitigating these adverse effects regionally and at the project level. There are many measures from other jurisdictions to minimize effects where avoidance is not possible.

The benefits of offshore wind development are most apparent in the communities and economy component, and there are steps governments, industry, and communities can take to enhance these benefits locally.

The Committee has identified data gaps and limitations across all components and makes recommendations for how those gaps and limitations may be addressed. This includes recommendations regarding project level assessments, studies on specific components, and collaboration with Indigenous communities.

7.2 Recommendations by Component

7.2.1 Indigenous Communities, Activities, Interests, and Rights

Committee recommendations related to Indigenous Communities, Activities, Interests, and Rights are also relevant to other topics assessed under the Regional Assessment and are presented throughout the Report (e,g., Aerofauna, Protected and Special Areas, Fisheries, Visual Aesthetics and Viewscapes, Physical and Cultural Heritage, Cumulative Effects, Intersectionality).

7.2.2 Air Quality and GHGs

The Committee recommends:

- The Government of Canada through relevant agencies, and research institutions conduct large-scale offshore wind field studies across seasons to gather more comprehensive data, deploy long-term wind profilers and other measurement equipment similar to onshore sites, conduct model validation across multiple time and spatial scales, improve data assimilation methods for weather predictions, gather observations across multiple conditions from sea breezes to large storms, and focus on measurements in the challenging atmospheric boundary layer over oceans.

7.2.3 Aerofauna

The Committee recommends:

- that more robust movement studies of aerofauna likely to intersect the Focus Area be conducted. Project proponents in collaboration with ECCC should optimize project siting to avoid any major migration corridors. Based on input from ECCC (ECCC, 2024a):
  - When possible, movement data should be collected using high accuracy tracking devices such as Global Position Satellite (GPS).
  - Movement data should be analyzed with movement models that account for tracking errors, such as dBBMMs.

- Tracking devices should be programmed to record for an extended period that covers both the spring and fall migration for migrants, and the whole year for residents/facultative migrants. If such a deployment is not possible, consider several deployments so all life stages spent in the study area by a given species are covered. A few long-term tracks can be more informative than a higher number of short-term tracks (Thaxter et al., 2017b).
- The number of tracking devices deployed should be representative of the population in the area of interest. For example, between 13 and 41 birds were found to be required for Lesser Black-backed Gulls (*Larus fuscus*) to accurately describe 95% of their estimated habitat use (Thaxter et al. 2017b). On wide-ranging species with high inter-individual variation, at least 17 - 21 devices were required to minimise variations between individuals (Gutowsky et al. 2015). In both cases, increasing the number of tagged individuals also increases coverage of the total habitat used (Beal et al. 2023). Based on current literature, a minimum of 30 devices per species and colony should be deployed to ensure adequate representation. For colonial birds, devices should be deployed across all colonies expected to intersect with potential development areas. If deploying devices at all colonies that intersect an area of interest is not feasible, a modelling approach using tracking data of individuals from representative colonies can be used to create species predictive distributions.
- Consider deploying devices across several years, as this better describes the total habitat used (Beal et al. 2023).
- Ensure there is appropriate spatial variation between tracked individuals. If multiple colonies are present in or near the area of interest, distribute tracking devices on individuals across multiple colonies of importance.
- Deploy devices across age classes for a species, especially if different behaviours, habitat use, or migratory pathways are expected to occur.
- When possible, devices that record flight height data should be favoured, due to the lack of accurate flight altitude information for several species and the importance of altitude when considering collision vulnerability.

- ECCC endeavors to update all bird colony data. All known bird colonies should be revisited, and current species composition should be updated. This should also include identification of new colonies.
- colony-specific setback distances should be set on a case-by-case basis during project-level impact assessment. Project proponents should engage with ECCC during the planning stages of any project for advice on appropriate colony or species-specific setbacks based on best available data and subject matter expert information.[6]
- offshore wind project proponents should engage with ECCC and refer to current literature to consider any updated information on aerofauna and appropriate measures to avoid or mitigate impacts during project-level impact assessments. Where ECCC does not have this information, the proponent would be responsible for designing programs to gather the necessary information.

[6] ECCC should be engaged through the one-window approach: (FCR_Tracker@ec.gc.ca) for departmental coordination.

- A long-term evaluation of proposed development areas must be initiated that is designed to identify species that occupy the area, their key breeding, migration, foraging, staging, and wintering areas. This must include monitoring pre, during, and post development.
- Project proponents must work with the appropriate federal or provincial agency and Indigenous communities on the development of species-specific avoidance, setback, buffer, or mitigation protocols.
- During project-level impact assessments regulators ensure proponents select project sites with appropriate buffer/setback distances to adequately protect both federally legislated and other non-federally designated important areas for aerofauna such as Migratory Bird Sanctuaries, National Wildlife Areas, International Bird Areas/Key Biodiversity Areas, Western Hemisphere Shorebird Reserve Networks, and Sea Duck Key Habitat Sites.
- Proponents of offshore wind projects engage with ECCC and refer to current literature for species density information to know where species might be congregating, and the areas where species might transit/migrate, and should avoid those areas during project siting.
- Project proponents complete additional research related to bats and on approaches to mitigating the effects of offshore wind development on bats.

The Committee recommends, based on input from Indigenous peoples:

- Any eagle mortalities that result from the construction, maintenance, operation, or decommissioning of offshore wind energy developments be treated with respect.
- All eagle carcasses should be given to a representative of an appropriate Mi'kmaq community where the eagle carcasses were found, as soon as possible after discovery.

7.2.4 Marine Fish and Fish Habitat

The Committee recommends:

- Federal agencies (e.g., DFO, ECCC) begin a sustained series of surveys and programs to develop the basic information regarding the marine physical and biological environment in the Focus Area, including the areas identified for earlier potential offshore wind development, up to 80 m depth (Figure 6.12). Support should be provided to the Regional Marine data Collection Campaigns under NRCan's Offshore Wind Predevelopment Program which aims to help conduct the research required to fill these data gaps.
- Research and survey effort should include identification of migratory routes and/or important areas for all species at risk, fish and sharks. Specifically, a program of surveys in the Focus Area to collect information on sharks regarding species occurrence and abundance. Proponents should directly or indirectly (through a collective fund such as the Environmental Studies Research Fund (ESRF)), fund these research and survey programs. A range of technologies and data gathering should be considered, including protocols for observations by ocean users, eDNA, and autonomous underwater vehicles (AUVs).
- Project specific impact assessments should be conducted by proponents based on a minimum of 2 years or longer if a high level of variability is found, of site-specific surveys and should also include long-term monitoring and follow-up programs. Research should be conducted by proponents or through programs similar to the ESRF.

7.2.5 Marine Mammals and Sea Turtles

The Committee recommends:

- A program of surveys in the Focus Area initiated by DFO and developers to collect information on marine mammals and sea turtles regarding species occurrence and abundance. A range of technologies and data gathering should be considered, including protocols for observations by ocean users, eDNA, and AUVs.
- Research and survey effort should include identification of migratory routes and/or important areas for all species at risk, marine mammals, and sea turtles. Developers should directly or indirectly (through a collective fund such as the ESRF, fund these research and survey programs.
- Project specific impact assessments should be conducted by developers based on a minimum of 2 years or longer if a high level of variability is found, of site-specific surveys and should also include Before-After-Control-Impact (BACI) studies, long-term monitoring, and follow-up programs. Indigenous groups, fishers, other ocean users, the public, and other stakeholders should be consulted and engaged regarding monitoring efforts and outcomes.
- Enhanced data integration should be considered (aerial, satellite, real-time monitoring) to allow for adaptive management based on actual, current data rather than reliance on historic or seasonal patterns.
- Collaborative reporting standards should be considered with a standardized data format for marine mammal and sea turtle reporting, tailored to include real-time updates.
- Ongoing monitoring by NRCan, the Department of Industry, Energy and Technology for Newfoundland and Labrador, C-NLOER, developers, and other government authorities of developments in the offshore wind energy industry, in particular with regard to floating turbines as this type of facility may be suitable for Newfoundland and Labrador waters and may pose an additional risk of entanglement. Ongoing monitoring of entanglement related to other turbine and offshore wind structures should also be conducted.

7.2.6 Protected and Special Areas

The Committee recommends:

- the application of additional buffers to MPAs be considered during project-level impact assessments, as well as risk assessments be conducted for developments near any marine refuges or Other Effective Area-Based Conservation Measures (OEABCMs) to ensure avoidance or effective mitigations to the biodiversity conservation benefits.
- offshore wind project proponents undertaking project level impact assessments to consider, in collaboration with relevant departments (e.g., DFO, ECCC, Parks Canada, etc.), as well as Indigenous peoples, setback distances from areas important for the various species on which various protective areas conservation objectives are based.
- further research and monitoring to be completed on both positive and negative effects of offshore wind on protected areas, but developments should not occur as pilots within these areas.
- for licencing areas identified within Ecologically and Biologically Significant Areas (EBSAs), offshore wind project proponents assess potential impacts to key features or species identified within the specific EBSA and avoid or, where appropriate, apply mitigation measures to ensure projects are not damaging/disturbing these components.

- further work in defining migratory routes within EBSAs and other protected area types prior to issuing call for bids, in collaboration with the applicable departments and Indigenous peoples.
- project-level impact assessments identify Significant Benthic Areas (SBAs) overlapping a proposed project and ensure the least amount of disturbance to those areas as possible.
- proponents collaborate with respective departments (e.g., DFO, ECCC, Parks Canada, etc.) to ensure any legislation of a protected area within or adjacent to an offshore wind development be adhered to and that protections are fully met, as well as Indigenous peoples to ensure Indigenous knowledge is incorporated and respected. The Committee recommends that a 2 km buffer be implemented around the Laurentian Channel Marine Protected Area (MPA) to reduce the effects to the sensitive species within that MPA.

7.2.7 Fisheries

The Committee recommends:

- the regulator and/or developer conduct further research on the impacts of offshore wind development to fisheries, particularly in sensitive and low-productivity areas, in collaboration with fishers, fishing industry, and Indigenous and coastal communities. This additional research can then aid in developing buffer zones and climate resilient strategies,
- consideration of co-location, which is in place in jurisdictions where offshore wind farms and fisheries co-exist. This includes applying buffers around turbines to limit negative impacts and avoid fisheries conflict.
- multiple rounds of identifying offshore wind licencing areas as more information and data become available, and should require direct collaboration with fishers, industry groups, Indigenous peoples, and coastal communities during each round of identification.
- offshore wind developers avoid peak season for fishers during construction and decommissioning to lessen the impacts of these activities. Collaboration with fishers, coastal fishing communities and Indigenous communities will be important throughout all phases of activity.
- the establishment of a MSP for Newfoundland and Labrador, with a preliminary focus on areas of competing uses and areas in which offshore wind developers are considering.
- Transport Canada (TC) work in collaboration with proponents to ensure implementation of navigational safety plans, to reduce navigational risks. As well as implement any additional technology that will aid all sea users in navigation.
- a comprehensive review of publicly available information and information provided by fishers, as well as thorough engagement with fishers, fishery industry groups and government departments should be established during a project specific impact assessment, to avoid conflict of uses wherever possible.
- consideration of compensation framework for fishers that are displaced by offshore wind development or experience gear damage or loss due to entanglement or damage caused by offshore wind farms.
    - Compensation agreements should only be used where negative impacts to the fishing industry cannot first be avoided or mitigated.
    - This framework should be developed in consultation with fishers, fishing industry groups and Indigenous and coastal communities.

- Both direct and indirect impacts to the fishing industry should be considered in this framework.
- Any progress on this framework within Canada should be shared to reduce redundancy, but then also applied and changes made as appropriate to accommodate differences in fisheries from region to region.
- A non-attributional fund should also be developed, similar to the 'Canadian East Coast Offshore Operators Non-Attributional Fisheries Damage Compensation Program'.

- fishers and industry liaison groups be engaged with early in the offshore wind development processes, including any pre-work ongoing to develop frameworks and regulations. This includes proactive guidelines for fisheries co-existence to minimize conflicts and foster alignment. Creating an industry group, similar to One Ocean, to aid collaboration in these processes would also be recommended.

7.2.8 Other Ocean Uses

The Committee recommends:

- vessel routes and traffic be investigated further at the project level to impose appropriate buffers and management plans with that industry.
- a pre-development survey to identify submarine cables to be avoided when siting a project.
- offshore wind project proponents collaborate with DND to ensure there are no conflicts with planned or future exercises, and specifically DND's Unexploded Ordinances (UXO) and Legacy Sites Program for updated information on presence of any potential UXO sites.
- marine tourism areas be evaluated and mapped before offshore wind developments proceed.
- proponents should collaborate with ECCC to conduct a preliminary visibility analysis and adhere to their case-by-case recommendations on turbine siting to enable offshore wind developments and weather radar to co-exist.

7.2.9 Visual Aesthetics and Viewscapes:

The Committee recommends:

- That the C-NLOPB (C-NLOER), in collaboration with federal and provincial authorities, and Indigenous communities, complete visual assessments to identify and characterize the sensitive viewscapes that could be impacted by potential offshore wind development in offshore wind licencing areas before issuing a call for bids
- Offshore wind project proponents should be required to model the effects of any proposed offshore wind development projects on sensitive viewscapes using site- and project- specific characteristics, and
- Offshore wind project proponents should be required to consult Parks Canada; DOECC; Indigenous communities; stakeholders, including tourism operators; and members of the public to determine how best to avoid or, where appropriate, mitigate potential impacts to sensitive viewscapes.

7.2.10Acoustic Environment:

The Committee recommends:

- collaboration amongst government of Canada and regulatory authorities, Indigenous people, academic and research institutions, and industries to increase knowledge on species-specific impacts and long-term effects of continuous noise exposure from operating wind farms on marine ecosystems.

7.2.11Physical and Cultural Heritage:

The Committee recommends:

- proponents conduct preconstruction surveys to accurately identify these features, so that these areas can be avoided.
- proposals are reviewed by the Provincial Archaeology Office, Parks Canada, Canadian Heritage, or other relevant departments to ensure adequate and proper protection and consideration is given to sites within proposed development areas.
- additional research be conducted on the effects of offshore wind development on these features and areas, as well as additional mitigations.
- Indigenous communities and peoples be engaged during all phases of project development to ensure the preservation and avoidance of their culturally significant areas.
    - It is also important that any information and knowledge shared by Indigenous peoples be utilized in the manner specified by the Indigenous person, group, or organization (e.g., not to be shared publicly, not to be mapped, etc.).

7.2.12Health:

The Committee recommendations:

- Including an assessment of sound propagation from wind turbines, with the use of an appropriate noise model, during a project review.
- Offshore wind projects be assessed on a project-by-project basis, considering that the type of sound (e.g., impulsive, tonal, etc.) and human receptor locations will vary depending on project specific activities.
- Offshore wind activities occurring closer to shore (e.g., nearshore, or onshore) during construction, operation and decommissioning phases be also assessed for project related effects.
- Baseline data on human health and the environment be collected by proponents to help gauge potential impacts on Indigenous communities and the environment.

7.2.13Communities and Economy:

The Committee recommends

- Statistics Canada collect disaggregated data for information on identity and social factors, to improve GBA Plus considerations in impact assessments. Disaggregated data should be reflected in the Newfoundland and Labrador Community Accounts Repository once gathered.
- the province revisit initiatives undertaken to prepare for the introduction of offshore oil and gas development in Newfoundland and Labrador and consider updating and applying these in the context of offshore wind development. These could include, but are not limited to, establishing specialized programs at local colleges and institutes, programs to encourage Canadian

ownership of new developments (e.g., similar to the National Energy Program enacted in October 1980), and offering offshore survival training programs throughout the province. The Committee recommends that the provincial and federal governments revisit the offshore development fund (established to help prepare the province for industrial growth as a result of offshore oil development) and continue to support active industry associations (e.g., Marine Renewables Canada, EnergyNL, econext, Oceans Advance, NetZero Atlantic, etc.).

- proponents, government agencies and the C-NLOER support and collaborate with local communities. Proponents, government agencies and the C-NLOER should be transparent and provide available information about potential locations for offshore wind development as soon as possible, using a free and publicly available repository so that towns can plan effectively.
- implementing the recommendations from the World Bank (outlined in Table 7.13.8 of the Report).
- proponents, government agencies and the C-NLOER consider mitigation measures outlined in Our Sacred Responsibilities, MMIWG Calls for Justice in Impact Assessment and the Reclamation of Power and Place (Bridges & Skelding, 2024) as a starting point for developing strategies to mitigate impacts and enhance potential benefits of offshore wind development on Indigenous women, girls, and 2SLGBTQQIA+ people. Specific measures should be developed in collaboration with, and in consideration of the unique communities potentially impacted.

8 Cumulative Effects

8.1 Summary

There are many challenges to cumulative effects analysis in this Regional Assessment, including lack of data and the complexities of the marine environment. The Committee's process for identifying offshore wind licencing areas was based on avoiding areas where there is a higher chance of environmental, health, social, and economic impacts. This was the primary means of considering cumulative effects in this Regional Assessment. The Committee also relied on federal authority input, and Indigenous and public engagement outcomes relevant to cumulative effects. The Committee has made recommendations in support of planning, licencing, and impact assessment processes that improve cumulative effects knowledge and management. This includes recommendations in support of MSP and strategic assessment, and research on specific components.

8.2 Recommendations

The Committee recommends:

- The Government of Canada continue to support ECCC in their offshore wind cumulative effects research and analysis on aerofauna in the Atlantic Region.
- The Government of Canada renew support for DFO NL Region's Cumulative Impact Analysis, and support additional studies to be comparative to what DFO Maritimes has been doing in support of offshore wind development.
- The Government of Canada continue to support DFO's MSP initiative for the NLS Planning Area.

  - The Government of Canada continue to support DFO's continued development and maintenance of the Atlas to assist in MSP.
- The Government of Canada continue to support NRCan's continued development and maintenance of the OSDP.
- The Government of Canada provide support for other federal authorities who hold expertise in the specific valued components that are most likely to be adversely affected by offshore wind development.
- The Government of Canada conduct a strategic assessment of offshore licencing areas (once those areas are determined) with the key objective of supporting a more thorough assessment of cumulative effects.
  - The strategic assessment should be designed in collaboration with federal authorities who hold expertise in cumulative effects assessment, and in the specific valued components (e.g., ECCC for aerofauna; DFO for marine fish and fish habitat, and commercial fisheries; TC for marine traffic) that are most likely to be adversely affected by offshore wind development.
  - At this early stage of the industry, there may not be enough information to scope all issues effectively. The approach will have to be iterative.
  - The strategic assessment design and conduct should include engagement with Indigenous peoples, fish harvesters, residents of coastal communities with port infrastructure suitable for offshore wind, and other segments of the population that are most likely to be adversely affected by offshore wind.
  - The strategic assessment design and conduct should also be inclusive of experts in socio-economic benefits side to ensure there is also understanding and consideration of cumulative benefits.
- The C-NLOER requires environmental assessment of any project that does not fall under the IAA.
- The federal Minister of Environment and Climate Change does not exclude proposed offshore wind projects within the Study Area from future project-level impact assessments, including at sites within the identified initial offshore wind energy licencing areas.
- The provincial Minister of Environment and Climate Change require all offshore wind projects within the Study Area to undergo provincial environmental assessment (should portions of the Offshore Area become exclusively provincial jurisdiction)
- The IAAC and C-NLOER develop specific guidelines that define parameters for Project Design Envelopes, that consider the implications of a "worst case scenario" in cumulative effects assessments.
- The CNLOER establish a collaborative data-sharing platform that ensure continuous access to the best available information on baselines, existing conditions, and the effectiveness of mitigation measures.
- Sharing information in this manner will help address data gaps and will facilitate contributions from offshore wind energy proponents, relevant stakeholders, and Indigenous communities to allow for more effective cumulative effects management

9 Accidental Effects and Effects of the Environment on Offshore Wind Development

9.1 Summary

Though extremely rare, accidents can happen with offshore wind projects. A turbine blade could become loose, a vessel could collide with a turbine, a harmful chemical could be released, or a fire could occur. In some cases, the environment can cause these accidents. For example, a strong hurricane could cause a turbine tower to buckle. These accidental events could affect marine life and the lives of personnel working in the vicinity of the incident. However, offshore wind projects are designed, sited, constructed, and operated to withstand environmental effects and ensure maximum safety.

9.2 Recommendations

The Committee recommends:

- C-NLOER and NRCan should review previous safety incidents or accidental effects on other offshore vessels and installations to inform design, regulation and procedures for offshore wind development.
- Proponents should consider hurricane force winds, and associated winds and atmospheric icing, in project design given the potential for these forces throughout the Focus Area.
- Proponents should utilize the precautionary approach when sitting a project, especially when considering areas prone to sea ice or icebergs.
- Proponents should research and understand the lessons learned in the design and operation of offshore oil & gas facilities and should apply these findings to offshore wind development, for example, ice management planning. Ideally this research should be made public through the regulator.
- Due to the change in oceanographic parameters, i.e. sea temperature, risk assessments regarding ice and iceberg incursion in all areas of the Study Area should be undertaken.

10 Sustainability, Climate Change Commitments, and Environmental Obligations

10.1Summary

Sustainability is the ability to protect the environment, contribute to the social and economic well-being of the people of Canada, and preserve their health in a manner that benefits present and future generations. Offshore wind may be developed in a sustainable manner if done in a way that minimizes impact to the environment, positively impacts our communities. Development of an offshore wind industry aligns with federal and provincial

climate change commitments and environmental obligations, including investing in renewable energy, decreasing reliance on fossil fuels, and reducing emissions.

10.2Recommendations

The Committee recommends:

- Offshore wind projects in the waters off Newfoundland and Labrador should be expected by the offshore energy regulator to utilize state of the art technologies for the sustainable management of waste, both during operations and maintenance and decommissioning stages of the projects.

11 Intersectionality

11.1Summary

The Committee was tasked with considering the intersection of sex and gender with other identity factors and to make recommendations for how future impact assessments should consider and address these factors. This required application of Gender Based Analysis Plus (GBA Plus). GBA Plus contributes to a better understanding of the positive and negative effects that future offshore wind development may have on diverse populations. Future impact assessments of offshore wind projects can then be tailored to better meet diverse needs in anticipating and mitigating barriers that various individuals and groups might face and to ensure that all people can benefit from offshore wind development. This section of the Report establishes linkages across the environmental, social, health, and economic components to illustrate intersectional and diverse effects, and mitigation and other measures.

11.2Recommendations:

To address data gaps to facilitate more fulsome GBA Plus analyses in future impact assessments of offshore wind projects in this province, the Government of Newfoundland and Labrador should:

- Expand existing government data for GBA Plus.
  - Develop an inter-departmental plan for a GBA Plus data collection strategy, with NL Women and Gender Equality playing a leadership role.
  - Identify needed data, with community input, and build a strategy to publicly share data for GBA Plus
  - Encourage provincial ministries to systematically gather and report on relevant data that is submitted to them.
  - Add additional identity-based variables to the NL Community Accounts so that intersectional analyses can be conducted.
  - Develop a stronger connection between the NL Statistical Agency and Statistics Canada with the aim of adding more disaggregated data to the NLSA website.
- Build on community knowledge.

- Support research already being done at the community level.
- Gather intersectional data through engagement with diverse provincial and community-based organizations.
- Create a GBA Plus data working group that includes representatives from, and engages with, community organizations as well as government agencies.

The report prepared by the Canadian Research Institute for the Advancement of Women (Appendix G of the Final Report) expands on these recommendations.

12 Conclusion

The Committee's findings and recommendations may be used to inform future planning, licencing, and impact assessment processes. It is important to know that the Committee's recommendations are not binding.

13 References

This section is a compilation of all references used in the Committee's Report.

List of Appendices in the Final Report

The following documents are appended to the Final Report:

- Appendix A, Indigenous Participation - What We Heard Report: Describes all Indigenous engagement activities and outcomes for the entire Regional Assessment process.
- Appendix B, Public, Fisheries, and Stakeholder Participation - What We Heard Report: Describes all public, fisheries, and stakeholder engagement activities and outcomes for the entire Regional Assessment process.
- Appendix C, Indigenous Participation Plan: Describes the Committee's intended plan for Indigenous engagement throughout the Regional Assessment.
- Appendix D, Public, Fisheries, and Stakeholder Participation Plan: Describes the Committee's plan for public, fisheries, and stakeholder engagement, including advisory groups and federal and provincial authorities.
- Appendix E, Committee Decision Regarding the Focus Area for the Regional Assessment of Offshore Wind Development in Newfoundland and Labrador: The Committee published this document on the Registry in November 2023 to describe its process for identifying a Proposed Focus Area, its engagement on the Proposed Focus Area, and its decision to define a Focus Area for the Regional Assessment.
- Appendix F, GIS Methods: Describes the methodology the Committee used to conduct their constraints analysis to determine the initial offshore wind licencing areas for further consideration.
- Appendix G, Harnessing the potential for a more equitable future in Newfoundland and Labrador: Applying Gender-Based Analysis Plus (GBA Plus) to offshore wind development: The Canadian

Research Institute for the Advancement of Women prepared this report for the Committee in support of the Regional Assessment.