ENVIRONMENTAL IMPACT STATEMENT

GUIDELINES

for

Burin Peninsula EverWind Green Fuels Project

Burin Peninsula, NL

EverWind Fuels

Registration No. 2321

January 17, 2025

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Glossary of Acronyms and Abbreviations

ACCDC	Atlantic Canada Conservation Data Centre
BACT	Best Available Control Technology
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DFO	Department of Fisheries and Oceans Canada
DGSNL	Department of Digital Government and Service NL
EAC	Environmental Assessment Committee
EBSA	Ecologically and Biologically Significant Area
ECC	Department of Environment and Climate Change
ECCC	Environment and Climate Change Canada
EEMP	Environmental Effects Monitoring Program
EIS	Environmental Impact Statement
EPP	Environmental Protection Plan
ESCP	Erosion and Sediment Control Plan
FFA	Department of Fisheries, Forestry and Agriculture
GEDIP	Gender Equity, Diversity and Inclusion Plan
GHG	Greenhouse Gas
GIS	Geographic Information System
Guidelines	Environmental Impact Statement (EIS) Guidelines
IET	Department of Industry, Energy and Technology
LSA	Local Study Area
MAPA	Department of Municipal and Provincial Affairs
MBCA	Migratory Birds Convention Act
MGGA	Management of Greenhouse Gas Act
Minister	Minister of Environment and Climate Change (ECC), unless otherwise stated
NFPA	National Fire Protection Association
NL	Newfoundland and Labrador
NOC	National Occupation Classification
NPRI	National Pollutant Release Inventory
RSA	Regional Study Area
SAR	Species at Risk
SARA	Species at Risk Act
SI	International System of Units
S-ranks	Species Ranking for Rarity or Conservation Status
USB	Universal Serial Bus
VEC	Valued Environmental Component

PART 1 – BACKGROUND

Purpose of the Environmental Impact Statement

The purpose of the environmental impact statement (EIS) is to identify for all phases of the Project the important beneficial and adverse environmental effects associated with the Project, to identify measures to mitigate adverse effects, to determine the significance of residual environmental effects, and to consult with the public and respond to their concerns. The environmental effects and mitigations associated with the proposed Burin Peninsula EverWind Green Fuels Project (the Project) may be subject to a comprehensive evaluation through the licensing and permitting processes and regulatory oversight of federal and provincial government departments / agencies and municipalities. Information provided in the EIS shall not be considered as redundant, but rather shall be used to inform other regulatory processes.

Purpose of the EIS Guidelines

On October 25, 2024, the Minister of Environment and Climate Change (the Minister) informed Everwind Fuels (the Proponent) that an EIS is required for the Project. The purpose of the EIS Guidelines (the Guidelines) is to identify for the Proponent the nature, scope and extent of the information and analysis required in the preparation of the EIS. The Proponent will prepare and submit an EIS that examines the potential environmental effects of the construction, operation and maintenance, decommissioning and rehabilitation, and abandonment of the Project; identifies mitigation measures; and evaluates the significance of residual effects. Section 3 of the Guidelines outline in detail the content of the EIS to be prepared. The EIS is a statement of the Proponent's environmental conclusions and commitments related to the Project and must be explicitly endorsed by the Proponent.

Proposed Project Description

The Proponent is proposing to construct and operate on the Burin Peninsula: a 10 gigawatt (GW) onshore wind Project consisting of three wind farms with up to 1500-turbines; three solar farms with a total of total capacity of 2.5 GW; and a 5.5 GW hydrogen/ammonia production facility north of the Town of Marystown. The Project will include a processing plant, access roads, transmission lines, underground pipelines, above ground gas storage tanks, marine loading terminal, and workforce accommodations. The EIS shall describe all components and sites that are needed to make the Project operational and viable.

PART 2 – PREPARATION AND PRESENTATION OF THE EIS

The EIS shall be written in terms understandable to the general public, however, where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms shall be included.

All sources of information used in the EIS shall be referenced within the body of the EIS and cited in Section 12 of the EIS. Where conclusions that are critical to the assessment of environmental effects are cited from other reports, the EIS shall provide sufficient detail of the original data and analysis to enable a critical review of that material and submit reference material as an appendix to the EIS. All conclusions regarding the receiving environment and predictions of the environmental effects shall be substantiated. The EIS shall reference, rather than repeat, information previously presented in other Sections of the document. For clarity and ease of reference, the EIS shall include a Table of Concordance that cross-references the Guidelines so that points raised in the Guidelines are easily located in the EIS. A Table of Contents, providing the location of information in the final document by Volume (if applicable), Part, Section, subsection and page number, is required.

The EIS shall provide charts, diagrams, and maps wherever useful to clarify the text,

including a depiction of how the developed Project sites will appear from both an aerial and terrestrial perspective. Where possible, maps shall use common scales to allow for comparison and overlay of mapped features and shall indicate common and accepted local place names. Geographic information shall be provided in standard Geographic Information System (GIS) mapping (digital) format, where feasible. The EIS and all associated reports and studies shall use System International (SI) units of measure and terminology.

The EIS shall be a stand-alone document upon which a critical review can be undertaken. The Proponent shall explain and justify all methods used in the preparation of the EIS, including the use of scientific, engineering, Indigenous, local, and other knowledge. All hypotheses and assumptions shall be clearly identified and justified. All data collection methods, models, and studies shall be documented so that the analyses are transparent and reproducible. The degree of uncertainty, reliability, and sensitivity of models used to reach conclusions shall be indicated.

The EIS must address all requirements outlined in the Guidelines. Where the Proponent is of the opinion that the information is not required, it should contact the relevant regulatory authority to confirm the rationale for not including it, prior to submitting the EIS. The rationale for not including the information must also be provided in the EIS. The Proponent shall identify in the EIS any changes made to the Project as originally proposed in the Registration document, including the reasons for these changes that may result in a different set of effects and may require a reconsideration of information requirements.

The information included in this document is not intended to be exhaustive - additional detail, studies, and/or examination of components may be required. The content of the EIS should be organized according to the format described in Section 3.

PART 3 - OUTLINE OF THE EIS

EXECUTIVE SUMMARY

The executive summary shall contain the following information:

- identification of the Proponent;
- a brief Project description;
- predicted biophysical environmental effects (including cumulative effects associated with the Project and other existing and reasonably expected future projects in the vicinity of the Project site);
- socio-economic factors;
- alternatives;
- mitigation measures;
- residual effects;
- follow-up and monitoring programs;
- all studies and plans required by the Guidelines;
- a summary of the fundamental conclusions of the EIS; and
- a glossary of terms.

The Table of Concordance may be included in the executive summary.

PLAIN LANGUAGE SUMMARY

The Proponent must prepare a stand-alone plain language summary of the EIS with a glossary of terms. The summary must contain sufficient detail for the reader to identify the Proponent and to understand the Project and its alternatives, potential environmental, health, social and economic effects, and potential adverse effects. It should also provide sufficient detail to understand proposed mitigation measures, and residual and cumulative effects associated with the Project (in consideration of other existing and reasonably expected future projects in the vicinity of the Project site). Finally, the summary must include all studies and plans required by the Guidelines and a summary of the fundamental conclusions of the EIS.

PROJECT INFORMATION

1.0 INTRODUCTION

1.1 Name of the Undertaking

This subsection shall provide the name of the Project. The name assigned to the Project by the Department of Environment and Climate Change (ECC) is the 'Burin Peninsula EverWind Green Fuels Project.

1.2 The Proponent

This subsection shall introduce the Proponent by providing the following pertinent information:

- name of, and contact information for corporate body;
- name of, and contact information for chief executive officer;
- principle contact person for the purpose of environmental assessment, and contact information;
- key personnel, contractors, and/or sub-contractors responsible for preparing the EIS, and contact information; and
- disclosure of any affiliation or partnership with governmental or non-governmental organizations.

This subsection shall include a description of the Proponent's history of wind energy generation and hydrogen and ammonia production, identifying any previous and current such projects and their associated successes, failures and lessons learned.

1.3 Overview of the Undertaking

The intent of the overview is to identify the key Project components, rather than provide a detailed description of the Project, which will follow under Section 2.0. The Proponent shall briefly summarize the Project by presenting the major Project components, associated activities, scheduling details, timing of each phase of the Project and other

key features, including a detailed map of all Project components. If development of the Project will follow a phased approach, information about the incremental and phased development of the Project, including the timing of each phase of the Project, shall be described. The key components of the undertaking shall include but not be limited to:

a) all wind energy generation areas (wind farms) required to make the Project operational and viable (i.e. Lower, Middle and Upper Burin Peninsula areas as referenced in the Proponent's environmental assessment registration document and other areas if required) including turbine locations and associated roads;
b) all solar energy generation areas (solar farms) required to make the Project operational and viable (i.e. Lower, Middle and Upper Burin Peninsula areas as referenced in the Proponent's environmental assessment registration document, and other areas if required) including solar farm locations and associated roads;
c) transmission lines, collector lines and substations associated with each wind and solar farm and the transport of energy to the hydrogen and ammonia production facility;
d) the hydrogen and ammonia production facility, ancillary structures, and auxiliary power sources (including any connections to the Newfoundland and Labrador Hydro Provincial Interconnected System);
e) roads and trails associated with Project works, undertakings or activities other than above;
f) water source(s), and related pipeline(s) required to support electrolysis and the hydrogen and ammonia production processes, including pipeline(s) between the marine environment and the hydrogen and ammonia production facility for the transport of seawater for cooling;
g) pipeline(s) from the plant for wastewater, discharge, including sanitary and stormwater waste and any other discharge;
h) above ground and underground storage facilities for explosives, hazardous materials, and gases and liquids, including but not limited to hydrogen, ammonia and any other materials;
i) marine terminal and associated infrastructure for loading and unloading Project components such as equipment, supplies, hydrogen and ammonia and other

Project-related materials and supplies;

j) pipeline(s) from the hydrogen and ammonia plant to the marine terminal for the movement of hydrogen and/or ammonia;
k) laydown areas needed to temporarily accommodate Project components, equipment and supplies, including spent components and components in need of repair (e.g., turbine blades);
l) mode and route of transport of Project components including materials, equipment and supplies for installation of wind and solar farms and hydrogen and ammonia production facility;
m) mode and route of transport of hydrogen and ammonia from Mortier Bay to markets and/or intermediary facilities (e.g. transshipment terminals);
n) workforce accommodation camps and related infrastructure, including temporary or permanent water intakes, wastewater management and power supply; and
o) concrete batch plant locations, water source and supporting infrastructure including temporary or permanent water intakes, and wastewater management.

2.0 THE PROPOSED UNDERTAKING

2.1 Rationale for the Undertaking

The EIS shall describe the rationale for the Project in terms of its need and purpose.

The need for the Project refers to a problem, opportunity or demand that the proposed Project is intending to solve or satisfy and establishes the fundamental justification or rationale for the Project. The information provided should make it possible to reasonably conclude that there is an opportunity or issue that warrants a response and that the Project is an appropriate approach.

The purpose of the Project shall outline what is to be achieved by carrying out the Project. The EIS shall broadly classify the Project (e.g. low carbon energy production) and describe any objectives the Proponent has in carrying out the Project, including whether

those objectives are related to broader private or public sector policies, plans or programs (e.g. federal and provincial government commitments to reduce in GHG emissions, etc.).

The need for and purpose of the Project should be established from the perspective of the Proponent and provide the context for the consideration of alternatives, in Section 3.

2.2 Project Description

The Proponent shall describe the scope of the Project for which the EIS is being conducted including: the construction, operation and maintenance, and the decommissioning and rehabilitation of Project sites.

2.3.1 General Layout

The EIS shall provide a written and graphic description (e.g. maps, aerial imagery, GIS files, drawings), including dimensions where appropriate, of the following physical features of the undertaking:

a) each wind farm required to make the Project operational and viable (i.e. Lower, Middle and Upper Burin Peninsula areas as referenced in the Proponent's environmental assessment registration document and other sites if required) including but not limited to a description of the following:
    i. wind turbines, base areas and transformers (e.g., height of wind turbines, length of blades, anchoring and elevating devices, etc.);
    ii. electrical transmission lines, collector lines, substations, battery energy storage facilities, and any other electrical infrastructure and connection corridors on each wind farm and leading to the hydrogen and ammonia production facility (or other electrical connections);
    iii. access roads, water course crossings and laydown areas;
    iv. storage areas for explosives associated with blasting; and
    v. the geographic boundaries of each wind farm and connection corridor.
b) each solar farm required to make the Project operational and viable (i.e. Lower,

Middle and Upper Burin Peninsula areas as referenced in the Proponent's environmental assessment registration document and other sites if required) including but not limited to a description of the following:

i. description (make and model) and number of solar panels;
ii. individual dimensions and material composition;
iii. electrical transmission lines, collector lines, substations, etc. on the solar farm and electrical connection corridors leading to the hydrogen and ammonia production facility (or other connections);
iv. access roads, water course crossings and laydown areas;
v. storage areas for explosives associated with blasting; and
vi. the geographic boundaries of each solar farm and connection corridor.

c) the hydrogen and ammonia production facility, including but not limited to a description of the following:
    i. buildings, structures, and infrastructure required for water electrolysis and hydrogen and ammonia production;
    ii. above ground and underground hydrogen, ammonia and carbon storage, including transportation to storage;
    iii. flaring and venting radius for hydrogen and ammonia;
    iv. office buildings, worker accommodations and associated infrastructure;
    v. auxiliary energy sources, including gas turbines to support hydrogen and ammonia production;
    vi. elevating devices, pressure systems and gas installations at the hydrogen and ammonia production facility and ancillary structures;
    vii. stormwater management infrastructure including stormwater detention ponds;
    viii. waste management structures, including solid waste and wastewater effluent discharge; and
    ix. storage facilities for hazardous materials, gas and liquid fuel.
d) marine terminal and associated infrastructure (e.g., wharfage, berths and docking facilities, roads, buildings, pipelines, storage and laydown areas) for loading and unloading Project components, products, equipment and all Project-related

materials and supplies;

e) water supply source(s), alternate water supply, and associated infrastructure to support hydrogen and ammonia production, including water control structures, pipelines, diversions and/or pump stations that may be required to operate the Project;
f) all effluent and other wastewater streams and associated infrastructure, including pipeline(s) to final discharge point(s);
g) workforce accommodations and associated infrastructure including drinking water and wastewater services; and
h) concrete production facilities, water sources and water management.

2.3.2 Construction

Details of materials, methods, schedule, and locations of all construction activities (including permanent and temporary infrastructure related to physical features) shall be described, including but not limited to, the following:

a) construction planning and development schedule;
b) site preparation, clearing, blasting and blast radius, etc., for the installation of:
    i. wind turbines and infrastructure and related laydown areas, transmission lines (including buried transmission lines), electrical connection corridors, substations, and access roads (including water crossings) for all wind farms;
    ii. solar panels and infrastructure and related laydown areas, transmission lines (including buried transmission lines), electrical connection corridors, substations, and access roads (including water crossings) for all solar farms;
    iii. hydrogen and ammonia production facility, including ancillary buildings, structures and infrastructure including pipelines for water source(s), wastewater discharge, and transfer of products;
    iv. in-water and on land works for the construction of the marine terminal, docks and docking areas and associated infrastructure at Mortier Bay

for loading and unloading Project components, products, equipment and other related Project materials and supplies;

v. water management infrastructure; and
vi. worker accommodations and all associated infrastructure including potable water and wastewater systems;

c) sources and predicted decibel levels and duration of noise, including noise during blasting, piling and other construction works;
d) sources and predicted levels of light emissions (including solar glare and shadow flicker);
e) Project structures and infrastructure in protected public water supply areas, if applicable;
f) Project components for in-water works, such as intakes, outfalls, fording, removal of aquatic and/or stream side vegetation, dewatering, water use activities, changes to natural flow regime, dredging, piling, blasting, infilling, and placement of in-water infrastructure in the marine and freshwater environments;
g) the timing and duration of the construction period for in-water works, including installation of infrastructure, temporary or permanent water intake piping, marine pilings, breakwaters, intake and effluent piping and cribwork;
h) location of dams within or adjacent to the Project area that may be impacted by blasting;
i) location of proposed access roads and trails associated with the Project and any water crossings and infrastructure associated with water crossings (e.g. culverts, dams, bridge structures, etc.);
j) transport, storage, and use of all hazardous materials, fuels and lubricants required during construction, including a description of best management practices for the storage of waste dangerous goods/hazardous waste;
k) location of proposed primary and alternate quarry sites, including boundaries, which may be required to supply materials to the Project;
l) the classes (e.g., crushed aggregate, sand, gravel) and estimated quantities of quarry materials that may be required for the Project, including road construction and upgrading, preparation and construction of tower base sites, preparation of

laydown areas and other construction uses;

m) details of exploration or testing activities, including blasting, that may be required to evaluate quarry materials in advance of developing a new quarry site or in evaluating materials at an existing quarry site;
n) location of concrete batch plants and water sources;
o) all heavy equipment to be used during construction and an estimate of all emissions during construction;
p) emissions inventory and prediction of the dispersion of said emissions from all aspects of the construction of the Project (e.g., wind turbines, access roads, and the processing facility, etc.); and
q) details of on-site generators required during construction, including the number and location of such generators, capacity, hours/days of operation, emission profiles, etc.

The EIS shall include plans for the construction phase of the Project, as described in subsection 7.2 of the EIS Guidelines.

2.3.3 Operation and Maintenance

All aspects of the operation and maintenance procedures for the undertaking shall be described in this subsection of the EIS, including, but not limited to, the following:

a) details of each phase of operations, including the proposed industrial facility expansion (if the Project will be developed in phases);
b) wind turbines at all sites needed to make the Project operational and viable (i.e. Lower, Middle and Upper Burin Peninsula areas as referenced in the Proponent's environmental assessment registration document and other sites if required);
c) solar farms at all sites needed to make the Project operational and viable (i.e. Lower, Middle and Upper Burin Peninsula areas as referenced in the Proponent's environmental assessment registration document and other sites if required);
d) transmission and collector lines, substations, battery energy storage facilities, and other infrastructure associated with each wind or solar farm and the transport of

energy to the hydrogen and ammonia production facility;

e) all access roads and trails associated with transmission lines, wind turbine sites, solar farms, quarries, marine terminal, industrial facility operations and any other Project infrastructure and activities;
f) description of any regulatory requirements related to the incremental development of the Project, requiring the Proponent to demonstrate that the Project is being conducted in an environmentally acceptable manner prior to increasing production;
g) marine terminal and shipping operations including the transportation of hydrogen and ammonia from the production facility to markets, estimated frequency of shipments, and/or intermediary facilities (e.g., transshipment terminals);
h) pipeline(s) from the hydrogen/ammonia plant to the marine terminal for the movement of hydrogen and/or ammonia, from the plant for effluent discharge and/or other wastewater, and between the marine environment and the hydrogen and ammonia production facility for the transport of seawater for cooling;
i) predicted decibels, duration, and geographic reach of noise from Project components, including long-term, low frequency noise emissions;
j) lighting emissions and intensity (including solar glare and shadow flicker) from Project components;
k) chemicals to be used as part of operations;
l) standard operating procedures for water electrolysis;
m) proposed water source(s), estimated daily and annual volume of water quantity and water quality requirements, and any treatment needed to meet the required water quality for hydrogen and ammonia production;
n) other water withdrawal requirements and sources during Project operation, including water for cooling;
o) water crossing infrastructure maintenance;
p) characterization of wastewater effluent from hydrogen and ammonia production with comparison to regulatory standards for discharge, estimation of annual volume of effluent discharge, description of treatment required for effluent to meet regulatory standards for discharge, and a description of the receiving environment for wastewater discharged during hydrogen and ammonia production;

q) procedures for regular source water and wastewater quality and quantity monitoring including a list of surface water collections systems (i.e., collection ditches, check dams, sediment control features, etc.);
r) procedures for regular ambient climate, water quantity and quality monitoring;
s) characterization and estimation of annual and daily atmospheric discharges from hydrogen and ammonia production, including detailed specifications and air emission estimates on the emergency back-up power generation, the electrolyzer cooling system, and the air separation unit;
t) emissions inventory and prediction of the dispersion of said emissions from all aspects of the operation of the Project (e.g., wind turbines, access roads, and the processing facility, etc.);
u) sources of dust liftoff (e.g., access roads, etc.);
v) procedures for, and estimated frequency of, flaring and/or venting of hydrogen, ammonia or other gases;
w) above ground and underground storage of hydrogen and ammonia, including method of transportation to storage locations;
x) anticipated quantity of waste turbine blades and components and solar panels;
y) transport, storage, and use of all hazardous materials, fuels and lubricants required during operation and maintenance, including a description of best management practices for the storage of waste dangerous goods/hazardous waste;
z) market intentions for all end products, including wind energy, hydrogen and ammonia;
aa) description of energy use, including amount and frequency of energy and capacity to be provided to or from the electrical grid, and energy buffering needs;
bb) identification of potential sources of quarry materials required for Project operation and maintenance, including primary and alternate sites for all classes of quarry materials required for the Project;
cc) site security and management of public access to Project components (wind farms and access roads, solar farms, hydrogen and ammonia production facility, transmission lines and substations, carbon sequestration sites, etc.);
dd) a description of operation and maintenance requirements for any dams required

for the Project; and

ee) a description of anticipated vegetation control around Project components, including wind turbines, solar farms, transmission lines and substations, access roads, etc. and if any plant or lichen species at risk or species of conservation concern are implicated.

The EIS shall include plans for the operation and maintenance phase of the Project, as described in subsection 7.2 of the EIS Guidelines.

2.3.4 Decommissioning and Rehabilitation

The EIS shall predict the lifespan of the undertaking and present an approach for decommissioning, which sets out a commitment from the Proponent to address:

a) expected useful life of major Project infrastructure and life cycle management plans for such infrastructure, turbine blades and solar panels;
b) proposed decommissioning schedule and activities, including dismantling and removal of infrastructure and facilities (e.g., wind turbines, solar farms, access roads and associated in water infrastructure, transmission lines, hydrogen/ammonia facility, quarries, laydown areas, in water infrastructure, and marine terminal) and site rehabilitation, including a seed collection schedule and a revegetation plan;
c) decommissioning and rehabilitation of above ground and underground carbon dioxide, hydrogen and ammonia storage facilities associated with the Project; and
d) decommissioning of industrial water supply, including water management infrastructure (freshwater and marine).

The EIS shall include plans for the decommissioning and rehabilitation phase of the Project, as described in subsection 7.2 of the EIS Guidelines.

2.3.5 GHG Emissions

The EIS shall provide for all phases of the Project, including construction, operation and maintenance, and decommissioning and rehabilitation, the following details:

a) details on projected annual greenhouse gas (GHG) production by type, and annual energy consumption by type during all (i.e., on-site stationary combustion, on-site electricity generation and mobile transportation but excluding purchased electricity generated off-site) and associated annual GHG emissions by source;
b) identification of any non-combusted and industrial process emissions at the site;
c) identification, by year or appropriate multi-year period, the volume of carbon dioxide emissions that may be emitted and sequestered on-site, be emitted and exported to a separate site for sequestration and may be purchased off-site and sequestered on-site;
d) estimates of fuel consumption, GHG emissions associated with fuel combustion, and GHG emissions from any non-combusted and industrial process sources at the facility, by source per year of operation;
e) procedures for carbon capture, transport and storage; and
f) projected annual energy consumption by type and annual GHG emissions by source for activities outside the Project boundary such as on-road, air and marine transportation and purchased electricity (i.e., from Newfoundland and Labrador Hydro or Newfoundland Power), solid waste, and significant purchased services from providers outside the Project boundary (e.g., a marine port facility). These GHG emissions, excluding solid waste, will be subject to **Revenue Administration Act** carbon tax provisions; and
g) estimates of combusted and non- combusted GHG emissions by source, and carbon dioxide sequestered for all phases of the Project should be provided as described in the Management of Greenhouse Gas Reporting Regulations and, as appropriate, the Western Climate Initiative reporting methodology (2010) and A Guidance Document for Reporting Greenhouse Gas Emissions for Large Industry in Newfoundland and Labrador (2017). GHG emissions should be measured as tonnes of carbon dioxide equivalent per year as per section 4 and Schedule C of the Management of Greenhouse Gas Reporting Regulations.

2.3.6 Regulatory Framework and Government Oversight

The EIS shall provide a comprehensive list of permits and regulatory approvals (municipal, provincial, and federal) required for the undertaking. The list shall include, but not be limited to, the following details:

- activity requiring regulatory approval;
- name of permit, license or regulatory approval;
- name of legislation applicable in each case; and
- regulatory agency responsible for each permit, license, and approval.

The EIS shall identify:

a) government policies, resource management plans, and planning or study initiatives pertinent to the Project and/or the environmental assessment (e.g., IET's Renewable Energy Plan and Hydrogen Development Action Plan);
b) regulations, codes, standards, guidelines and best industry practices applicable to wind, solar, and hydrogen projects. In cases where the Project is outside the scope of adopted codes/standards, the EIS shall identify the requirements that will maintain an equivalent level of safety;
c) established and evolving developments in hydrogen and ammonia installation, production, storage, handling and transportation codes and standards;
d) the land nomination and competitive bidding process for Crown land for wind development;
e) municipal or provincial land use plans, land zoning, community plans, protected road zoning plans and regulations;
f) regional, provincial, and/or national objectives, standards, codes and/or guidelines that have been used by the Proponent to assist in the development of the EIS;
g) list of development permits required from a Municipal Authority within a land use planning area as established under the Urban and Rural Planning Act, 2000 for the development of Project components and support components within a land use planning area;
h) list of permits and requirements authorized under the **Towns and Local Service**

District Act and regulations or bylaws therein; and

i) list of permits required from the Department of Transportation & Infrastructure related to work involving Department infrastructure; and

j) any governmental or non-governmental working groups or committees that provide guidance to municipal and or provincial bodies with respect to land use, ecological and recreational stewardship in the Project area.

The EIS shall evaluate whether the Environmental Emergency Regulations, 2019 (E2 Regulations) apply to the Project, and whether the Project meets the published reporting requirements of the National Pollutant Release Inventory (NPRI).

The E2 Regulations can be found at https://www.laws-lois.justice.gc.ca/eng/regulations/SOR-2019-51/index.html. Technical guidelines for the E2 Regulations is available at https://www.canada.ca/en/environment-climate-change/services/environmental-emergencies-program/regulations/technical-guidelines.html.

The NPRI can be accessed at https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report.html - pollutant-release-inventory/report.html.

3.0 ALTERNATIVES

3.1 Alternatives to the Undertaking

The EIS shall include a detailed analysis of the advantages and disadvantages to the environment of the undertaking as proposed; an analysis of the alternatives to the undertaking; and a summary with clearly described methods and sufficient information to justify the selection of the preferred alternative, as well as an explanation for rejecting other alternatives. This subsection shall include a comparative analysis of the environmental effects and technical and economic feasibility of alternatives that led to the

selected Project alternative. The Proponent shall consider describing:

a) functionally different methods of meeting the Project need and achieving the Project purpose; and
b) market and regulatory circumstances that may have influenced the preferred alternative.

3.2 Alternative Methods of Carrying Out the Undertaking

The EIS shall identify and consider the environmental effects of alternative methods of carrying out the undertaking that satisfy the need for the undertaking. The preferred alternatives shall be identified with the selection based on clearly described methods. An explanation shall be included of how environmental factors affect the design and consideration of alternatives.

The EIS shall provide the rationale for selecting Project components and shall discuss the state of the art of the various technologies being proposed. The EIS shall indicate known experience with, and effectiveness and reliability of the equipment, techniques, procedures, and policies, for each alternative, particularly under climate conditions in Newfoundland and Labrador and elsewhere, and their relation to best practice in Newfoundland and Labrador.

The EIS shall analyze and compare the design alternatives for the Project in relation to their environmental and social costs and benefits, including those alternatives which cost more to build and/or operate but which cause less harmful environmental effects. The range of alternatives considered for the annual production and scale of the operation shall be discussed, and the chosen alternative justified. In describing alternative means of carrying out the Project, the Proponent may consider, but not be limited to, a discussion of the following:

a) sources of energy, including, but not limited to, the Newfoundland and Labrador Hydro (NL Hydro) Interconnected System and impacts on the system, etc.;
b) wind turbine size and type (e.g. bladeless) and options for transformer chemicals;

c) solar energy size and type (e.g., photovoltaic, monocrystalline solar thermal energy);
d) hydrogen and ammonia process plant size and type (electrolyzer technology);
e) locations, land area requirements and access routes for wind farms, solar farms, transmission lines, marine terminal, hydrogen and ammonia production facility and proposed expansion, including consideration of locating all wind turbines outside protected public water supply areas or protected wellhead areas;
f) the size, shape, and configuration of areas for which surface rights will be required to support the Project;
g) water source(s) for the Project;
h) effluent discharge points for the Project;
i) order and timelines for construction and operational phases; and
j) aboveground and underground storage of hydrogen and/or carbon dioxide.

4.0 ENVIRONMENT

4.1 Key Issues

To better focus the EIS, the Proponent shall identify the key issues related to the Project. The issues can be revised and adjusted in relation to the information acquired in the field and during consultations held by the Proponent in the preparation of the EIS.

The following factors shall be included in the selection of key issues:

- effects of the Project on existing electrical infrastructure;
- effects of the hydrogen and ammonia production facility on water resources;
- effects of the Project on migratory birds, bats, fish, species at risk and related habitats;
- effects of the Project on provincial roads and infrastructure; and
- effects of the Project on communities, human health and quality of life.

The remainder of Section 4 shall focus on the components relevant to the key issues and

effects of the Project.

4.2 Existing Environment

The EIS shall describe the geographical settings in which all components of the Project will take place. Aerial images and a precise description of geographic boundaries of all proposed Project sites shall be provided including, but not limited to, the following:

- wind farms and solar farms;
- transmission lines, collector lines, access roads, trails, and laydown areas associated with the Project;
- any connection of the Project to the NL Hydro Interconnected System;
- hydrogen and ammonia production facility and ancillary structures, flaring/venting radius, auxiliary power sources, and storage facilities for explosives and hazardous materials, gas and liquid fuel;
- water sources and infrastructure to support hydrogen and ammonia production;
- existing contaminated sites within and near the Project study area;
- pipelines associated with the project;
- above ground and underground sites associated with the storage of hydrogen, ammonia or other materials;
- marine terminal and associated infrastructure;
- mode and route of transport of hydrogen and ammonia from Mortier Bay to markets and/or intermediary facilities (e.g., transshipment terminals);
- concrete batch plants including any temporary and permanent water sources;
- workforce accommodation camps and associated infrastructure; and
- existing and potential quarry sites and burrow pit locations.

The EIS shall describe relevant aspects of the existing environment prior to implementation of the Project, which constitute the reference state of the environment. Using qualitative and quantitative surveys (where applicable), this section shall include a description of the existing bio-physical and socio-economic environment that will be affected or might reasonably be expected to be affected, directly or indirectly, by the

undertaking with emphasis on the valued environmental components (VECs).

The EIS shall consider three spatial boundaries of study areas to describe the existing, pre-Project environment, as follows:

- Project Area: the project footprint including all temporary and permanent areas associated with the Project, and alternatives considered;
- Local Study Area (LSA): the area beyond the project footprint where project effects may extend; and
- Regional Study Area (RSA): the larger area around the LSA (delineated by ecological, social, economic or other appropriate boundaries), including the region where cumulative effects may extend.

Sources may include secondary information such as baseline and follow-up studies conducted for other projects in the region and surveys and data from federal and provincial authorities and municipalities. If the information available from government or other agencies is insufficient or no longer representative, the EIS shall complete the description of the environment by conducting original surveys and research according to generally accepted practices and local knowledge. The EIS shall provide the information required to understand or interpret collected data (e.g. methods, survey dates and times, weather conditions, location of sampling stations). The level of detail shall be sufficient to identify the beneficial effects of the Project, assess adverse environmental effects, develop mitigation measures and monitoring programs to determine the effectiveness of mitigation measures and enable effective follow-up.

A description of the existing environment shall be presented for the Project and each alternative, drawing specific reference to the VECs. Detailed descriptions shall be developed for, at a minimum, the following VECs:

a) atmospheric environment;
b) aquatic environment;
c) terrestrial environment;
d) land and resource use;

e) traditional, cultural and recreational resources;
f) communities; and
g) economy, employment and business.

4.2.1 Atmospheric Environment

The EIS shall describe the relevant components of the atmospheric environment within the study areas of the VECs including, but not limited to, the following:

a) climate information, including monthly and annual minimum, maximum and mean values for precipitation, temperature and wind speed, prevailing wind direction, and storm events;
b) provincial climate change projections for the Burin Peninsula and coastal sea level rise projections for southern Newfoundland;
c) indications of recent climate change observations and trends;
d) historical and current provincial GHG emissions including emissions specifically from the industrial sector;
e) ambient noise (including low frequency noise), vibration and light (including shadow flicker and solar glare);
f) ambient air quality, including dust and particulate matter; and
g) existing weather radar monitoring in/near the study area of the Project.

4.2.2 Aquatic Environment

The EIS shall describe the relevant components of the aquatic environment within the study areas of the VECs including, but not limited to, the following:

a) protected public water supply areas, protected wellhead areas, unprotected public drinking water source areas and private drinking water sources;
b) industrial water supplies;
c) surface and groundwater resources and locations, including identification of those resources planned to supply the hydrogen and ammonia production facility;
d) surface-water flow, groundwater movement and aquifer recharge zones, and the

delineation of drainage basins, including wetlands, at appropriate scales;

e) all streams, waterbodies, and wetlands within the Project boundary or identified on 1:2,500 scale community mapping (within municipal boundaries). Present a list of the streams, waterbodies and wetlands with their name/ID and length or area in a tabular format;
f) hydrologic and hydrogeological assessment of the proposed water-supply for the hydrogen and ammonia production facility, and all testing results for water quantity, including low and environmental flows, and quality, including metals;
g) commercial, recreational, and Indigenous fisheries, including marine aquaculture operations and freshwater fisheries;
h) marine navigation (e.g. commercial and recreational boat traffic) and identification of the marine transportation route for incoming supplies associated with the Project, and outgoing hydrogen/ammonia products;
i) biosecurity at Mortier Bay and the location of the marine terminal in relation to aquatic invasive species and the movement of international vessels;
j) characterization of fish habitat and fish populations by species and life stage affected by the Project including, but not limited to, a description of species of special concern, threatened and endangered as per the **Species at Risk Act (SARA)**, NL **Endangered Species Act**, Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and Atlantic Canada Conservation Data Centre (ACCDC);
k) an assessment of critical and sensitive habitats for spawning, nursing, rearing, feeding, and migration by fish species; and
l) an assessment of work windows and sensitive times of the year (e.g. migration, feeding and spawning) which are critical for fish populations identified in the Project area.

4.2.3 Terrestrial Environment

The EIS shall describe the relevant components of wetlands and the terrestrial environment within the study areas of the VECs, including, but not limited to, the following:

a) terrestrial flora (including lichens), fauna and unique geology/geomorphology, using ecological land classifications;
b) avifauna, including migratory birds protected by the **Migratory Birds Convention Act** (landbirds, shorebirds, seabirds and waterfowl); and
c) species at risk and of conservation concern and their habitats, including designated critical habitat under the **Endangered Species Act**, **Species at Risk Act**, and areas of conservation concern (e.g. environmentally sensitive areas, such as national, provincial, and regional parks and reserves, ecologically and biologically significant areas (EBSA); protected areas, conservation agreement lands, Municipal Habitat Stewardship Agreement areas, and habitat enhancement projects).

4.2.4 Land and Resource Use

The EIS shall describe relevant land and resource use within the study areas of the VECs, including, but not limited to, the following:

a) existing electrical infrastructure;
b) current and historic land use for mining, mineral exploration, and quarrying activities, including the presence of known mineral occurrences of potential economic significance;
c) existing land and marine based aquaculture facilities (including hatcheries);
d) commercial, recreational and Indigenous fisheries;
e) domestic and commercial wood harvesting areas; and
f) land tenure, including, but not limited to, the following:
    i. Crown lands;
    ii. private land ownership;
    iii. land tenure under the **Petroleum and Natural Gas Act**, **Mineral Act** and **Quarry Materials Act**;
    iv. municipalities under the **Town and Local Service District Act**; and
    v. protected roads and municipal plans / development regulations / interim development regulations under the **Urban and Rural Planning Act**.

4.2.5 Traditional, Cultural and Recreational Resources

The EIS shall describe relevant traditional, cultural and recreational resources in the study areas of the VECs, including, but not limited to, the following:

a) historic and archaeological resources;
b) paleontological resources;
c) architectural resources;
d) burial, cultural, spiritual and heritage sites;
g) natural attractions and recreational activities including scenic lookouts, campgrounds, cabins, hiking and multi-use trails, hunting, fishing, swimming, berry picking, etc.);
h) tourism operators (including the Fortune Ferry Terminal to Saint-Pierre & Miquelon), licensed outfitters and guiding operators; and
i) landscapes and viewscapes, including the extent of developed and undeveloped land.

4.2.6 Communities

The EIS shall describe relevant community elements in municipalities, local service districts and unincorporated communities in the study areas of the VECs, including the following:

a) population demographics and health status, including physical, mental, and social well-being;
b) family life, recreation, and culture;
c) education and training facilities and programs;
d) housing, accommodations, and property values;
e) fire and emergency services;
f) public health care services and services provided by non-profit and community-based organizations including mental health and addiction services, social programs, and other community services;

g) active municipal, governmental or non-governmental working groups or committees; and
h) municipal infrastructure or services to be used by the Project and the capacity of the infrastructure and services to support the Project, including human resources, equipment and training.

4.2.7 Economy, Employment and Business

The EIS shall describe relevant economy, employment and business elements in the study areas of the VECs, including the following:

a) economy of the region;
b) existing industries including, but not limited to:
    i. tourism;
    ii. traditional, cultural and recreational establishments;
    iii. mining, mineral exploration and quarrying;
    iv. commercial, recreational, and Indigenous fisheries including marine aquaculture and freshwater fisheries; and
    v. other major employers.
c) employment and the availability of skilled and unskilled labour in the region and in the province;
d) employment equity and diversity including under-represented groups; and
e) business capacity relative to goods and services.

4.3 Baseline Studies

Baseline studies shall be developed for specific components of the existing environment to provide a more detailed analysis of existing conditions in biophysical and socio-economic environments that could be affected by the Project, in the immediate Project vicinity and beyond. Each baseline study shall be a stand-alone document which may be appended to the EIS upon submission, and the results of each study shall be included and referenced in the EIS. Where new information becomes available, additional baseline studies may

be required. Baseline surveys shall be conducted in accordance with guidance provided by the jurisdictional authority(ies) and shall describe components of the existing environment and environmental processes, their interrelations and interactions, and their variability over time scales appropriate to the effects analysis.

Where appropriate and possible to do so, the EIS shall present a time series of data and sufficient information to establish the averages, trends, and extremes of the data that are necessary for the evaluation of potential environmental effects. For key environmental and social components, the Proponent should consider how far back in time and how far into the future the study should be conducted. Rationale for the temporal boundaries should be provided.

The baseline data should be suitable to assess effects within and across the Project area, LSA or RSA. The level of detail shall be sufficient to:

- identify and assess any adverse environmental effects that may be caused by the Project;
- identify and characterize the beneficial effects of the Project;
- develop mitigation measures and monitoring programs where appropriate, to determine the effectiveness of mitigation measures; and;
- provide the data necessary to enable effective follow-up.

Baseline studies generally have the following format:

a) Rationale/Objectives: in general, the baseline studies should be conducted to obtain all required data for use in determining the potential for effects on VECs as well as for monitoring and follow-up programs.
b) Study Area: the boundaries of the study area shall be defined depending on the characteristics of one or more VECs being investigated.
c) Methods: methods shall be proposed and developed by the Proponent in consultation with resource agencies, as appropriate. The methods used in each baseline study shall be described in the EIS.
d) Study Outputs:

a. study outputs shall be proposed by the Proponent. Information and data generated shall be sufficient to establish baseline conditions and adequately predict the effects on VECs to determine monitoring and follow-up requirements;
b. all maps are to be presented using Geographic Information System (GIS) and associated shapefiles are to be provided in digital format;
c. raw data shall be included in the Appendix in electronic tabular form and as digital geospatial data for GIS; and
d. identification of all information sources.

Baseline studies shall be prepared for various components of the atmospheric, aquatic and terrestrial environments and land and resource use.

4.3.1 Atmospheric Environment

The atmospheric environment is defined as air quality and the acoustic and visual environments (e.g., noise, vibrations, solar glare and shadow flicker) within the vicinity of the Project. The atmospheric environment has been selected for a baseline study to understand the effects of the Project on human health and safety, ecological health and aesthetics, and potentially sensitive human and wildlife receptors.

The baseline study of the atmospheric environment shall be focused on, at a minimum, the following components:

a) Air Quality;
b) Noise;
c) Vibration;
d) Solar Glare; and
e) Shadow Flicker.

a) The EIS shall assess the ambient air quality conditions in the Project areas, including air emission sources and dust lift-off (e.g., diesel generators, heavy

equipment, roads, laydown areas, stockpiles, etc.). The study shall compare the observed air quality to acceptable standards and shall consider the effects of air quality on nearby human and animal receptors, including habitat.

b) The effects of noise from the Project, whether strong blasts of short duration or low level, long- term, noise may have an adverse effect on the receiving environment, including human perception of quality of life and effects on migratory corridors and connectivity between seasonal habitats. The baseline study shall assess and report on ambient noise conditions at each of the wind farms, at the hydrogen and ammonia production facility, and at the marine terminal, including baseline ambient noise surveys. Information on typical sound sources, decibel levels, geographic extent and temporal variations shall be included. The baseline study shall compare observed noise levels to acceptable standards.

c) Vibration from the construction and operation of wind turbines and other activities (e.g., pile driving) may have an effect on the receiving environment, including human and animal receptors. The baseline study shall assess and report on ambient vibrations at each of the wind farms and the marine terminal site and shall provide the distance of the nearest wind turbines and marine terminal to, at a minimum, the following features:

    i. nearest temporary and permanent residential dwellings and commercial and industrial sites;
    ii. municipal boundaries, land use planning areas and infrastructure;
    iii. communities and jurisdictions without municipal plans and development regulations;
    iv. traditional, cultural and recreational sites;
    v. tourism operators and attractions (including the Fortune Ferry Terminal to Saint-Pierre & Miquelon), licensed outfitter camps and trails;
    vi. domestic wood cutting areas;
    vii. industrial, private and public water supplies;
    viii. existing electrical infrastructure; and
    ix. commercial fishing areas, navigation routes and aquaculture sites.

    Information on typical vibration sources, geographic extent and temporal variations

(i.e. seasonal, day or night, etc.) shall be included. The baseline study shall compare observed vibration levels to acceptable standards.

d) Solar panels may reflect some light and can cause glint (a momentary flash of bright light) and glare (a continuous source of bright light). Reflections from solar panels can be a nuisance to nearby residents and have the potential to risk public safety if a driver is affected. The baseline desktop analysis shall consider the angles of solar panels, the path of the sun, the panel array, shape and reflectivity characteristics to calculate the amount of glare expected at each specified observation point and along each observation route. The analysis will provide information on the length of time that glare may affect receptors, and the time of day and month it is most likely to be expected. The analysis will consider both expected and worst-case scenarios where clear sky conditions are assumed for all days modelled to determine any possible time that glare has the potential to occur.
e) Shadow flicker (daytime) and night flicker (nighttime) is the effect of the sun shining through the rotating blades of a wind turbine, the effect of rotating blades of a wind turbine blocking a light source at night (e.g., moon light) casting a moving shadow, or the blinking of many turbine navigation lights causing pulse lighting. Bright lights and shadow flicker can affect humans and avian species, especially during periods of fog, drizzle, and haze. The baseline study shall describe ambient light conditions, including nighttime illumination levels during different weather conditions and seasons at each of the wind farms, and at any other areas where Project activities could have an effect on light levels. The baseline ambient light conditions are needed to inform modelling of shadow flicker, to determine the potential impacts on residents and other sensitive receptors that might be affected, under expected and worst-case scenarios.

4.3.2 Aquatic Environment

The baseline study of the aquatic environment shall be focused on, at a minimum, the following components:

a) Water Resources and Use in the Project study area;
b) Wastewater Discharge; and
c) Fish[1] and Fish Habitat.

a) Water Resources and Use in the Project study area: the Project is proposing to use Linton Lake near the town of Marystown as a primary water source to supply its hydrogen and ammonia production facility. The baseline study will describe the relevant components of the water resources and wetlands within the study areas of the hydrogen and ammonia generation facility, including the following:
    i. a water balance study utilizing local empirical data to validate results and consider environmental flows and low flow (drought) conditions to determine the safe yield for this water source;
    ii. hydrological features such as watershed areas and the location of rivers and river inputs;
    iii. surface water resources, surface water flow, land cover change and its impacts on surface water flow including changes to peak flows;
    iv. ground water resources, groundwater movement, base flow and aquifer recharge zones;
    v. areas where work will be undertaken within 15 metres of a water body, including wetlands, stream crossings, culverts, bridges, outfalls, infilling, etc.;
    vi. identification of an alternate water source, that isn't used as part of a public drinking water system, to supply the production facility;
    vii. hydrologic/hydrogeologic assessment of the water-supply, including the drilling of appropriate number of monitoring and production wells and all testing results for quantity and quality (including metals);
    viii. survey of existing public drinking water source areas that may be affected, including watershed or recharge areas and characteristics, land cover assessment, and a water quality assessment; and

[1] fish are defined as: parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals

ix. survey of existing private water supplies that may be affected.

The information required by part (a) of the baseline study is needed to inform modeling to determine whether the planned water withdrawal from Linton Lake can sustain the hydrogen and ammonia production facility for its projected lifetime, and the effects of the water withdrawal on water quality, water quantity, fish and fish habitat, and other users of the watershed.

b) Wastewater Discharge: the Project is proposing to discharge effluent/wastewater from the hydrogen and ammonia production facility into the existing receiving environment. The baseline study shall characterize the effluent/wastewater, estimate the annual volume of discharge and describe the receiving environment for effluent/wastewater discharged during hydrogen and ammonia production. This information is needed to assess the effects of effluent/wastewater discharge on the receiving environment, which may include residuals of any treatment needed to produce required water quality for hydrogen and ammonia production or other desired use.

c) The Fish and Fish Habitat component of this baseline study shall describe, at a minimum, the limnology, hydrology, freshwater and marine biota, fish species (i.e. freshwater and marine species including marine mammals), associated habitats and habitat distribution that have the potential to be affected by Project activities. Information may be based on available published data and community consultation and shall include the results of on-site baseline surveys. Baseline surveys shall be conducted in accordance with direction as provided by the Department of Fisheries, Forestry and Agriculture (Wildlife Division) and the Department of Fisheries and Oceans Canada and shall be designed to:

   i. contribute to the development of mitigation measures to comply with the Fish and Fish Habitat Protection Provisions of the **Fisheries Act**;
   ii. contribute to the development of a conceptual decommissioning and rehabilitation plan;
   iii. provide necessary baseline data to support long-term monitoring programs that assess the effectiveness of mitigation measures and potential offsetting

plans;

iv. characterize fish and fish habitat where Project activities have the potential to result in the death of fish or the harmful alteration, disruption and destruction of fish habitat as described in the Fish and Fish Habitat Protection Provisions of the **Fisheries Act** (i.e., Project footprint, upstream and downstream); and

vi. list any species at risk that are known to be present (as per the **Species at Risk Act (SARA)**, NL **Endangered Species Act**, Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and Atlantic Canada Conservation Data Centre (ACCDC).

The following process shall be followed for baseline characterization of freshwater and marine fish and fish habitat:

- all waterbodies and watercourses (permanent and intermittent) that may be directly or indirectly affected by the proposed work shall be identified and listed (by examining quality aerial and satellite imagery, publicly available information, watercourse connectivity, existing literature, and professional knowledge);
- fish habitat at all watercourse crossing locations shall be characterized (channel status, habitat type, estimated width, riparian vegetation, dominant substrate, slope, adjacent relevant features) and assigned a size (small, medium, or large) using aerial and satellite imagery; and
- fish shall be characterized by species and life stage, and critical and sensitive habitats for spawning, nursery, rearing, feeding and migration shall be identified using existing available literature.

Further baseline characterization shall be conducted through field studies for all affected waterbodies and a subset of watercourse crossings (both upstream and downstream from the crossing) for which there is potential or confirmed fish habitat. Field study sites shall be chosen in a representative manner such that the habitat types affected by the Project are adequately captured. Scientific rationale shall be provided to justify selection. Note that all scheduled salmon rivers and all watercourse crossings identified as sensitive or

important habitat will require field baseline characterization as described below. Consult with Fisheries and Oceans Canada and the Provincial Department of Fisheries, Forestry and Agriculture for advice on watercourse crossings to be selected for field surveying and further baseline characterization.

Baseline characterization of fish and fish habitat (freshwater and marine) shall include the following:

- for each potentially affected waterbody or watercourse that has the potential to be frequented by fish, provide the location, distribution, condition and surface area of potential and confirmed fish habitat and a detailed assessment of physical and biological habitat characteristics. Present information as maps using satellite imagery overlaid with relevant information and text description, with associated summary tables. Physical and biological habitat characteristics shall be described using the following guidance documents:
    - Standard Methods Guide for Freshwater Fish and Fish Habitat Surveys in Newfoundland and Labrador: Rivers and Streams (March 1998);
    - Quantitative Electrofishing in Newfoundland and Labrador. Results of Workshops to Review Current Methods and Recommended Standardization of Techniques (May 1995); and
    - Standard Methods Guide for the Classification/Quantification of Lacustrine Habitat in Newfoundland and Labrador (DFO, July 2001);
- consult with Fisheries and Oceans Canada and the Provincial Department of Fisheries, Forestry and Agriculture for methodologies to be selected for field surveying.

4.3.3 Terrestrial Environment

The baseline study of the terrestrial environment shall be focused on, at a minimum, the following components:

a) Unique Geology/ Geomorphology based on an Ecological Land Classification Model;

b) Non-Avifauna, Non-Flora Species at Risk and Species of Conservation Concern and Relevant Habitat;
c) Plants and Lichen and Relevant Habitat;
d) Avifauna and Avifauna Species at Risk and Relevant Habitat;
e) Areas of Conservation Concern; and
f) Wetlands.

a) The Unique Geology/ Geomorphology component of this baseline study shall be based an Ecological Land Classification (ELC) Model. Along with the datasets outlined in the registration document, the ELC shall include the provincial Forest Resource Inventory and bedrock geology. The Proponent shall acquire high-resolution aerial imagery where available. The ELC shall provide information regarding the distribution of large trees which may provide substrate for rare lichens (for example, balsam fir trees having diameter at breast height of greater than 25 cm for Erioderma species, and yellow birch, red maple, and trembling aspen trees having diameter at breast height of greater than 25 cm for Degelia plumbea). Bedrock geology information shall be included particularly for volcanic mafic and volcanic mafic marine, as these outcrops tend to support rare flora. The baseline study shall include at least the following information:
    i. datasets used;
    ii. source and resolution of the datasets/imagery;
    iii. spectral bands used to develop the ELC (as appropriate);
    iv. classification methods;
    v. algorithm(s) used; and
    vi. number of field verification plots sampled and how they were chosen.
b) The Non-avifauna, Non-flora Species at Risk and Species of Conservation Concern and Relevant Habitat component of this baseline study shall address baseline data requirements to support the evaluation of environmental effects and/or to develop mitigation measures and follow up monitoring programs. The baseline study shall describe at least the following VECs:
    i. a pre-construction bat-monitoring program, which must include the active

bat season (April 15 – October 31) to obtain complete information on spring migration, summer resident bat activity, and fall migration. Protocols must be obtained from the Department of Fisheries, Forestry and Agriculture - Wildlife Division;

ii. a pre-construction survey for caribou must be included. Further surveys may be required based on the information provided. Survey protocols must be obtained from the Department of Fisheries, Forestry and Agriculture - Wildlife Division;

iii. a pre-construction survey for moose must be included. Further surveys may be required based on information provided. Survey protocols must be obtained from the Department of Fisheries, Forestry and Agriculture - Wildlife Division; and

iv. a pre-construction baseline survey for muskrat must be included. Survey protocols must be obtained from the Department of Fisheries, Forestry and Agriculture - Wildlife Division.

c) The Plants and Lichen and Relevant Habitat component of this baseline study shall address baseline data requirements to support the evaluation of environmental effects and/or to develop mitigation measures and follow up monitoring programs. The baseline study shall include a comprehensive pre-construction survey for plants and lichen (including species listed under the **Newfoundland and Labrador Endangered Species Act**, the federal **Species at Risk Act**, and species of conservation concern). A complete list of rare plants/lichen and plant/lichen species at risk in the Project area is to be provided using current S-ranks. A report of the findings as well as a digital GPS plant and lichen locations database and survey tracks must be submitted to the Department of Fisheries, Forestry and Agriculture - Wildlife Division for approval. Further surveys may be required based on the information provided.

d) The Avifauna and Avifauna Species at Risk and Relevant Habitat component of this baseline study shall address baseline data requirements to support the evaluation of environmental effects and/or to develop mitigation measures and follow up monitoring programs. The baseline study shall describe at least the

following VECs:

i. avifauna, including migratory birds protected by the **Migratory Birds Convention Act (MCBA)** (landbirds, shorebirds, seabirds, and waterfowl), including species listed under the Newfoundland and Labrador **Endangered Species Act**, the federal **Species at Risk Act**, and species of conservation concern and their habitat. Birds protected under the **MBCA** are specifically named at Environment Canada, Birds Protected in Canada under the **Migratory Birds Convention Act** https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal- protection/convention-act.html. Preliminary data from existing sources shall be gathered on year-round migratory bird use of the area (e.g., winter, spring migration, breeding season, fall migration). In addition to information obtained from the Atlantic Canada Conservation Data Centre (ACCDC) and naturalists, other relevant datasets shall be consulted, such as those available from:
    - Bird Studies Canada's "Nature Counts" web portal (http://www.birdscanada.org/birdmon/default/datasets.jsp);
    - the Quebec Breeding Bird Atlas 1984-89 (Les oiseaux nicheurs du Québec: atlas des oiseaux nicheurs du Québec méridional). More information is available at: https://www.atlas-oiseaux.qc.ca/; and
    - other data and projects, based on engagement with government and other agencies, and local communities and the public;

   Monitoring is to begin during the construction year (including radar and acoustic) and collected year-round under various types of weather conditions, for a minimum of 2 years, to assess impacts on migratory bird populations and determine the need for additional mitigation and/or inform future guidance;

ii. Nightjar surveys shall be conducted following the Canadian Nightjar Survey Protocols (2022);

iii. Short-eared Owl surveys shall be conducted following protocol from the Department of Fisheries, Forestry, and Agriculture -Wildlife Division; and

iv. Piping Plover surveys shall be conducted following protocol available from Environment and Climate Change Canada.

The EIS should specifically provide a summary of the baseline information gathered from other sources (such as those identified above), and reference to the sources used throughout the EIS.

e) The Areas of Conservation Concern component of this baseline study shall identify, at a minimum, environmentally sensitive areas such as national, provincial, and regional parks and reserves; ecologically and biologically significant areas (EBSA); protected areas; conservation agreement lands; and habitat enhancement projects. The baseline study shall demonstrate the interaction of the Project areas with the environmentally sensitive areas.

f) The Wetlands component shall focus on the wetlands within the vicinity of the Project that could be affected by the Project. Wetlands have been included as a VEC because of their importance to Project planning and potential to be affected by Project activities. Wetlands within the Project areas shall be classified according to the Canadian Wetland Classification System (National Wetlands Working Group 1997). Efforts should focus on collection of data for wetlands with the greatest potential to be affected (i.e., within the Project footprint), while collecting data at the appropriate scale for regional comparisons. An overview of the key plant communities and animals that rely on wetlands shall be presented. Wetlands may be affected by Project activities associated with the installation of Project components that will result in clearing of or disturbance to natural vegetation, site drainage or ground disturbance (e.g., grubbing, grading, and excavation).

4.3.4 Land and Resource Use

The baseline study of land and resource use shall focus on, at a minimum, the following components:

a) Provincial Road Network; and
b) Industrial Land Use.

a) The provincial road network may be affected by changes to catchment areas, which, in turn, may affect drainage infrastructure (e.g., culverts) along the province's road network. The Provincial Road Network component of this study shall be focused on, at a minimum, the following components:
    i. the location of major Project components to the provincial road network;
    ii. the location of drainage infrastructure potentially affected by development of the Project from changes in surface runoff; and
    iii. locations where Project development may alter the characteristics of the catchment area for provincially owned drainage infrastructure.

    This information shall be used to assess the effects of the Project on the provincial road network, and measures to mitigate the effects.
b) The proposed areas for Project components overlap, or lie in close proximity to, existing and historic industrial land uses or planned industrial land uses, and areas that may reasonably be expected to be used for industrial purposes in the future, based on publicly available data and analysis. This baseline study shall describe, at a minimum, the following industrial land use within or adjacent to the Project study areas, and the interaction of the Project with those industrial use:
    i. Existing Electrical Grid;
    ii. Mining and, mineral exploration, and quarrying; and
    iii. Aquaculture and Fisheries.

i. Existing Electrical Grid

The baseline study shall describe components of the province's existing electrical power supply infrastructure in the study areas and shall include, but not be limited to, a discussion of the following:

- components of the province's existing electrical infrastructure in the study area;
- the Project design's technical features and specifications of all major equipment, including capacity and forecast annual energy supply from the battery energy storage system and the Proponent's thermal generation system, both to and from the NL Hydro Interconnected System. This would serve to inform operational

considerations with respect to interconnection to the province's electrical grid and the potential need for further development of existing facilities to integrate the Project and associated cost impacts;

- the geographical footprint and routing to assess proximity to existing infrastructure and any consequential risk of interference, including but not limited to the province's high voltage direct current infrastructure; and
- demonstration that access to the energy required from the electrical grid has been secured from NL Hydro.

ii. Mining, mineral exploration, and quarrying

The baseline study shall describe overlap of the study areas with areas subject to existing or historic mining, mineral exploration and quarrying and areas that may reasonably be expected to be subject to one or more of these activities in the future. The baseline study shall describe, at a minimum:

- historic and current land use for mineral exploration and mining, including the presence of known mineral occurrences of potential economic significance and geoscientific indicators of the potential for future mineral discoveries;
- historic and current land use for quarrying, including the presence of known deposits of granular aggregate and the presence of bedrock suitable for quarrying; and
- potential options for underground storage of carbon dioxide, hydrogen or other gases and the interaction of those sites with the current disposition of mineral rights.

This information shall be used to assess the effects of the Project on mining, mineral exploration and quarrying, and measures to mitigate the effects.

iii. Aquaculture and Fisheries

The baseline study shall describe existing aquaculture activities and infrastructure and the overlap of the Project with the aquaculture industry and commercial, recreational and

Indigenous fisheries in the Project study areas, including but not limited to:

- existing marine-based aquaculture facilities and operations and the scale of operations, the location of aquaculture infrastructure on land and in the marine environment, and the proximity of Project components to land and marine aquaculture sites;
- commercial, recreational, and Indigenous fisheries;
- sensitive freshwater fish habitat that may become accessible to fishers via newly constructed access roads for the Project; and
- the importance of biosecurity protocols in the marine environment to prevent the introduction of aquatic invasive species, and how the presence of such a species could adversely affect the aquaculture industry.

4.3.5 Traditional, Cultural and Recreational Resources

Land use may be positively or negatively affected by changes to the physical and socioeconomic environment. The Traditional, Cultural and Recreational Land Use component of this baseline study shall identify traditional, cultural and recreation land use in each of the sites proposed for wind and solar energy generation and marine terminal development. Consultation, including surveys and interviews, with the public, municipalities, local service districts, community groups and organizations and known user groups will inform the baseline study. Specific land use, land use activities and the frequency of those activities, and the geographic areas of use shall be documented in the baseline study and overlaps with the Project study areas shall be mapped or otherwise illustrated. This information is needed to understand the importance of traditional, cultural and recreational land use to local residents and other users, and for the development of measures to mitigate the effects of the Project on those affected.

5.0 DATA GAPS

The EIS shall explain any extrapolation, interpolation or other manipulation applied to the baseline data used to describe environmental conditions in the study areas. Any

information gaps from a lack of previous research or practice shall be described indicating information that is not available or existing data that cannot accurately represent environmental conditions in the study areas over four seasons. Previous research should be relevant both temporally and spatially. If data gaps remain, the EIS shall describe its efforts to resolve the data gaps, including any direct consultation with governments, non-government organizations, the public and others.

6.0 ENVIRONMENTAL EFFECTS

6.1 Predicted Future Condition of the Environment if the Undertaking Does Not Proceed

The EIS shall describe the predicted future condition of the environment within the expected life span of the Project if the Project were not to proceed. The predicted future condition of the environment shall help to distinguish Project related effects from environmental change due to natural processes.

6.2 Predicted Environmental Effects of the Undertaking

The EIS shall contain a comprehensive analysis of the predicted environmental effects of each Project alternative for the VECs. If the effects are attributable to a particular phase of the Project (construction, operation and maintenance, decommissioning and rehabilitation), to a particular component, or to accidents or malfunctions, then they shall be designated as such. Predicted environmental effects (positive and negative, direct and indirect, and short and long-term) shall be defined quantitatively and qualitatively, where applicable, for each Project alternative and for each VEC. Environmental-effects predictions shall be explicitly stated and the theory or rationale upon which they are based shall be presented in terms of the following parameters:

- nature;
- magnitude (qualitative and quantitative);
- geographic (spatial) extent;

- timing, duration and frequency;
- degree to which effects are reversible or can be mitigated;
- ecological context;
- level of knowledge;
- the capacity of renewable resources that are likely to be significantly affected by the Project, to meet the needs of present and future generations;
- the extent to which biological diversity is affected by the Project; and
- the extent of application of the precautionary principle to Project mitigation measures.

The EIS shall predict the environmental effects of the Project and each alternative, drawing specific reference to the VECs. Predicted environmental effects of the Project shall include, but not be limited to, a comprehensive analysis of the following:

a) The effects of all phases of the Project on human health and quality of life, including but not limited to:
    i. vibrations, noise emissions and noise levels, including sustained low frequency noise;
    ii. light emissions, solar glare, shadow flicker and nighttime flicker;
    iii. dust and air emissions including atmospheric dispersion modeling of air emissions from the Project and the results compared to acceptable standards;
    iv. ice throw from wind turbines;
    v. weather radar;
    vi. domestic wood cutting areas;
    vii. traditional, cultural and recreational activities;
    viii. private water supplies;
    ix. developed areas; and
    x. viewscapes.

b) The EIS shall assess the boomtown effects of the Project on community health

and services, including but not limited to the following factors:

i. food security;
ii. employment and employment equity and diversity including under-represented groups;
iii. business capacity relative to goods and services;
iv. housing, accommodations and property values;
v. health care and community services, including mental health and addiction services and social programs;
vi. fire and emergency services;
vii. education and training services and facilities;
viii. municipal infrastructure or services to be used by the Project and the capacity of the infrastructure and services to support the Project; and
ix. green spaces.

c) The EIS shall assess the effects of the Project on surface water bodies, wetlands and groundwater aquifers, including but not limited to the following:

i. changes in nearby surface and groundwater quality and quantity resulting from land cover change and water withdrawals from the Project, including potential effects on river and stream peak flows and industrial and other users of nearby surface water and groundwater aquifers;
ii. effects of blasting on any dams within or adjacent to the Project area;
iii. effects of water withdrawal for the hydrogen and ammonia production facility on surface water flow, groundwater movement and aquifer recharge zones;
iv. effects of Project components (e.g., wind turbines and associated infrastructure) on water quality in protected public water supply areas, protected wellhead areas, unprotected public drinking water source areas, and private water sources;
v. effects of wastewater discharge from any treatment needed to produce required water quality for hydrogen/ammonia production or other desired use, on receiving environment;
vi. capacity of the receiving environment to manage wastewater discharge

from the hydrogen/ammonia production facility;

vii. effects on existing and potential commercial, recreational, and Indigenous fisheries and aquaculture operations; and

viii. effects on marine navigation (e.g. commercial and recreational boat traffic) and biosecurity in the port.

d) The EIS shall assess the effects of the Project on fish and fish habitat, including critical and sensitive times and habitats, shall be assessed for all phases of the Project. For each freshwater body and watercourse and the marine environment that may be affected (directly or indirectly) by the Project and has the potential to be frequented by fish, the following must be documented and considered in the determination of effects:

i. potential effects to fish and fish habitat, interactions between the Project and these effects, and indicators that will be used to measure these effects;

ii. changes in waterbodies or watercourses potentially affecting fish passage (upstream and downstream);

iii. changes to riparian areas, littoral zones, or areas at higher elevation (e.g., the removal of vegetation causing higher flows of sediments), that could affect fish and fish habitat, and productivity;

iv. any alteration to accessibility or use of habitat, including residence and critical habitat;

v. risk of fish mortality, including that associated with noise and vibrations caused by blasting (above ground and underground) and other activities in or near the aquatic environment; and entrapment, impingement, crushing, burial or entrainment;

vi. potential introduction or movement of aquatic invasive species, including pathogens, through Project work and activities;

vii. changes to fish and fish habitat as a result of water quality changes from potential discharges to the aquatic environment, effluent at the discharge point and in the receiving environment, and seepage and runoff from the industrial facility and marine terminal not expelled through a discharge point;

viii. for linear Projects, a description of watercourse crossing techniques to be used and the criteria for determining the techniques proposed for each watercourse crossing; and

ix. any other changes resulting from the Project that may affect fish and fish habitat and marine plants.

The EIS shall describe the potential adverse environmental effects of the Project on fish habitat and fish populations by species including species of special concern, threatened and endangered species, and rare species associated with, but not limited to, the following:

i. work windows and sensitive times of the year (e.g. migration, feeding and spawning) which are critical for fish populations identified in the study area;

ii. the site preparation, construction, operation and maintenance, and decommissioning and rehabilitation of Project facilities or infrastructure including, but not limited to:
    - primary and ancillary buildings and structures associated with the wind farms, solar farms, hydrogen/ammonia production facility and marine terminal;
    - blasting, access roads, transmission lines and substations;
    - surface and groundwater management activities;
    - water use / water withdrawal during operations; and
    - turbidity, siltation and other contamination from surface runoff and slope movement; and

iii. in-water works during site preparation, construction, operation and maintenance, decommissioning and rehabilitation, such as:
    - fording, infilling, dredging, dewatering, piling, dredging;
    - removal and placement of aquatic and/or stream side vegetation;
    - installation, maintenance, upgrades and removal of culverts, bridges and water crossings and placement of in-water infrastructure; and
    - changes to natural flow regime.

e) The EIS shall assess the effects of the Project on flora and fauna, including bats, caribou, muskrat and other species at risk and of conservation concerns and their habitat (including critical, sensitive and rare habitat), moose, birds and birds protected by the **MCBA** associated with, but not limited to, the following:
   i. direct and indirect effects of Project works, undertakings and activities during the construction, operation and maintenance, decommissioning and rehabilitation phases;
   ii. interactions with wind turbines, including estimated mortality rates;
   iii. emissions, discharges and releases of substances;
   iv. land disturbance that has the ability to act as temporary habitat for species at risk and species of conservation concern; and
   noise, vibrations and light (including solar glare), and in particular effects on feeding, breeding, movement and migratory patterns.

f) The EIS shall assess the effects of the Project on land use and tenure, including but not limited to:
   i. mining, mineral exploration and quarrying activities, and the accessibility of land that may reasonably be expected to be subject to one or more of these activities in the future;
   ii. existing land tenure under the **Petroleum and Natural Gas Act**, **Mineral Act**, and **Quarry Materials Act**, including restrictions for Project development associated with existing land tenure;
   iii. effects of any potential options for above ground or underground storage of hydrogen and/or ammonia and the interaction of those sites with the current disposition of mineral rights and exploration efforts;
   iv. existing mining and quarrying operations on the Project, specifically but not limited to, the effects of blasting from mining and quarry operations;
   v. existing land tenure, including Crown land tenure and private land ownership and restrictions for Project development associated with existing land tenure;
   vi. land use interactions within the building control lines of protected roads with

and without plans, municipalities with municipal boundaries under the **Towns and Local Service District Act**, and planning areas established under the **Urban and Rural Planning Act**;

vii. tourism establishments and operations, including the Fortune Ferry Terminal to Saint-Pierre & Miquelon, licensed outfitters and guiding operations;

viii. potential effects of vibrations from wind turbines on existing land and marine-based aquaculture facilities and operations;

ix. potential effects of the marine terminal and increased vessel operations on commercial, recreational and Indigenous fisheries and aquaculture operations;

x. potential effects of the marine terminal and increased vessel operations on commercial, recreational and Indigenous fisheries and aquaculture operations; and

xi. potential effects of the introduction of aquatic invasive species, and how the presence of such species could adversely affect the aquaculture industry and commercial, recreational and Indigenous fisheries.

g) The EIS shall assess the effects of the Project on existing electrical infrastructure and the potential implications for the overall provincial and regionally interconnected transmission system, including but not limited to the following:

i. conduct and describe stakeholder consultation regarding whether electrical service has been requested or is available presently and engage with NL Hydro to determine options for obtaining electricity service and to understand the impact on the Island Interconnected System and costs for other customers;

ii. clearly indicate responsibility for the cost of the electrical power infrastructure noted and the cost responsibility of decommissioning the electrical power infrastructure such as the transmission lines and associated equipment;

iii. confirm that sufficient firm power supply currently exists on the Island

Interconnected System to supply the Project, or describe how adding sufficient supply might impact the electricity system including reliability and system costs for ratepayers;

iv. consider and analyze findings and conclusions with respect to compliance obligations with the legislation (e.g., **Public Utilities Act** and the **Electrical Power Control Act, 1994**) and regulation of the electricity system;

v. provide further details on the expected annual energy supply from the Project to NL Hydro in terms of energy, capacity, and price;

vi. provide details on when the Project would require access to transmission resources, including any curtailment considerations and the effect on other customers, both during the period before the wind farm(s) is(are) operational and over the longer term;

vii. provide details on the amount and timing of the intermittent renewable energy resource available for supply to the energy grid when not used for production of hydrogen. This should include details of the anticipated beneficial arrangement with NL Hydro and Newfoundland Power including energy and capacity sales;

viii. provide details on the expected fuel source of the thermal generator including what technology the thermal unit will employ; and

ix. provide details on the proposed high voltage transmission lines, including locations, distances and specifications.

h) The effects of the Project on the Provincial Road Network including but not limited to the following:

   i. effects of changes in runoff on existing drainage infrastructure; and

   ii. how development will alter the characteristics of the catchment areas for provincially owned drainage infrastructure.

i) The effects of the Project on GHG emissions shall be analyzed, acknowledging that the federal and provincial governments have each committed to reductions in GHG emissions by 2030 (i.e., a federal reduction target of 40-45 percent below

2005, and a provincial reduction target of 30 percent below 2005 levels) and to net zero GHG emissions by 2050. A GHG analysis is required because total annual direct Project emissions (i.e., emissions before sequestration activities) will result in an increase in provincial GHG emissions totals. GHG emissions, both within and outside the Project boundary, will be subject to carbon pricing regulations. Further information on emission levels, performance, and reporting requirement can be found in the **Management of Greenhouse Gas Act (MGGA)** and its regulations.

If the facility emits at least 15,000 tonnes of GHG emissions per year within the Project boundary, it will be regulated under Section 4 of the **MGGA** and may be regulated under either section 5 or 5.1 of the **MGGA** and the Management of Greenhouse Gas Regulations. Further, if the facility has the potential to emit 15,000 tonnes of GHG emissions per year, it will be subject to best available control technology (BACT) requirements for activities inside the Project's boundary as outlined in section 12.1 of the Regulations. With respect to section 12.1, the EIS should include a BACT study/analysis where the EIS demonstrates the Project will employ best available control technology. A range of machinery and equipment options should be proposed that are technically and economically feasible and reduce or minimize GHG emissions within the context of other regulatory requirements such as air pollutant, occupational health and safety, and fire and life safety regulations, and identify the recommended approach. The BACT study should focus on direct GHG emissions (i.e., before sequestration) as well as net GHG emissions (i.e., including sequestered carbon dioxide).

6.3 Accidents and Malfunctions

The EIS will identify and describe the potential accidents and malfunctions related to all components of the Project, including an explanation of how those events were identified, potential consequences (including the potential environmental effects), the worst-case scenarios as well as emergency scenarios that can reasonably be expected to occur, and the effects of these scenarios. The EIS will explain the potential quantity, mechanism,

rate, form, and characteristics of the materials likely to be released into the environment during the malfunction and accident events. Potential accidents and malfunctions may include, but not be limited to the following occurrences:

a) accidental spills and/or releases of hydrogen, ammonia, chemicals, pesticides or any potentially hazardous substance on land or in air or water;
b) fire and explosions;
c) traffic accidents;
d) dislodging of a wind tower or turbine blade or solar panel(s);
e) failure of water supply;
f) energy generation/transmission failure;
g) wildlife emergencies/incidents.

The EIS shall assess the likelihood of occurrence and consequence severity of the accidents and malfunctions.

6.4 Cumulative Environmental Effects

The EIS shall identify and assess the Project's cumulative environmental effects. Cumulative effects are defined as changes to the environment and resident species and their habitat in the area due to the Project and combined with the effects of past, present, and reasonably foreseeable future planned projects and/or developments and activities in the area. A project causes a cumulative effect if the potential impacts associated with the undertaking will cause an additive effect when added to other projects in the region and in consideration of climate change. A comprehensive examination of all cumulative effects within the study area must be included. The EIS shall consider the cumulative environmental effects for the life of the Project where those overlap with those of other projects and activities within or near the study area. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out will generally be different from (larger than) the boundaries for assessing the effects of the Project, and shall:

a) identify and justify the environmental components that will constitute the focus of

the cumulative effects assessment, including, but not limited to, mining operations and supporting infrastructure, water resources, marinas, quarries, permanent and temporary dwellings, existing contaminated sites, outfitters and trails (e.g., protected public water supply areas and recreational users in area). The Proponent's assessment should emphasize the cumulative effects on the main VECs that could potentially be most affected by the Project;

b) present a justification for the geographic and temporal boundaries of the cumulative effects assessment;
c) describe and justify the choice of Projects and selected activities for the cumulative effects assessment, including blasting activities during construction and maintenance of the Project; and
d) describe the mitigation measures and determine the significance of the residual cumulative effects.

6.5 Effects of the Environment on the Project

Environmental changes and hazards that may occur and may affect the Project shall be described (e.g. wind, ocean currents, waves, storm surge, algal blooms, severe precipitation events, flooding, wildfire, ice events, etc.). The EIS shall take into account the potential influence of climate change scenarios (e.g. sea level rise, increased severity and frequency of storms and flooding, changes to precipitation quantity and recharge rates), as well as local knowledge. The influence that these environmental changes and hazards may have on the Project, including the effects of ice build-up and release from turbine blades, shall be predicted and described. The environmental effects that may occur as a result of the environment acting on the Project shall be assessed.

Provincial climate change projections for the Burin Peninsula should be considered in the planning for this Project.

7.0 Environmental Protection – Mitigations and Plans

7.1 Mitigations

The EIS shall identify and discuss proposed measures that will be implemented to mitigate the significant adverse effects and enhance beneficial effects of the Project. The rationale for and effectiveness of the proposed mitigation and enhancement measures shall be discussed and evaluated. The EIS, where possible, shall refer to similar situations where the proposed mitigation has proven to be successful. Mitigation failure shall be discussed with respect to risk and severity of consequence.

The EIS shall identify who is responsible for implementing the mitigation measures and the system of accountability, including the obligations of contractors and subcontractors.

Mitigation measures shall be described for the effects identified in subsection 6.2 of the EIS during construction, operation and maintenance, decommissioning and rehabilitation.

Other mitigation measures that were considered may be identified, and the rationale for rejecting these measures explained. The implementation of best available technology and best management practices shall be described. Avoidance of environmental effects through implementation of scheduling and siting constraints and pollution prevention opportunities shall be considered. Trade-offs between costs and predicted effectiveness of the mitigation measures shall be justified.

a) The EIS shall describe measures to mitigate adverse effects of the Project on human health and quality of life, including but not limited to the following:
    i. vibrations, noise emissions and noise levels, including sustained low-level noise;
    ii. light emissions, solar glare, shadow flicker and nighttime flicker;
    iii. dust and air emissions including the installation of air pollution control equipment and Best Available Control Technology for criteria air contaminants;
    iv. ice throw from wind turbines;

v. weather radar;
vi. domestic wood cutting areas;
vii. private water supplies;
viii. traditional, cultural and recreational activities including recreational and Indigenous fisheries;
ix. developed areas; and
x. viewscapes.

b) The EIS shall describe measures to mitigate adverse effects of the Project on community health and quality of life and services including but not limited to the following:
   i. food security;
   ii. employment and employment equity and diversity including under-represented groups;
   iii. business capacity relative to goods and services;
   iv. housing, accommodations and property values;
   v. health care and community services, including mental health and addiction services and social programs;
   vi. fire and emergency services;
   vii. education and training services and facilities;
   viii. municipal infrastructure and/or services to be used by the Project and the capacity of the infrastructure and services to support the Project; and
   ix. green spaces.

c) The EIS shall describe measures that will be undertaken to mitigate the effects of Project operations on water quantity and quality of surface water bodies, groundwater aquifers and wetlands in and adjacent to the Project area, including but not limited to the following:
   i. changes in nearby surface and groundwater quality and quantity resulting from temporary or permanent water withdrawals and land cover change from the Project;

ii. effects of blasting on any dams within or adjacent to the Project area;
iii. water withdrawal for the hydrogen and ammonia production facility on surface-water flow, groundwater movement and aquifer recharge zones;
iv. effects of wind turbines, solar farms and all other associated infrastructure (e.g., access roads, transmission lines, etc.) on water quality in protected public water supply areas, protected wellhead areas, unprotected public drinking water source areas, and private water sources;
v. wastewater discharge containing any treatment needed to produce required water quality for hydrogen/ammonia production or other desired use, on receiving environment;
vi. capacity of receiving environment to manage wastewater discharge from the hydrogen/ammonia production facility;
vii. effects on marine navigation (e.g. commercial and recreational boat traffic) and biosecurity in the port; and
viii. effects of the marine terminal and increased vessel operations on commercial, recreational and Indigenous fisheries and aquaculture operations;

d) The EIS shall describe measures to mitigate the adverse environmental effects of all phases of the Project on fish habitat and fish populations by species, including species of special concern, threatened and endangered species, and rare species associated with, but not limited to, the following:
   i. work windows and sensitive times of the year (e.g. reproduction rearing, feeding, movements, migrations, winter refuge) which are critical for fish populations identified in the study area;
   ii. the construction, operation and maintenance, and decommissioning and rehabilitation of Project facilities and infrastructure including, but not limited to: primary and ancillary buildings and structures associated with the hydrogen and ammonia production facility, wind turbines, solar farms and marine terminal; site preparation, blasting, access roads, transmission lines and substations; surface and groundwater management activities; water

use / water withdrawal during operations; and turbidity, siltation and other contamination from surface runoff and slope movement; and

iii. in-water works during site preparation, construction, operation and maintenance, and decommissioning and rehabilitation, such as: intakes, outfalls and fording; removal and placement of aquatic and/or stream side vegetation; installation, maintenance, upgrades and removal of water withdrawal and discharge infrastructure (freshwater and marine); blasting, infilling, piling, dredging and dewatering; placement of in-water infrastructure in the marine environment; and changes to natural flow regime.

The EIS shall describe:

i. measures to mitigate flow changes resulting from land cover change dewatering activities, ground water management, waste management, and upstream and downstream diversions;
ii. measures to prevent or mitigate the risk of harmful alteration, disruption or destruction of fish, fish habitat, marine plants or death of fish caused by any project activity, including during the sensitive periods and in the sensitive locations (e.g., spawning and migration) for fish and other aquatic species;
iii. measures to prevent the introduction, movement and intrusion of aquatic invasive species during works, undertakings or activities in or near freshwater and marine environments;
iv. how the conditions and measures within the Fisheries and Oceans Canada Standards and Codes of Practice will be implemented for mitigating risks to fish and fish habitat;
v. commitments to consult with Fisheries and Oceans Canada to request a project review if the Standards and Codes of Practice don't apply to Project works, undertakings and activities; and
vi. measures recommended to avoid fish mortality, for example, from dredging, blasting, placement of fill and pile driving in the aquatic environment or nearby, or by fish impingement and entrainment during pumping and water

withdrawal operations (e.g., during the construction of temporary structures, for concrete batching and of hydrostatic tests) or transfer between water segments.

In addition to pertinent above requirements, for marine mammals, specifically:

i. describe the proposed measures to mitigate temporary or permanent changes to marine mammal habitat, or injury or death caused by any Project activity, including during the sensitive periods and in sensitive locations (e.g., feeding, migration); and
ii. consider how timing windows can be used to avoid effects of Project construction on fish and marine mammals during periods of high habitat use and indicate if and how Project activities will adhere to timing windows.

e) The EIS shall describe measures that will be undertaken to mitigate the effects of all phases of the Project on flora and fauna (including bats, migratory birds, birds protected by the MCBA, moose, caribou, muskrat, species at risk and of conservation concern), and their habitat (including critical and sensitive habitat), associated with, but not limited to, the following:

i. direct and indirect effects of Project construction, operation and maintenance, decommissioning and rehabilitation;
ii. interactions with wind turbines, including estimated mortality rates;
iii. standard curtailments for bats that are required and would be implemented for the operational lifespan of the Project, except where an adaptive management framework incorporates other proven tools to effectively detect bats and mitigate bat mortalities, and where the Wildlife Division has formally approved the modification. Operational curtailments are mandatory from thirty (30) minutes before sunset to thirty (30) minutes after sunrise, from July 1 – October 1 when temperatures are 6.0°C or higher. During these times, turbine blades must be programmed to cut-in only when wind speeds exceed 6.0 m/s, and must be locked or feathered at wind speeds ≤6.0 m/s. Describe in the EIS how this information will be incorporated into

Project design;

iv. appropriate measures to minimize the risk of effects to avifauna from all phases of the Project, including consideration of Project effects on wetlands and measures to avoid and reduce wetland disturbance;
v. details of measures to avoid and/or minimize adverse effects to wildlife species, particularly during sensitive time periods, such as breeding and migration, during all phases of the Project;
vi. emissions, discharges and releases of substances;
vii. land disturbance that has the ability to act as temporary habitat for species at risk and species of conservation concern;
viii. direct and indirect effects on individuals and habitat quality due to accidents and malfunctions during all Project phases; and
ix. noise, vibrations and light (including solar glare), and in particular effects on feeding, breeding, movement and migratory patterns.

f) Measures that will be undertaken to mitigate potential land and resource use and tenure conflicts, including but not limited to:
   i. mining, mineral exploration, and quarrying activities including the accessibility of land that may reasonably be expected to be subject to one or more of these activities in the future;
   ii. existing land tenure under the **Petroleum and Natural Gas Act**, **Mineral Act**, and **Quarry Materials Act**, including restrictions for Project development associated with existing land tenure;
   iii. effects of potential options for above ground and/or underground storage of hydrogen and ammonia and the interaction of those sites with the current disposition of mineral rights and exploration efforts;
   iv. effects of existing mining and quarrying operations on the Project, specifically but not limited to, the effects of blasting from mining and quarrying operations;
   v. existing land tenure, including Crown land tenure and private land ownership and restrictions for Project development associated with existing

land tenure;

vi. non-compliance with any Project components as they relate to zoning requirements and development approvals within the building control lines of protected roads and municipal planning areas;

vii. tourism establishments and operations (including the Fortune Ferry Terminal to Saint-Pierre & Miquelon);

viii. measures to prevent the introduction, movement and intrusion of aquatic invasive species during works or activities in or near freshwater and marine environments;

ix. measures to mitigate potential effects on commercial, recreational and Indigenous fisheries;

x. measures to prevent the potential prosecution of fish through increased freshwater fishing activity due to construction and use of new access roads; and,

xi. measures to mitigate impacts of the marine terminal construction, operations and associated marine traffic on fishing and aquaculture operations including a commitment to engage with fish harvesters and aquaculture operators throughout the life of the Project.

g) Measures that will be undertaken to mitigate the effects of the Project on existing electrical infrastructure and the potential implications for the overall provincial and regionally interconnected transmission system, including but not limited to the following:

i. conduct and describe in the EIS stakeholder consultation regarding whether electrical service has been requested or is available presently and engage with NL Hydro to determine options for obtaining electricity service and to understand the impact on Island Interconnected System and costs for other customers;

ii. clearly indicate responsibility for the cost of the electrical power infrastructure noted and the cost responsibility of decommissioning the electrical power infrastructure such as the transmission lines and

associated equipment;

iii. confirm that sufficient firm power supply exists on the Island Interconnected System currently to supply the Project or how adding sufficient supply might impact the electricity system including reliability and system costs for ratepayers;

iv. consider and analyze findings and conclusions with respect to compliance obligations with the legislation (e.g., **Public Utilities Act** and the **Electrical Power Control Act, 1994**) and regulation of the electricity system;

v. provide further details on the expected annual energy supply from the Project to NL Hydro in terms of energy, capacity, and price;

vi. provide details on when the Project would require access to transmission resources, including any curtailment considerations and the effect on other customers, both during the period before the wind farm is operational and over the longer term;

vii. provide details on the amount and timing of the intermittent renewable energy resource available for supply to the energy grid when not used for production of hydrogen. This should include details of the anticipated beneficial arrangement with NLH and NP including energy and capacity sales.

viii. provide details on the expected fuel source of the thermal generator including what technology the thermal unit will employ; and,

ix. provide details on the proposed high voltage transmission lines – locations, distances and specifications.

h) The EIS shall describe measures that will be undertaken to mitigate the effects of all phases of the Project on existing Provincial Road Network including, but not limited to the following:

i. measures to mitigate changes in watershed (catchment) characteristics impacting runoff; and

ii. proposed improvements, to be undertaken by the Proponent, to mitigate runoff impacts including detention considerations and/or replacement of

existing department infrastructure to accommodate increased runoff in a particular catchment area.

i) The EIS shall include an analysis of best available control technologies (BACT) as it relates to GHG emissions. A range of machinery and equipment options should be proposed that are technically and economically feasible and reduce or minimize GHG emissions within the context of other regulatory requirements such as air pollutant, occupational health and safety, and fire and life safety regulations, and identify the recommended approach. Either as part of the BACT analysis or separately, the EIS shall include a plan by which net zero GHG emissions may be realized or maximum GHG reductions will be otherwise realized by 2050.

7.2 Plans

The EIS shall include plans, either in this subsection or as appendices to the EIS, that describe procedures, equipment and responsibilities that are in place to ensure an efficient and effective response to aspects of the Project that could adversely affect the receiving environment. The plans shall be developed for each phase of the Project, including construction, operation and maintenance, and decommissioning and rehabilitation phases and shall include but not limited to, the following plans:

- Emergency Response/Contingency Plan, including Wildlife Response Plan;
- Waste Management Plan;
- Water Management Plan for construction and post construction phase;
- Erosion and Sediment Control Plan;
- Greenhouse Gas Reduction Plan;
- Hazardous Materials Response and Training Plan;
- Transportation Impact Study and Traffic Management Plan;
- Public Participation Plan;
- Workforce and Employment Plan;
- Domestic Wood Cutting Consultation Plan;
- Mineral Resource Industry Consultation Plan;

- Quarry Resources Consultation Plan; and
- Environmental Effects Monitoring Programs (EEMPs):
    - Groundwater and Surface Water Monitoring Program;
    - Avifauna Management Plan; and
    - Outfitter Effects Monitoring Program.

7.2.1 Emergency Response/Contingency Plan, including Wildlife Response Plan

The EIS shall include an Emergency Response/Contingency Plan outlining procedures to respond to accidents, malfunctions and emergencies, including, but not limited to, the following:

a) accidental spills and/or releases of hydrogen, ammonia, chemicals, pesticides or any potentially hazardous substance on land or in air or water;
b) fire and explosion (e.g., hydrogen);
c) traffic accidents;
d) dislodging of a wind tower or turbine blade;
e) hurricanes and other natural disasters;
f) occupational hazards and human injuries;
g) failure of industrial water supply;
h) energy generation/transmission failure;
i) flaring and/or venting of hydrogen, ammonia or other gases in the event of a malfunction;
j) wildlife emergencies/incidents (e.g., bird mortality events of 10 or more birds in a single event, or an individual species at risk during a single event due to collisions with wind energy infrastructure); and
k) impacts to private, semi-private or public drinking water systems.

The Emergency Response / Contingency Plan shall establish an emergency communication strategy with those potentially affected and must describe the capacity of the Proponent / nearby communities to respond to each type of accident, malfunction, or

emergency, including the availability of required response equipment and training.

7.2.2 Waste Management Plan

The EIS shall include a Waste Management Plan that shall describe all liquid and solid waste expected to be generated during construction, operation and maintenance, decommissioning and rehabilitation for all components of the Project, and methods to reduce, reuse, recycle, recover, and/ or manage residual wastes through disposal.

7.2.3 Water Management Plan

A Water Management Plan must be prepared for Project components and infrastructure including wind farms, solar farms, access roads, transmission lines, hydrogen and ammonia production facilities and the marine terminal and port to evaluate the effects of the Project's construction and operation on streams, waterbodies, and wetlands. This Plan shall include:

- all streams, waterbodies, and wetlands within the Project boundary or identified on 1:2,500 scale community mapping (within municipal boundaries) to better understand and plan water-related infrastructure.
- Following the detailed Project plan, a comprehensive Water Resources Management Plan must be prepared to manage stormwater drainage from each wind farm, solar farm, and the hydrogen and ammonia production facilities.
- All stream crossings within the wind farms and solar farms, which will be used only for the operation and maintenance of the infrastructure, must be designed for a 1 in 50-year climate change flow. Stream crossings on access roads that are also accessible to the public must be designed for a 1 in 100-year climate change flow.

7.2.4 Erosion and Sediment Control Plan

The EIS shall include an Erosion and Sediment Control Plan (ESCP) to describe the methods and devices implemented to minimize erosion and sediment loss from the site

as a result of clearing and soil disturbing activities throughout all phases of construction, operation and maintenance, and decommissioning and rehabilitation. The ESCP shall be developed as per the erosion and sedimentation control techniques described in section 3.1 of the Best Management Practices for the Protection of Freshwater Fish Habitat in Newfoundland and Labrador (DFO 2022), available at https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41030217.pdf. The ESCP shall be implemented prior to construction or any Project activity or associated use of access roads and other work areas.

7.2.5 Greenhouse Gas Reduction Plan

The EIS shall include a long-term capital plan through which the Proponent demonstrates how the facility will reduce its emissions over time with the objective of achieving net zero by 2050 or otherwise maximizing annual GHG reductions between start-up and 2050.

7.2.6 Hazardous Materials Response and Training Plan

The EIS shall include a Hazardous Materials Response and Training Plan that describes how fire fighters and first responders in local areas and along transportation routes will be trained to the appropriate National Fire Protection Association (NFPA) Codes and Standards (e.g. NFPA 1072 Hazardous Materials Technician) and any other related codes necessary to execute a Hazardous Materials Response. Vehicles and hazardous materials equipment needed to execute an effective Hazardous Materials Response shall be identified in the plan. In accordance with the requirements of the **Fire Protection Services Act,** training shall meet the approval of the Fire Commissioner. Review by the Fire Services Division of curriculum being offered and developed is applicable.

7.2.7 Transportation Impact Study and Traffic Management Plan

The EIS shall include a Transportation Impact Study and Traffic Management Plan that shall assess and report on the potential effects of transporting oversized and overweight Project materials and equipment over existing roadways, during construction, operation,

maintenance, modification, decommissioning and rehabilitation phases of the Project, that includes but is not limited to the following information:

a) a study of the existing road infrastructure and capacity of the existing roads, bridges, culverts, sign structures, traffic and utility poles to accommodate transportation of oversized and overweight loads during the lifetime of the Project;
b) frequency of travel over proposed routes;
c) the estimated increased deterioration to the existing road infrastructure (e.g. road surface, roadbed, bridges, culverts, etc.) as a result of transportation of oversized and overweight loads associated with the Project, and the estimated increased maintenance requirements for roads, culverts and bridges due to the proposed work;
d) acknowledgement that measures that will be implemented to mitigate any deficiencies in the roads, bridges or infrastructure, including providing alternative access, acknowledging that any engineering design or investigation costs will be at the Proponent's expense;
e) traffic management plans for vehicular traffic during transportation of oversized and overweight loads, including municipal requirements and traffic management plans for the transport of oversized and overweight loads through municipal roadways;
f) identification of provincial access and right of way permit requirements as expected over the life of the Project; and
g) municipal requirements regarding traffic management plans for the municipal road infrastructure.

7.2.8 Engagement and Participation Plan

The EIS shall include an Engagement and Participation Plan that describes how local communities and interested persons can meaningfully participate in the planning of all phases of Project (construction, operation and maintenance, decommissioning and rehabilitation) and how they will continue to be engaged throughout the life of the Project,

including in the monitoring of environmental effects.

7.2.9 Workforce and Employment Plan

The EIS shall include a Workforce and Employment Plan for the construction, operation and maintenance, decommissioning and rehabilitation phases of the Project, which shall be developed in consultation with the Department of Immigration, Population Growth and Skills. The employment plan shall include, but not be limited to the following information for each phase of the Project:

a) National Occupation Classification codes (NOC 2021 or most recent available) at the 5-digit level associated with each position (including the number of positions associated with each NOC code);
b) approximate timelines for each of the positions. This would include the number of positions for each 5-digit NOC 2021 code (or most recent available) throughout the Project at specified time intervals (monthly or at least quarterly) which would show levels of employment throughout the Project timeline;
c) an indication of whether the positions are full-time equivalent or if they are the actual number of positions; if they are indeed the actual number of positions, how many are full time versus part-time;
d) an estimate of the number of apprentices (by level and trade/5-digit NOC 2021 code, or most recent available) and journeypersons required;
e) qualifications, certifications and other requirements, including the need for, location and availability of related training opportunities (e.g., post-journeyperson training) associated with key positions;
f) anticipated source of the workforce, including an estimate of local employment (local area, provincial), an estimate of foreign worker or immigrant employment, and any strategies for recruitment, including both domestic and international. Clarification on whether the Proponent expects to apply to use one of more of the Newfoundland and Labrador Provincial Nominee Program, Atlantic Immigration Program, federal Temporary Foreign Worker Program or federal International Mobility Program. This should also include clarification on which positions would

be direct hires, and which would be from companies contracted to carry out Project work;

g) a commitment to provide quarterly summary reports. These reports would include information on the number employed by 5-digit NOC 2021 (or most recent available), the number of full-time/part- time employees, the number of apprentices (by level) and journeypersons for each applicable 5-digit NOC code, gender and source of the workforce; and
h) a commitment to develop a Benefits Agreement that meets the approval of the Minister of Industry, Energy and Technology. Benefits Agreements must contain a Gender Equity, Diversity, and Inclusion Plan (GEDIP). GEDIP's must receive approval from the Minister of Industry, Energy and Technology and the Minister Responsible for Women and Gender Equality before the commencement of the Project's construction phase.

7.2.10 Domestic Wood Cutting Consultation Plan

The EIS shall include a Domestic Wood Cutting Consultation Plan with domestic users on the Burin Peninsula to identify and address any concerns with the Project and develop appropriate mitigations, in consultation with the Department of Fisheries, Forestry and Agriculture.

7.2.10.1 Mineral Resource Industry Engagement Plan

The EIS shall include a Mineral Resource Industry Engagement Plan reporting on the results of engagement with industry associations, mineral rights holders and other parties engaged in mineral exploration and mining on the Burin Peninsula to identify and address concerns with the Project and develop appropriate mitigations, in consultation with the Department of Industry, Energy, and Technology.

7.2.10.2 Quarry Resources Consultation Plan

The EIS shall include a Quarry Resources Engagement Plan reporting on the results of engagement with industry associations, quarry rights holders and other stakeholders invested in the viability of quarrying in the region to identify and address concerns with the Project and develop appropriate mitigations, in consultation with the Department of Industry, Energy, and Technology.

7.2.10.3 Environmental Effects Monitoring Programs (EEMPs)

The EIS shall describe the environmental and socio-economic monitoring and follow-up programs to be incorporated into construction, operation and maintenance, decommissioning and rehabilitation activities. The purpose of the follow-up and monitoring programs is to verify the accuracy of the predictions made in the assessment of the effects as well as the effectiveness of the mitigation measures. The duration of the follow-up and monitoring shall be as long as is needed to evaluate the effectiveness of the mitigation measures. If the EIS identifies unforeseen adverse environmental effects, the EEMP shall commit to adjusting existing mitigation measures, or, if necessary, develop new mitigation measures. Each EEMP shall demonstrate how local communities and interested persons will continue to be engaged in the monitoring of environmental effects throughout the life of the Project. The proposed approach for follow up and monitoring shall be described and shall include:

a) the objectives of the follow up and monitoring program and a schedule for collection of the data required to meet these objectives;
b) the sampling design, methodology, selection of the subjects and indicators to be monitored, (e.g., climate, water quality, water quantity) and their selection criteria;
c) the frequency, duration and geographic extent of monitoring, and justification for the extent;
d) reporting and response mechanisms, including criteria for initiating a response and procedures;
e) the approaches and methods for monitoring the cumulative effects of the Project with existing and future developments in the Project area;
f) procedures to assess the effectiveness of follow-up and monitoring programs,

mitigation measures and recovery programs for areas disturbed by the Project; and

g) a communications plan to describe the results of follow up and monitoring to interested parties and regulatory agencies.

EEMPs must be described for the following:

7.2.8.1 Groundwater and Surface Water Monitoring Program

A groundwater and surface water monitoring plan must be described that ensures the long-term security of the groundwater resources, and must include a real-time climate, surface water quality and quantity program and groundwater monitoring program that will include the drilling of an appropriate number of monitoring and production wells.

7.2.8.2 Avifauna Management Plan

An Avifauna Management Plan (including Migratory Birds and Species at Risk) should be developed in consultation with Department of Fisheries, Forestry and Agriculture (FFA) and Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) and included in the EIS. The plan should include mitigation measures, monitoring, and adaptive management frameworks for minimizing impacts of the Project on Avifauna. ECCC-CWS' "Wind Turbines and Birds: A Guidance Document for Environmental Assessment" (Environment Canada 2007a), "Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds"(Environment Canada 2007b) and "Environment and Climate Change Canada's Canadian Wildlife Service (Atlantic Region) - Wind Energy & Birds Environmental Assessment Guidance Update" (Environment Canada, April 2022), should be referenced in the development of environmental effects monitoring and post-construction monitoring plan(s). 47

7.2.8.3 Outfitter Environmental Effects Monitoring Plan

The EIS shall describe engagement by the Proponent with the Newfoundland and Labrador Outfitters Association (NLOA), concerns expressed by the NLOA and how those concerns are being addressed. The Outfitter Environmental Effects Monitoring Plan shall include a description of the potential environmental effects of the Project on licensed outfitters, measures to mitigate those effects, and monitoring plans for the life of the Project.

8.0 RESIDUAL EFFECTS AND DETERMINATION OF SIGNIFICANCE

Residual effects are those adverse environmental effects which cannot be avoided or completely mitigated through, or that remain after, the application of environmental control technologies and best management practices. The EIS shall list and contain a detailed discussion and evaluation of residual effects, which shall be defined in terms of the parameters outlined in subsection 6.2.

The EIS shall contain a concise statement and rationale for the overall conclusion relating to the significance of the residual adverse environmental effects. The EIS will, for ease of review, include a matrix of the environmental effects, proposed mitigations, and residual adverse effects.

9.0 ASSESSMENT SUMMARY AND CONCLUSIONS

The EIS shall summarize the overall findings of the environmental assessment, with emphasis on the key environmental issues identified.

10.0 PUBLIC CONSULTATION

Under section 58 of the **Environmental Protection Act**, during the preparation of an environmental impact statement, the Proponent shall provide an opportunity for interested members of the public to meet with the Proponent at a place adjacent to or in the geographical area of the undertaking, or as the minister may determine, in order to:

a) provide information concerning the undertaking to the people whose environment may be affected by the undertaking; and
b) record and respond to the concerns of the local community regarding the environmental effects of the undertaking.

Under section 10 of the Environmental Assessment Regulations, the Proponent shall notify the minister and the public of a meeting scheduled with the public under section 58 of the **Act** not fewer than 7 days before that scheduled meeting.

These concerns shall be presented and addressed in a separate Section of the EIS document. Protocol for the public meeting shall comply with the legislation and with divisional policy included in Appendix B.

11.0 ENVIRONMENTAL PROTECTION PLAN

The Proponent shall prepare an Environmental Protection Plan (EPP) for each construction site for approval by the Minister before commencing Project construction at that site. The EPP shall be a stand-alone document that assigns responsibility to the site foreperson, the Proponent's occupational health and safety staff, the Proponent's environmental staff and any government environmental surveillance staff. The EPP shall address construction, operation and maintenance activities throughout the lifetime of the Project. A proposed Table of Contents and an annotated outline for the EPPs is to be presented in the EIS, which shall address the major construction, operations and maintenance activities, permit requirements, mitigation measures and contingency planning as follows:

a) Proponent's environmental policies and provincial and federal environmental legislation and policies;
b) environmental compliance monitoring;
c) environmental protection measures;
d) mitigation measures;
e) permit application and approval planning;

f) contingency planning for accidental and unplanned events;
g) statutory requirements; and
h) revision procedures and contact lists.

12.0 REFERENCES

The Proponent shall prepare a complete and detailed bibliography of studies used to prepare the EIS. Supporting documentation shall be referenced in the EIS and submitted in separate volumes or attached as an appendix to the EIS.

13.0 PERSONNEL

The names and qualifications of key professionals responsible for preparing the EIS and supporting documentation shall be included. A description of the qualifications of scientists conducting surveys and scientific studies associated with the undertaking shall be provided.

14.0 COMMITMENTS MADE IN THE EIS

The EIS is a statement of the Proponent's environmental conclusions and commitments related to the Project and must be explicitly endorsed by the Proponent. The EIS shall provide a list of all commitments made regarding environmental effects mitigation, monitoring and follow-up. Each commitment must be cross-referenced to the Section and subsection of the EIS where it has been made.

15.0 COPIES OF REPORTS

The EIS should be prepared according with the Guidelines and once completed, the Proponent shall submit printed and electronic copies of the EIS to the Department of Environment and Climate Change as specified below:

- 3 electronic copies (USB drives); and

- 1 paper copy.

The Minister reserves the right to request additional digital and paper copies, if required.

Stand-alone studies associated with the EIS, including baseline studies and all plans required in Section 7 of the Guidelines (above) shall be included in the body of the EIS or as appendices.

The Proponent shall make printed copies of the EIS available at accessible locations or viewing centers in the Project vicinity, to be approved by the Department of Environment and Climate Change.

APPENDIX A

Environmental Protection Act, 2002

Section 57 - Environmental Impact Statement

57. An environmental impact statement shall be prepared in accordance with the guidelines, and shall include,

a) a description of the undertaking;

b) the rationale for the undertaking;

c) the alternative methods of carrying out the undertaking and alternatives to the undertaking;

d) a description of the

   i. present environment that will be affected or that might reasonably be expected to be affected, directly or indirectly, by the undertaking, and

   ii. predicted future condition of the environment that might reasonably be expected to occur within the expected life span of the undertaking, if the undertaking was not approved;

e) a description of the

   i. effects that would be caused, or that might reasonably be expected to be caused, to the environment by the undertaking with respect to the descriptions provided under paragraph (d), and

   ii. actions necessary, or that may reasonably be expected to be necessary, to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment by the undertaking;

f) an evaluation of the advantages and disadvantages to the environment of the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking;

g) a proposed set of control or remedial measures designed to minimize any or all significant harmful effects identified under paragraph (e);

h) a proposed program of study designed to monitor all substances and harmful effects that would be produced by the undertaking; and

i) a proposed program of public information.

APPENDIX B

Department of Environment and Climate Change
REQUIREMENTS FOR PUBLIC MEETINGS/INFORMATION SESSIONS

Purpose: To clarify for Proponents and the public, the format, scheduling, number, notification requirements, etc. for public consultations in relation to undertakings required under the **Environmental Protection Act, SNL 2002 cE-14.2**, (section 58) to prepare an Environmental Impact Statement (EIS).

1. The Proponent is required to conduct public meeting(s) (information sessions) under an EIS process as specified in the legislation. This requirement shall be specified in the Project EIS guidelines.
2. A public meeting shall normally be held in the largest local population centre within the Project area. This shall be the minimum requirement. In addition, when demonstrated public interest or concern warrants, additional meetings may be required. This may take the form of additional meetings to be held in major regional or provincial population centres, or possibly additional meetings within the original community. Such requirements are at the discretion of the Minister based on consensus advice from the environmental assessment committee (EAC) chairperson and based upon public interest as evidenced by public submissions.
3. The format of the public meeting is flexible, and the Proponent is free to propose a suitable format for approval by the EAC. The format may range from formal public meetings chaired by the Proponent or representative with presentations followed by questions and answers, to a less formal open house forum where the public may discuss the proposal with the Proponent or representatives. Other formats may be considered by the EAC. The purpose of the public information session is to provide information concerning the proposed undertaking to those who may be affected, and 2) to record the concerns of the local community regarding the undertaking. Any format must meet these objectives.
4. The Proponent must ensure that each public meeting is advertised in accordance with the following specified public notification requirements, and the advertisement(s) must be included in the EIS (Proponent to substitute appropriate information for italicized items).

PUBLIC NOTICE

Public Information Session on the Proposed
Name of undertaking
Location of undertaking

shall be held at
Date and Time
Location

This session shall be conducted by the Proponent,
Proponent name and contact phone number or email address,
as part of the environmental assessment for this Project.
The purpose of this session is to describe all aspects of the proposed Project and the activities associated with it, and to provide an opportunity for interested persons to request information or state their concerns.

ALL ARE WELCOME

MINIMUM INFORMATION CONTENT OF PUBLIC ADVERTISEMENT

- Minimum newspaper ad size: 2 columns wide and minimum posted ad size: 10 cm x 12cm.
- Minimum newspaper ad frequency (to be run in newspaper(s) locally distributed within each meeting area or newspaper(s) with the closest local distribution area):
    - for dailies, the weekend between 2 and 3 weeks prior to each session and the two consecutive days prior to each session, or
    - for weeklies, in each of the two weeks prior to the week in which the session is to be held.
- Minimum posted ad coverage: In the local Town or City Hall or office, and the local post office, within the Town or City where the meeting is to be held, to be posted continually for not less than 15 days prior to each session. The proponent is advised to request that the ad and/or notice of the meeting be placed on the community web site, for each community within/adjacent to the Project study area, to be posted continually for not less than 15 days prior to each session.
- Any deviation from these requirements for any reason must receive the prior written approval of the Minister. The proponent must provide the chairperson of the EAC with copies of advertisements and public notices.
- The Proponent is advised to propose other effective means of public notice, including social media announcements, for the Minister's consideration and approval.