Engineering to FID for Green Energy Hub Wind Farm

REQUEST FOR PROPOSAL (RFP): NARC/GEH/RFP/WFTL/001-2026-09-01

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Nomenclature

Table 0-1: Abbreviations

Abbreviations	Definition
BOP	Balance of Plant
CAD	Computer Aided Design
CAPEX	Capital Expenditure
CSI	Construction Specifications Institute
CT	Current Transformer
EA	Environmental Assessment
EOI	Expression of Interest
EPC	Engineering, Procurement and Construction
EPR	Environmental Preview Report
FEED	Front End Engineering & Design (Engineering Work for FID)
FID	Financial Investment Decision
HGP	Hydrogen Generation Plant
HP	Hydrogenation Plant
HSE	Health, Safety and Environment
HV	High Voltage
IM	Information Management
KPI	Key Performance Indicators
kV	Kilo Volts
LOHC	Liquid Organic Hydrogen Carrier
MCH	Methylcyclohexane
MV	Medium Voltage
MW	Mega Watts
NARC	North Atlantic Refining Corp
NLH	Newfoundland and Labrador Hydro
NLSO	Newfoundland and Labrador System Operator
OEM	Original Equipment Manufacturer
O&M	Operations and Maintenance
OPEX	Operational Expenditure
PEM	Proton Exchange Membrane

Abbreviations	Definition
PEP	Project Execution Plan
PPSR	Procurement Package Status Report
PT	Potential Transformer
QMP	Quality Management Plan
QRA	Quantitative Risk Assessment
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Quote
SCADA	Supervisory Control and Data Acquisition
SI	International System of Units
SOW	Scope of Work
SR	Services Required
WBS	Work Breakdown Structure
WTG	Wind Turbine Generators

Table 0-2: Glossary

Term	Definition
Agreement	Agreement between North Atlantic and the Contractor
Bidder	The Engineering, Procurement and Construction (EPC) company intending to submit a proposal for this RFP
Contractor	The Engineering, Procurement, and Construction (EPC) company selected to carry out the Stage 1 – Engineering to FID scope of work
Deliverables	All documents and/or drawings required to be submitted by the contractor during the performance of Stage 1 scope of work
Owner	North Atlantic Refining Corp. (North Atlantic)
Project	North Atlantic Wind to Hydrogen Project
Vendor	The company that designs and/or supply equipment and/or components to be used on the project

Attachments

Table 0-1: List of Attachments

Attachment	Description
Exhibit 1	Company overview
Exhibit 2	Stage 1 Detailed Scope of Work and Deliverables
Exhibit 3	Acknowledgment of Receipt Form
Exhibit 4	Request for Information (RFI) Form
Exhibit 5	Checklist form
Exhibit 6	Bidder Submission Form
Exhibit 7	HSEQ Questionnaire Form

1 Introduction

North Atlantic Refining Corp. (North Atlantic) is pleased to invite qualified Engineering, Procurement, and Construction (EPC) Contractors to submit proposals for Engineering Services up to Final Investment Decision (FID) for the Wind Farm and Transmission Line scope of the North Atlantic Wind-to-Hydrogen Project. This Request for Proposal (RFP) follows the Expression of Interest (EOI) issued on 15 May 2025, and the positive responses received from proponents have informed its scope and requirements.

This RFP represents Stage 1 of a two-phase project execution strategy:

- **Stage 1** – Engineering up to FID: The scope of this RFP covers the execution of front-end and development engineering activities required to progress the project to an investment-ready definition. Stage 1 is intended to advance the Wind Farm and Transmission Line scope to approximately 60% engineering maturity, sufficient to support a confident Final Investment Decision (FID).

- **Stage 2** – Full EPC Execution post-FID: The subsequent phase (not part of this RFP) will cover the balance of engineering required to complete the design, together with full procurement, construction, installation, and commissioning of the Wind Farm and Transmission Line facilities. Stage 2 activities will commence following a successful FID and will result in a fully executed and operational project.

By engaging an EPC Contractor (“the Contractor”) for Stage 1: Engineering up to FID, North Atlantic aims to ensure that all design, planning, and cost-estimating work is completed to a high level of definition, enabling a confident FID and a seamless transition into full project execution. The selected Contractor will work closely with North Atlantic and its stakeholders to develop Stage 1 to an advanced engineering level with Class-2 cost accuracy, robust execution plans, and all necessary preparations for Stage 2.

It is important to note that a successful proposal for Stage 1 of the Wind Farm/Transmission Line EPC scope does not guarantee that the selected contractor will be awarded the scope of work in

Stage 2. There will be a second RFP process post FID in which interested parties will have the opportunity to provide a new proposal for Stage 2.

2 Company Profile

Headquartered in St. John's Newfoundland, North Atlantic has been a leader in the energy industry for more than 30 years. Its group of companies, NARL Marketing, North Sun Energy, NARL Logistics, Canadian Maritime Agency Limited (CMAL), and Terra Velo Solutions (TVS), collectively manage a robust energy and logistics network supplying customers with gasoline, diesel, marine and jet fuel, including a chain of retail gas, convenience and quick service restaurant locations across Atlantic Canada.

Through its subsidiary, North Atlantic Energies, North Atlantic owns and operates the second largest refinery in France at Gravenchon. North Atlantic Energies is a major player in the downstream oil sector in France.

North Atlantic operates an ice-free deep-water terminal with a jetty capable of accommodating Very Large Crude Carriers and a tank farm with an installed storage capacity of 4 MM barrels.

Building on this infrastructure and its experience, North Atlantic is advancing the first phase of its Green Energy Hub with a 320 MW windfarm and hydrogen generation plant with the capacity to produce 30,000 tonnes of green hydrogen for export.

North Atlantic is a portfolio company of Silverpeak, an alternative investment firm with expertise in energy and real estate. The firm has a history of uncovering off-market, deep value opportunities, with over $24 BN gross asset value acquired across various industries, geographies, and sectors. Its Energy Practice targets opportunities where it can enhance performance and increase value through operational expertise. It participates in development, construction, and operations phases of projects across the United States and Canada. Its investments and pipeline comprise of solar, wind, battery storage, and renewable diesel opportunities.

North Atlantic is committed to providing full and fair opportunities to Canadian and, in particular, Newfoundland and Labrador companies and individuals, on a commercially competitive basis. North Atlantic also encourages the participation of members of designated groups (women;

Aboriginal peoples; persons with disabilities; and members of visible minorities) and corporations or cooperatives owned by them, in the supply of goods and services.

Please see Exhibit 1 for a detailed company overview.

3 Project Overview

The North Atlantic Wind-to-Hydrogen Project harnesses wind power to produce green hydrogen through proton exchange membrane (PEM) electrolyzers, and then chemically stores the hydrogen in a Liquid Organic Hydrogen Carrier (LOHC) for safe transport and export. The project consists of two primary elements: a large onshore wind farm with its electrical infrastructure, and an integrated hydrogen production and LOHC conversion facility at an existing industrial site.

Key features of the project are as follows:

- **Wind Farm:** Approximately 45–55 utility-scale wind turbines (Wind Turbine Generators, WTGs), each rated around 7 MW. The wind farm, located between Sunnyside (west) and Garretts Cove (east) in Newfoundland, will have a total installed capacity of roughly 320 MW. The site will include about 60 km of access roads, turbine pads, and a 34.5 kV medium-voltage collector system connecting the turbines. Turbine foundations and pads are designed for heavy lifting operations (supporting large cranes for turbine installation and maintenance).
- **Transmission System:** A new 138 kV transmission line (~25 km in length) will connect the wind farm's substation to the hydrogen production complex at North Atlantic's Terminal at the Come By Chance Industrial Site. This dedicated line enables a behind-the-meter configuration where the wind farm primarily feeds the hydrogen facility. The wind farm's collector network will tie into one or more 34.5 kV / 138 kV substations, which in turn connect to the 138 kV line. The design will also allow for a grid interconnection at the Sunnyside substation to import supplemental power or export excess as needed, improving reliability for continuous hydrogen production.
- **Hydrogen Production & LOHC Facility:** At the Come By Chance Industrial Site, a Hydrogen Generation Plant (HGP) will be developed, consisting of modular PEM electrolyzer units totaling about 240 MW of electrolysis capacity. The electrolyzers will convert water into hydrogen using wind power. Downstream of the electrolyzers, a LOHC Hydrogenation Plant (HP) will absorb hydrogen into a carrier liquid. The chosen LOHC system uses a Toluene–Methylcyclohexane (MCH) pair: hydrogen is chemically bound to

toluene to form MCH for stable storage and transport. This facility will leverage existing infrastructure at the Terminal (such as storage tanks, pipelines, and marine jetty) repurposed for LOHC handling and export.

- **Product Export and Off-Take:** The hydrogen-rich LOHC will be periodically shipped from North Atlantic's Terminal to a receiving facility in Europe. There, the hydrogen will be released from the MCH and injected into the European hydrogen pipeline network, delivering green hydrogen to offtakers. The reformed toluene will be shipped back to the Come By Chance Industrial Site for reuse, establishing a circular supply chain.

Figure 3- 1 provides an overview of the project, from the wind farm through to the HGP and HP, located in Newfoundland. All engineering work in this RFP will pertain to the wind farm and transmission infrastructure, (i.e., the Balance of Plant (BOP)) up to the interface point with the HGP/HP.

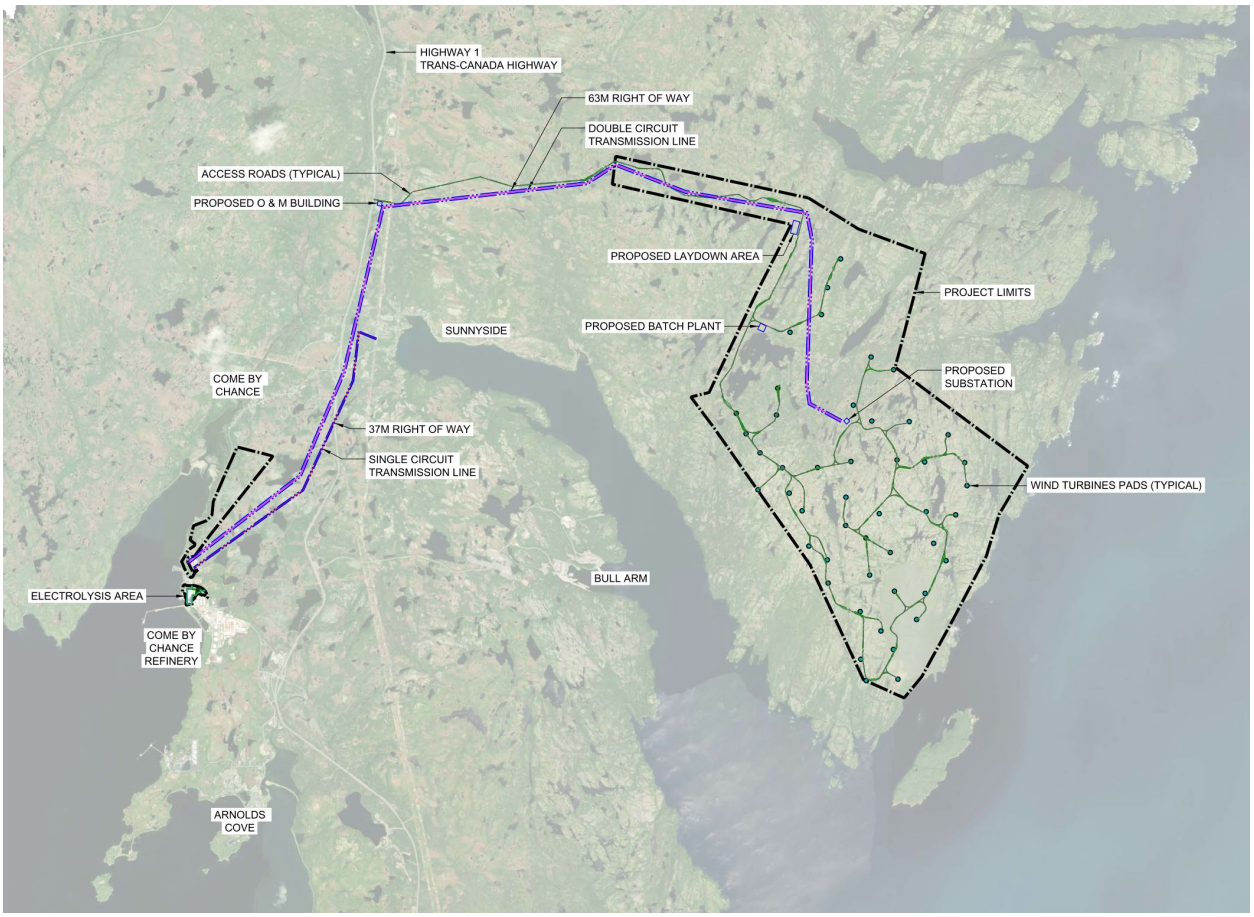

Figure 3-1: North Atlantic's Wind to Hydrogen Project layout in Come By Chance, NL

4 Battery Limits

The battery limits define the exact boundaries of this scope in terms of facilities included vs. excluded. All project components necessary to generate power from the wind turbines and deliver that power up to the agreed interconnection point are considered inside the battery limits for this phase. Conversely, equipment and systems solely associated with hydrogen production and downstream processes are outside the scope (except where interface points occur).

It is important to note that this RFP is issued on the basis of a nominal hydrogen production capacity of 30K TPA. However, depending on the technical merit of the bidder's response and subject to strategic requirements and approvals from North Atlantic's Management, the Owner may consider extending the scope to include engineering for an expanded capacity of up to 60k TPA.

The battery limits for the Wind Farm and Transmission Engineering scope are as follows:

- **Wind Turbines and Balance of Plant:** All wind turbine generators (WTGs), inclusive of their towers, blades, nacelles, and internal electronics, along with the requisite mechanical and electrical BOP systems at each turbine (pad-mounted transformers, switchgear, cabling to collector, etc.). Note that procurement of the turbines themselves is not part of this phase, but their integration and requirements are included in engineering.
- **Civil Infrastructure for Wind Farm:** All on-site civil design works, such as access roads connecting turbine sites, crane pads and assembly areas, turbine foundation structures, and any required site grading or drainage. This also includes the design of the Operation and Maintenance (O&M) building and related facilities at site (since they are integral to the wind farm operations).
- **34.5 kV Collector Network**: The complete medium-voltage collection system gathering power from each turbine to the substation(s). This encompasses overhead and/or underground collector lines, including poles, towers, or trenching, cable terminations, junction boxes, and the network's protection and control systems (relays, reclosers, etc.) up to the substation fence.
- **Wind Farm Substations (34.5 kV to 138 kV):** The step-up substations located within the wind farm site that elevate the voltage to 138 kV for transmission. All substation equipment (transformers, medium voltage (MV) and high voltage (HV) switchgear, bus work, control/protection systems, Supervisory Control and Data Acquisition (SCADA) interface)

and the substation civil works (foundations, oil containment, control building, fencing, etc.) are included.

- **138 kV Transmission Line:** The new transmission line connecting the wind farm substation(s) to the hydrogen plant's substation (and the grid interconnection point). Every component of this line – conductors, towers/poles, insulators, grounding, line protection systems (e.g., line differential or distance protection relays), and associated hardware – is included in the engineering scope. The line terminates at the point of interconnection defined by North Atlantic and NL Hydro (NLH).
- **Interconnection Point Equipment:** All interface equipment required to connect the 138 kV line into the receiving substation at the hydrogen plant or grid. This can include termination structures, line disconnects, metering CTs/PTs, surge arresters, communications for protection (teleprotection signaling), and any transfer trip or special protection schemes. Essentially, everything up to the line's first breaker at the receiving end is included. For clarity, if the HGP substation is being designed by others, the exact demarcation (e.g., line landing spans and termination gantry) will be part of interface management.
- **SCADA and Communications for Wind Farm:** All SCADA, fiber-optic cables, network switches, and communication systems dedicated to monitoring and controlling the wind farm and transmission line, up to the interface with external systems. This includes communications between turbines, substations, and the central SCADA server, and the link from the wind farm control to NLH/ NL System Operator (NLSO) (for telemetry).

Excluded from Battery Limits (Out-of-Scope for this phase):

- **HGP and 480 V Systems:** All equipment and systems dedicated to the HGP (PEM electrolyzers and balance of plant) are excluded. For example, the 480 V unit substation and electrical distribution within the HGP, the control system, and any mechanical systems for hydrogen processing are outside this scope. (Interfaces such as the point where the 138 kV line feeds the HGP main transformer will be coordinated, but the HGP internal distribution is by others.)
- **HGP Electrical Gear:** Switchgear, transformers, and other electrical infrastructure on the HGP side of the interconnection are not included. This includes the HGP's main 34.5kV/480 V transformers, 480 V switchgear feeding electrolyzers, and any backup power systems for the plant.

- **HP and Storage Systems:** All systems specifically for HP, storage, and export (reactors, chemical storage tanks, pumps, etc.) are outside the wind farm & transmission scope, except for ensuring the electrical/feed interfaces and possibly sharing certain facilities like control rooms if applicable.
- **HGP/HP Control and Safety Systems**: Control system logic, instrumentation, and safety systems that are solely for the HGP and HP. (The wind farm SCADA will exchange signals with the plant's control system at defined interface points, but development of the plant's control system is by others.)

Figure 4-1 provides a visual depiction of these battery limits. The Contractor must ensure that designs at the boundaries are fully coordinated with the adjacent scopes by others, as outlined in Interface Management.

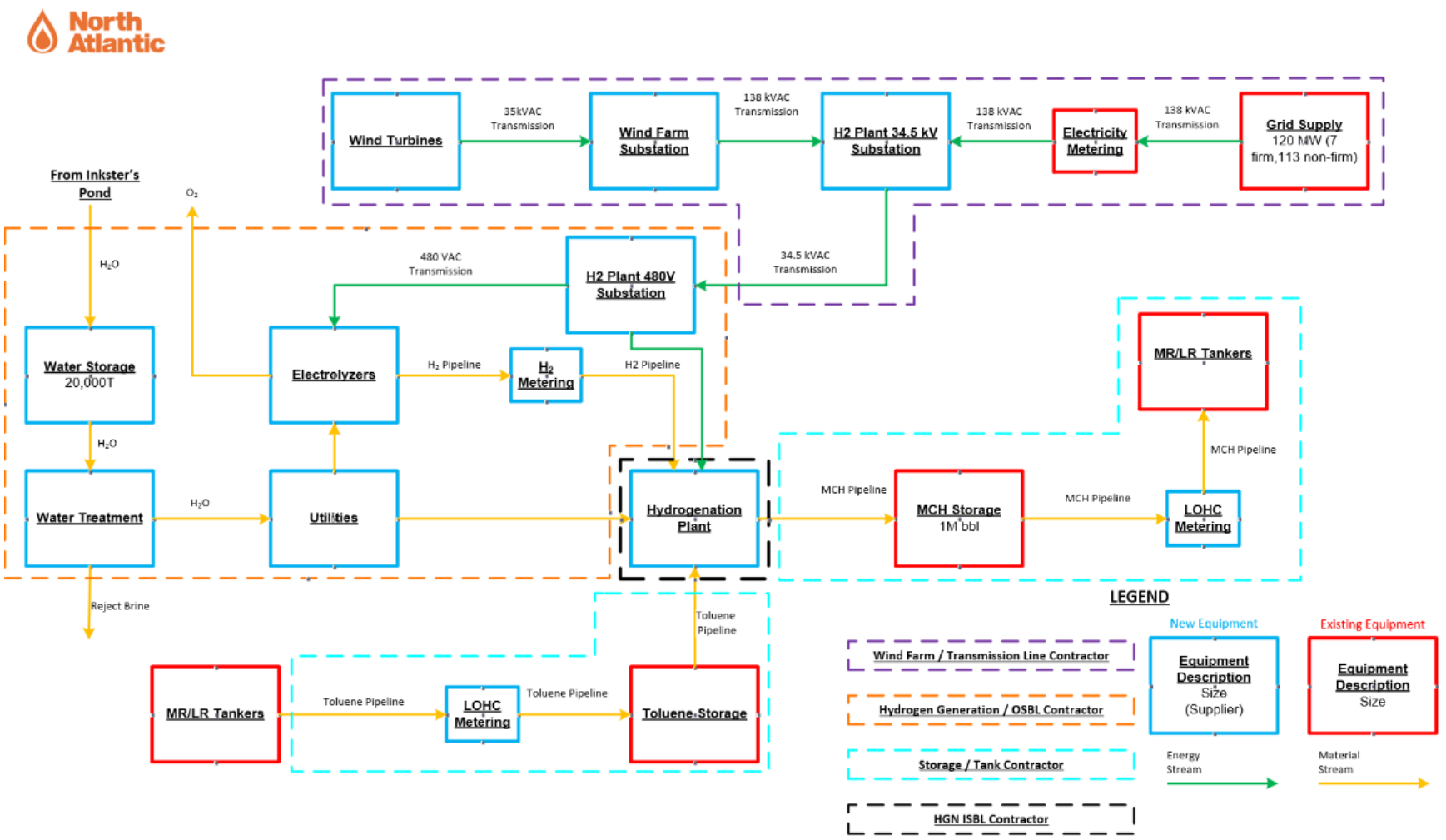

Figure 4-1: North Atlantic Wind to Hydrogen Project - Come By Chance Facilities

5 Stage 1 Objectives

The primary objective of the Stage 1 RFP is to advance the wind farm and its associated electrical infrastructure from the current pre-Front End Engineering Design (FEED) stage to a fully defined, investment-ready project state suitable for FID. By the conclusion of this phase, North Atlantic expects to have a comprehensive engineering and execution package that enables confident FID approval from the selected Contractor. Key objectives include:

- **Integrated Design Development**: Achieve a complete engineering definition for all aspects of the Wind Farm BOP – including civil works, turbine foundations, roads, electrical collection systems, substations, transmission line, and any operational facilities – at a level of detail consistent with a Class-2 estimate and FEED quality. All designs should be constructible, safe, and aligned with the project's performance requirements.
- **Execution Planning**: Produce a detailed Project Execution Plan (PEP) and associated management plans that outline how the project will be implemented. This includes strategies for procurement, contracting, construction, logistics, quality management, risk management, and interface coordination. The goal is to have a clear roadmap from engineering through construction, so that upon FID the project can move immediately into procurement and construction with minimal rework or delay.
- **Cost and Schedule Certainty**: Develop a robust cost estimate (Class-2 accuracy +15% to -10%) as defined by AACE International or similar industry classification and an integrated project schedule for the wind farm and transmission scope. These will form the basis of the project's capital expenditure (CAPEX) and timeline commitments at FID. The objective is a "no-surprise" CAPEX and schedule – i.e., to reduce uncertainty by thorough engineering, value engineering, and risk analysis, such that adequate contingencies are identified, and the estimate/schedule can be relied upon for decision making and financing. The Level 4 schedule shall be developed at a discipline- and area-based activity level and shall be sufficiently detailed to support time-phased cost loading, critical path identification and analysis, quantitative schedule risk assessment, and effective interface management across engineering, procurement, and construction scopes.
- **Alignment with Related Scopes**: Ensure technical and execution align with parallel project elements not covered in this scope (notably, the HGP and HP, which are undergoing their own FEED processes). The engineering work must incorporate requirements from the HGP's design (e.g. power interface, control signals) and the overall regulatory/environmental commitments of the larger project. Close coordination with the

HGP/HP teams will ensure that the wind farm and transmission design is compatible with the hydrogen production needs and any grid interconnection standards (via NLH/ NLSO). Ultimately, Contractor is to deliver a coordinated, constructible, and risk-mitigated engineering package, including all drawings, specifications, reports, schedules, and plans, that will enable North Atlantic's management and stakeholders to approve the project at FID with confidence. The package should also facilitate a rapid transition into full EPC execution post-FID, serving as the base for procurement and construction contracts.

5.1 Services Required

The Services Required (SR) under this RFP encompasses all engineering and design activities, project planning, and related services. In general, the Contractor shall perform multi-disciplinary FEED equivalent tasks, in alignment with North Atlantic's overall project development schedule and in coordination with other project stakeholders. Required services include, but are not limited to:

- **Engineering and Design**: Complete civil, structural, electrical, and mechanical engineering for the wind farm and its grid connection up to the interconnection point. This entails detailed design development sufficient for Class-2 cost estimation and investment decisions. (Construction activities are not part of this phase and will be outlined in Stage 2, but constructability must be considered throughout.)
- **Project Management and Coordination**: Overall project management services to plan, monitor, and control the engineering phase. This includes multidisciplinary coordination, progress reporting, schedule management, and cost control for the scope.
- **Procurement Planning (Pre-EPC)**: Identification of long-lead items and critical equipment (e.g., wind turbines, transformers, cables, etc.), preliminary vendor engagements, and the development of procurement and contracting strategies ready to be executed if the project moves forward after FID.
- **Interface Management**: Management of technical interfaces between the wind farm scope and other project parts (HGP/HP, grid operator, turbine supplier, regulatory bodies, etc.), ensuring all requirements at the boundaries are clearly defined and agreed.
- **Construction & Execution Planning Support**: Preliminary construction planning including constructability reviews, site logistics strategies (crane movement, component transportation, site facilities), and preparation for operational readiness and

commissioning concepts, to ensure the design is installation-ready and the transition to construction is smooth post-FID.

- **Project Controls and Risk Analysis**: Establishing project controls for scheduling and cost during the engineering phase and performing risk management (including qualitative and quantitative risk analyses) to inform contingencies and mitigation plans.

5.2 Stage 1 Deliverables

By the end of Stage 1, the Contractor is expected to produce a complete set of deliverables that will form the basis of the FID package and future EPC execution. The proposal should confirm the proponent's commitment to delivering, at a minimum, the following key deliverables (with the understanding that intermediate work products and draft submittals will be reviewed throughout the phase). Please see Exhibit 2 for a more in-depth review of Stage 1 Scope of Work (SOW) and deliverables:

- **Project Execution Plan (PEP):** A comprehensive PEP document covering project organization, execution strategies for engineering/procurement/construction, interface management, schedule integration, quality plan summary, HSE plan summary, risk management processes, and transition planning for EPC. This document will serve as the governing plan for how the project is managed up to FID and outline how Stage 2 will proceed. PEP also includes:
  - **Risk Management Deliverables**: Documents and logs related to project risk management:
    - A Project Risk Register (live document to be maintained, but a snapshot to be delivered at end of phase) capturing all identified risks (technical, schedule, cost, HSE, etc.), their assessment (likelihood, impact), owners, and mitigation measures.
    - A Quantitative Risk Analysis (QRA) Report covering integrated cost-schedule risk modeling. This report should summarize the Monte Carlo simulation results, showing probability distributions of final cost and schedule outcomes, recommended contingency levels and key risk drivers.
    - Minutes or summaries of any risk workshops conducted.
  - **Procurement and Contracting Plan:** A document (or section in PEP) detailing the plan for procurement of major packages post-FID. This includes the Procurement Strategy (package breakdown, sourcing strategy, list of potential

bidders for each package), a Procurement Schedule aligned with the project schedule, and a Procurement Package Register listing each major package with its scope, estimated value, key dates (Request for Quote (RFQ) issue, award, delivery), and any long-lead considerations. While actual procurement is later, this plan ensures readiness to launch EPC procurement immediately after FID.

- **Quality Management Plan (QMP**): A project-specific QMP consistent with ISO 9001 standards, to be implemented during the engineering phase and carried into EPC. This plan will outline quality objectives, organization (quality roles/responsibilities), inspection and test plans (ITPs) strategy for design deliverables and vendor equipment (factory tests, site acceptance tests in future), documentation control, and how contractor will manage non-conformances. The QMP deliverable ensures North Atlantic that the Contractor has a robust Quality Assurance /Quality Control (QA/QC) system in place. (If not provided separately, the PEP can contain a quality section fulfilling this requirement.)
- **HSE Management Plan:** An HSE Plan for the engineering phase (and setting the stage for construction HSE). It should describe how the Contractor will meet North Atlantic's HSE requirements, including safety in design procedures (HAZID/HAZOP workshops schedule, design review for safety), and preparation for construction safety (e.g., outline of site-specific safety plan for when construction starts). It should also address environmental management measures relevant to design (e.g., designing to minimize environmental impact, considering wildlife buffers, etc.). If applicable, the HSE Plan will detail any health & safety personnel assignments and their roles during this phase.
- **Interface Management Plan:** A plan or procedure detailing how interfaces will be managed. This includes a listing of all critical interface points (technical and organizational), an interface matrix or register, and the process for interface issue resolution. The deliverable assures that no aspect of the project that overlaps with another contractor or stakeholder will be overlooked.

- **Engineering Design Packages:** Complete design documentation for all aspects of the wind farm and transmission scope. This will be subdivided by discipline and system, for example: .
  - **Civil/Structural Package:** including site layouts, road and crane pad drawings, turbine foundation designs and calculations, O&M building drawings and specs, drainage plans, and civil specifications.

- **Electrical Package:** including one-line diagrams, schematics, and layouts for the collector system and substations, equipment datasheets, cable schedules, grounding and lighting protection designs, substation physical layouts and section drawings, protection and control schematics, and SCADA/communications network architecture diagrams.
- **Transmission Line Package:** including plan and profile drawings for the line route, structure design drawings (with detailed tower/pole specifications), conductor and insulator specifications, stringing charts, and line protection/control details.
- **Interface and Integration Documents:** defining points of connection and responsibilities (e.g., documents that define the wind farm-to-hydrogen plant electrical interface, turbine supply interface specs, and utility interconnection requirements).
- Each design package should include not only drawings but also supporting documents such as design criteria & basis of design, engineering calculations or study reports (e.g., electrical studies for load flow, short circuit, grounding analysis; structural analysis reports for towers and foundations; etc.), and material take-offs or bill of quantities for estimating.

- **Value Engineering Report:** A report summarizing the value engineering activities undertaken, listing the ideas considered and the decisions made to optimize cost, performance, and constructability. This should include outcomes of any value engineering workshops, and documentation of changes incorporated into the design for improvement. It will serve to demonstrate due diligence in exploring cost-saving or value-adding opportunities.
- **Survey and Study Reports**: As described in the scope, final reports for the various site studies:
  - Updated Site Feasibility and Survey Report.
  - Transmission Line Survey Report (route survey details, land data).
  - Transportation Logistics Study report (detailing transport routes and requirements for large components).
  - Any additional geotechnical factual reports or hydro-geological reports produced in this phase.
- **Project Schedule (Level 4):** A detailed Project Schedule for the execution of the wind farm and transmission project. This should be developed initially as a high-level milestone

schedule (Level 1/2) for FID planning and then expanded into a Level 4 engineering and construction schedule. The schedule must include all engineering activities, procurement timelines for key equipment, expected construction sequences, and commissioning/start-up activities, integrated logically. The final deliverable is typically a Primavera P6 (or similar) schedule file and an accompanying schedule narrative. It should highlight critical path elements and include considerations for weather downtime, permitting, and other factors. The schedule will be used to validate the timeline at FID and will be the baseline for EPC phase scheduling.

- **Cost Estimate (Class-2) and Basis of Estimate**: A full Class 2 (+15% to -10%) Cost Estimate for the wind farm & transmission scope, along with a Basis of Estimate document. The estimate should be provided in a structured format (e.g., by WBS or by CSI code of accounts) and include detailed quantity take-offs and unit costs. The Basis of Estimate should explain all assumptions, source of cost data (vendor quotes, historical data, factoring, etc.), allowances made, exclusions, and the calculated contingency. It should also include an expected accuracy range and any risks that could impact cost. This deliverable is critical for FID and for budget authorization.
- **Monthly Progress Reports:** During the execution of the contract (Engineering up to FID phase), the Contractor will submit regular progress reports (e.g., monthly). As a deliverable set, these reports should include updates on schedule (progress against plan), cost expended (against budget for this phase), key achievements, any technical issues encountered, risk register updates, and QA/QC and HSE statistics (like any incidents or near-misses in design activities). For the purpose of proposal, it suffices to acknowledge that such reports will be provided; a template or example can be included if desired.

All deliverables should be provided in both native format (e.g., MS Word/Excel, Primavera P6, AutoCAD/Revit, etc. as applicable) and in a fixed format (PDF for documents, PDF/DWG for drawings). Drafts of major deliverables will be reviewed by North Atlantic throughout the project, and final versions shall incorporate North Atlantic's comments. The list above is not exhaustive – additional deliverables may be identified as needed to meet the project objectives – but it covers the principal outputs expected. Bidders are encouraged to propose a deliverables list that meets or exceeds these requirements, demonstrating a clear understanding of what is needed for a successful FID package.

5.3 Technical Requirements

All engineering work and deliverables must adhere to the technical requirements, standards, and criteria set forth by North Atlantic and applicable regulatory bodies. This section highlights key technical requirements and expectations:

- **Codes and Standards Compliance**: The selected Contractor is responsible for ensuring that all designs conform to applicable codes, standards, and regulations. At a minimum, the following shall be complied with:
  - Canadian Codes: All civil and structural designs shall comply with Canadian building codes and standards (e.g., NBCC for structural, CSA standards for steel design, concrete design, etc.). Electrical works shall comply with the Canadian Electrical Code (CEC) and CSA standards (such as CSA C22.3 for overhead power lines, CSA C22.1 for electrical installations).
  - Industry Standards: Relevant international standards such as IEC and IEEE should be applied for equipment and systems design. For example, wind turbine design and certification should follow IEC 61400 series, high-voltage equipment should meet IEC/IEEE standards, and safety systems should consider NFPA standards (like NFPA 70/70E for electrical safety, NFPA 850 for fire protection in power plants).
  - Utility / Grid Codes: Designs that interface with the grid (substations, protection schemes, generator characteristics of the wind farm) must meet NLH/NLSO interconnection requirements and grid code. Documents such as NLH's technical standards (e.g., TP-S-005 or any grid interconnection handbook) will be provided and are mandatory. Protective relaying and control schemes should be coordinated with NLH standards for reliability.
  - Quality and Workmanship Standards: Construction and fabrication standards (e.g., CSA W59 for welding, IEEE 980 for grounding, and IEC 61850 for substation communication) must be defined in the design basis. The Contractor will prepare a Design Basis and Standards document at the project outset, listing all applicable codes and standards for each discipline, which will be subject to North Atlantic's approval.
- **Design Criteria and Calculations**: The Contractor shall establish a clear Design Criteria for each aspect of the work. These criteria define the assumptions and parameters and design margins used in design (for instance, wind turbine foundation design criteria will

include extreme wind speeds, soil bearing capacities, frost depth; electrical system criteria will include voltage regulation limits, fault levels, etc.). All engineering calculations must be performed by qualified professionals and be available for North Atlantic's review. Designs must account for site-specific conditions: wind and weather data for the wind farm (e.g., icing, gusts), seismic zone for structures, environmental loading on transmission lines, etc. The proposal should acknowledge adherence to these criteria and the inclusion of safety factors in line with code requirements.

- **System Performance Requirements**: The systems engineered must achieve certain performance targets:
  - The wind farm's electrical system should be capable of delivering the full required MW to the electrolyzers (plus any losses) under typical conditions, with power quality within acceptable limits (Total Harmonic Distortion, voltage flicker, etc., should be analyzed and kept under limits specified by the utility).
  - The design should ensure high reliability and availability. Redundancies or contingencies (like N-1 criteria for critical substation components or alternate routing in the collector system if feasible) should be incorporated to avoid single points of failure that could jeopardize hydrogen production continuity.
  - The SCADA system must enable real-time monitoring and control of all key parameters, with appropriate fail-safes and cybersecurity measures. Data latency and accuracy should meet industry best practices for power plant control.
  - Equipment ratings (transformers, breakers, cables) should include a margin over the initial operating conditions to allow some future flexibility or capacity increase if possible (for example, designing collector cables not exactly at 100% of turbine output to allow minor upgrades or improved power factor control).
- **Environmental and Regulatory Requirements in Design**: Engineering must integrate all Environmental Assessment commitments and permit requirements. For example:
  - Noise and shadow flicker limits for wind turbines near any residences must be respected – the layout and turbine models selected must meet the thresholds documented in the EA.
  - The transmission line design should include mitigations for bird strikes (marker balls or bird diverters in migratory bird areas) if required by environmental regulators.

- Any protected areas or sensitive habitats identified in the EA should be avoided or have specific design accommodations (such as spanning a wider distance to avoid a wetland).
- The Contractor should plan for an Environmental Management approach during design – meaning features like spill containment for oil-filled equipment, fish-friendly design of culverts on access roads, erosion, dust and sediment control during eventual construction (to be included in drawings), etc.

- **Integration with Owner's Systems:** The designs should align with North Atlantic's existing engineering standards and specifications. North Atlantic may have standard specifications for equipment (e.g., a preferred vendor list or standard specs for transformers, switchgear, control systems). The Contractor will be expected to incorporate such standards or seek approval for deviations. Additionally, anything that will be handed over to North Atlantic operations (like the O&M building facilities or SCADA) should meet North Atlantic's operability and maintainability criteria (for instance, using SCADA software compatible with North Atlantic's fleet monitoring systems, or specifying common spare parts with other North Atlantic assets when practical).
- **Digital Deliverables and BIM:** North Atlantic encourages the use of modern engineering tools. While not mandatory, it is desired that the Contractor utilize Building Information Modeling (BIM) or 3D modeling for the substation and O&M building design, and possibly GIS-based design for the transmission route. A Digital Model of the wind farm (terrain, turbine positions, cable routing) can greatly assist in visualization and future asset management. If used, the Contractor should plan to deliver the digital models along with traditional drawings. The RFP response should indicate what design software and tools will be used (e.g., PLS-CADD for transmission line, WindPro or similar for wind farm optimization, ETAP or PSCAD for electrical studies, CAD tools for civil, etc.).
- **Testing and Commissioning Philosophy**: Although actual commissioning happens later, the design should facilitate thorough testing and commissioning. For example, include provisions for testing (such as adding test switches in protection panels, designing substations with bypass or isolation points to allow equipment testing), and prepare draft Commissioning Procedures for major systems (to be finalized in EPC phase). This ensures the project, as designed, can be smoothly started up. The Contractor's deliverables should include outline commissioning plans for turbines (in collaboration with OEM), substations (in collaboration with NLH requirements), and integration testing of SCADA.

In summary, the Contractor must deliver an engineering product that is fully compliant with all required standards and is tailored to North Atlantic's project needs. The Technical Requirements shall be rigorously followed and documented. Bidders should demonstrate knowledge of these codes and standards in their proposal and confirm that their engineering team has the necessary experience with Canadian and international standards relevant to this project. A failure to meet technical requirements in the delivered work will be grounds for non-acceptance of deliverables, so quality control in design is of utmost importance (see QA/QC section for required quality processes).

6 Proposal

6.1 Instructions

6.1.1 Proposal Acceptance

Bidders are required to acknowledge receipt of this RFP by returning Exhibit 3 - Acknowledgement of Receipt Form no later than January 16, 2026. Only those who submit these forms by the deadline will receive access to the confidential SharePoint document library for this RFP. The SharePoint library contains reference documents and data necessary for proposal preparation; its contents are confidential and for use only in developing a response to this RFP. See Section 6.3 for more details on Sharepoint contents.

6.1.2 Clarifications

Bidders may seek clarification on the RFP content by submitting formal Requests for Information (RFIs) using the template provided in Exhibit 4. All RFIs must be submitted electronically to the designated North Atlantic contact in Section 6.6 by the deadline specified in the RFP timeline in Section 6.2. North Atlantic will compile and circulate responses to all received questions in a consolidated Q&A document to ensure consistency and transparency.

In addition, should the need arise, bidders may formally request a one-time virtual clarification meeting via Microsoft Teams. Such meetings will be subject to North Atlantic's discretion and scheduling availability and will be intended to address complex technical or procedural queries that cannot be addressed through written correspondence alone.

6.1.3 Submission

All proposals must be complete and include all information and documentation requested. Bidders shall ensure their submissions contain all items listed in the Exhibit 5 - Checklist form.

Submissions should include a completed Exhibit 5, Exhibit 6 – Bidder Submission Form and Exhibit 7 – HSEQ Questionnaire Form. Proposals that are missing required components or forms may be deemed non-compliant.

Bidders must marked confidential information within the submission package accordingly. Given the anticipated size of the bids, the bid packages must be submitted via the SharePoint in the folder labelled “Final Submission”. The file-size limit is 1GB. Each bidder should take all necessary and appropriate steps, including shrinking the size of PDF documents, to ensure that the SharePoint link file size limit is not exceeded.

Bidders shall notify the contacts outlined in Section 6.6 once their proposal has been uploaded to the SharePoint.

6.2 Submission Timelines

Timeline for submission is outlined in Table 6-1.

Table 6-1: Proposal Submission Timeline.

Sr No	Description	Dates
1	Issue of RFP Document – RFP Letter	09-Jan-2026
2	Receiving of Exhibit 3 – Acknowledgement of RFP form	16-Jan-2026
3	Release of Supplemental Information	20-Jan-2026
4	Last Date for Submission of Question / Clarifications	13-Feb-2026
5	Clarification provided by North Atlantic for submitted Questions	20-Feb-2026
6	Last Date of Submission for RFP response	13-Mar-2026 (by 5:00 PM NST)

6.3 Assumptions

All bidders shall base their proposals on the assumptions and reference information (“Supplemental Information”) provided by North Atlantic for this project. As stated, supplemental information will be provided to the bidders through a Sharepoint once North Atlantic has received Exhibit 3 – Acknowledgement of RFP form

It is assumed that the selected Contractor for Stage 1 RFP will also utilize the Supplement Information as the starting point and authoritative basis for their engineering work. Key assumptions and inputs include:

- **Owner Documentation:** North Atlantic will provide all relevant studies and reports completed to date. These include:
  - **Expression of Interest (EOI) – EPC Contractors Package:** The information package distributed during the EOI phase (project description, preliminary scope outline, etc.).
  - **Wind Farm Layout & Coordinates:** A preliminary wind farm layout with the proposed locations (coordinates) of turbine sites, including constraints applied during site selection.
  - **Pre-FEED Drawings:** Preliminary engineering documents developed during the pre-FEED phase, which shall serve as the technical baseline for this scope.
  - **Geotechnical Investigation Report:** Data from geotechnical surveys including borehole logs, soil stratigraphy, rock depth and quality, and any recommendations for foundations. This will guide foundation and civil design.
  - **Environmental Assessment (EA) Submission:** The full Environmental Assessment documentation submitted to regulators, along with any supporting studies (wildlife studies, noise assessments, heritage surveys, etc.). This also encompasses any conditions of release or mitigation requirements already identified.
  - **Environmental Preview Report (EPR) Guidelines and Submission:** Applicable environmental protection plan guidelines and regulatory standards that the project must follow (provincial and federal regulations for wind farm development, transmission lines, etc.). At this stage North Atlantic is working towards the EPR submission. Once the submission is complete, a copy will be provided to the selected contractor.
  - **Interconnection Studies:** The Interconnection Request filed with NLH/NLSO, including any load flow and stability analysis results or screening study reports. Also, any documented requirements from NLH regarding protection settings, system impact studies, and grid code compliance.
- **Use of Owner's Data:** Information provided by North Atlantic is for reference These documents collectively establish the project's baseline. If the Contractor identifies any gaps, discrepancies, or the need for additional information during their review, they are expected to promptly notify North Atlantic and seek clarification or additional data. Any deviations from or changes to the basis data must be agreed with North Atlantic.

- **Regulatory and Permitting Context:** It is assumed that major environmental and planning approvals are being handled by North Atlantic (or are already in progress). The selected Contractor's role is to ensure the engineering deliverables comply with the commitments and requirements in those approvals. For example, if the EA imposes a constraint on turbine locations or noise levels, the design must respect that. The Contractor should plan for some interaction with regulators and EA contractor for technical clarifications, but not for leading any new permitting processes (unless explicitly stated otherwise).
- **Coordination with OEM and FEED Teams:** North Atlantic will facilitate introductions and technical coordination with the turbine Original Equipment Manufacturer (OEM) and the HGP/HP FEED contractors. It is assumed that the selected Contractor will have access to the necessary technical information from these parties early in the project. All bidders should plan their work with the understanding that a collaborative interface with these parties is required.
- **Site Access and Conditions:** For proposal purposes, assume that the site is not accessible by road for surveys or investigations and can only be reached by helicopter under typical conditions. North Atlantic will support the contractor in obtaining any required access permissions. All physical works during this phase (e.g., surveys) will be non-intrusive or will have the necessary permits in place. Extreme weather conditions should be factored into schedule planning. No additional or extraordinary access challenges are expected beyond those described in the provided reports.
- **Future Work beyond FID:** The scope of this RFP does not include procurement of equipment or construction works. However, bidders should assume they will need to produce procurement packages and execution plans such that upon FID, North Atlantic can quickly proceed to tender or negotiate EPC contracts for construction. The selected Contractor will not actually carry out purchases or field work in this phase but must provide the documentation to enable those in the next phase.

If any of the above assumptions prove to be incorrect or if additional assumptions are made in the proposal, the Bidder should clearly state them in their proposal. All clarifications or exceptions related to the base data must be resolved in discussion with North Atlantic as early as possible.

6.4 Proposal Requirements

6.4.1 Technical Requirements

The Proposal shall include the following technical requirements at a minimum:

- **Work Plan:** A concise but comprehensive Work Plan outlining its strategy for executing the Engineering up to FID scope. The Work Plan must demonstrate a strong understanding of project objectives, technical scope, interfaces, and schedule requirements. It should describe the Contractor's approach to delivering all required engineering deliverables, including Class 2 cost estimates and a complete Project Execution Plan (PEP) covering engineering, procurement, constructability, logistics, commissioning readiness, and interface management.

  The plan must also highlight key deliverables, resource strategy, value engineering approach, risk management, quality assurance, and document control practices. Any proposed study or activity outside the defined Scope of Work must be clearly identified and justified. The Work Plan will be a critical evaluation element, reviewed for its technical depth, integration, and readiness to support a seamless transition to EPC.
- **Execution Schedule:** Submission of a high-level Execution Schedule that outlines the timeline and sequencing for completing the Engineering up to FID scope. This schedule should reflect a logical and realistic path to FID, clearly identifying key engineering deliverables, milestone submissions, interface coordination points, and review cycles. The schedule must align with the overall project timeline and demonstrate how critical activities will be completed to support Class 2 cost estimation and investment readiness. The Contractor is expected to incorporate dependencies across disciplines, stakeholder interfaces, and long-lead engineering items. The schedule shall include major workstreams, deadlines for key deliverables, internal and external review gates, and any owner input or approval milestones. Emphasis should be placed on how the Contractor will maintain schedule integrity, manage float, and proactively identify and mitigate risks that could impact the FID timeline.
- **Proposed Organization and Key Personnel:** Provide a detailed organizational structure that illustrates the proposed team responsible for executing the Engineering up to FID phase. The organization chart must clearly define reporting lines, functional responsibilities, and coordination mechanisms across disciplines including project management, engineering, procurement, quality, safety, interface management, and project controls.

  The organization must reflect an integrated and collaborative project approach aligned with the complexity of the scope and North Atlantic's execution strategy. Clear allocation of leadership roles, discipline leads, and interface coordination responsibilities is expected to demonstrate the Contractor's readiness and resourcing strategy.

In addition, the Contractor shall submit detailed Curriculum Vitae (CVs) for all key personnel identified in the organization chart. These CVs must highlight relevant qualifications, technical expertise, prior project experience, and alignment with their proposed responsibilities. Emphasis should be placed on experience in wind energy, transmission, and hydrogen infrastructure projects, as well as familiarity with regulatory and interconnection environments in Newfoundland and Labrador or similar jurisdictions.

Key personnel to be identified and supported with CVs include, but are not limited to:

- Project Manager
- Engineering Manager
- Civil/Structural Lead
- Electrical Lead
- Transmission Line Lead
- SCADA and Communications Lead
- Interface Manager
- Procurement Engineer
- Quality Manager
- HSE Manager
- Document Control Lead
- Project Controls/Scheduling Lead

North Atlantic reserves the right to review, interview, and request substitutions for any personnel whose qualifications are found misaligned with the project requirements.

- **Site Survey and Site visit Plan:** Develop a comprehensive Site Visit and Site Survey Plan to support all engineering activities up to FID. Given the remote and partially inaccessible nature of the site, the Contractor is expected to adopt advanced technologies to reduce the frequency and cost of physical site visits.

  The plan shall incorporate the use of drone-based surveys for topographic mapping, visual inspections, and terrain assessment to collect high-resolution geospatial data. This approach will enhance safety, reduce mobilization requirements, and accelerate data acquisition.

  The Contractor shall also detail the schedule and scope of planned site visits, coordination protocols with North Atlantic, and adherence to health, safety, and environmental guidelines. Where required, the Contractor must identify external survey partners and ensure that all collected data is integrated into the engineering models, logistics planning, and permitting documentation.

- **Project History Sheet:** Proposal shall include a set of Project History Sheets summarizing relevant past project experience. Each sheet should be no more than two pages and must include:
  - Project Title and Location
  - Client Name
  - Scope of Work Performed
  - Contract Value and Duration
  - Key Engineering Disciplines Involved
  - Technical or Execution Challenges and Solutions
  - Project Outcome and Performance Metrics

  These summaries should demonstrate the Contractor's capability and experience in delivering similar engineering scopes, especially in wind energy, transmission infrastructure, and hydrogen-related projects. Preference will be given to projects executed under similar environmental, regulatory, or logistical conditions.

6.4.2 Commercial Requirements

The Proposal shall include the following commercial requirements at a minimum:

- **Price Breakdown (Commercial):** Provide a detailed and transparent commercial proposal, including a comprehensive Price Breakdown for Stage 1. This breakdown must align with the defined SOW and enable clear traceability between technical deliverables, project phases, and associated costs.

  The price submission shall include:
  - Total Lump Sum Price for Engineering up to FID services (Stage 1).
  - Itemized Cost Breakdown by work packages or discipline
  - Allocation of Costs across major cost categories such as engineering hours, subcontracted services, studies, software/tools, travel, and administrative support.
  - Breakdown by Milestone or payment schedule (if applicable), tied to deliverables or project progress.
  - Assumptions and Exclusions, clearly identifying any items not covered under the proposed pricing.
  - Optional Items or Studies, if recommended outside the defined scope, shall be priced separately.

- **Schedule of Rates (Commercial):** Submit a clear and itemized Schedule of Rates covering key personnel, engineering disciplines, and any reimbursable services related to the Stage 1. This should include:
    - Hourly or daily rates by discipline and experience level
    - Unit rates for any specialist or third-party services
    - Applicable rates for site visits, surveys, or technical workshops

  These rates will support scope adjustments, change orders, and evaluation of any additional services required during the phase.
- **Term and Conditions (Commercial):** Provide a clear statement of the proposed commercial terms and conditions applicable to this RFP. This should include, but is not limited to:
    - Proposed payment terms and invoicing milestones
    - Validity period of the commercial offer
    - Assumptions and exclusions that impact pricing
    - Currency of offer and applicable taxes
    - Any commercial clarifications or conditions linked to execution timeline, scope, or deliverables

  All commercial terms should align with the structure and intent of the Engineering up to FID phase and be consistent with the proposed schedule and work plan.
- **Change Management:** Outline a clear and structured Change Management approach for the Stage 1. This process must define how technical, commercial, or scope-related changes will be identified, assessed, documented, communicated, and approved. The Contractor shall ensure traceability of all proposed changes, including evaluation of cost, schedule, and risk impacts. A Change Register shall be maintained throughout the project, and no change shall be implemented without formal approval from North Atlantic. This ensures alignment with project objectives, budget control, and transparent decision-making.
- **Invoicing and Payment (Commercial):** Provide a clear invoicing and payment plan aligned with project milestones for the Stage 1. Invoices shall be submitted on a monthly basis, supported by progress reports and deliverable tracking. Each invoice must reference the agreed milestone schedule, approved deliverables, and associated percentage of work completed. Payments will be made upon North Atlantic's review and acceptance of the invoice and corresponding documentation, in accordance with the agreed terms and conditions.

- **Other Additional Document Submission:** Bidders are encouraged to submit any additional documents, case studies, technical brochures, or supporting materials they believe will strengthen their proposal. These may include innovations, proprietary methodologies, digital tools, or lessons learned from similar projects. While optional, these supplementary materials will be considered during evaluation if they provide meaningful insight into the bidder's capabilities, value-added approaches, or risk mitigation strategies.

6.5 Bid Evaluation

Responses to this Stage 1 RFP for the Wind Farm and Transmission Line scope of North Atlantic Wind-to-Hydrogen project will be evaluated based on a multi-criteria assessment that considers both technical and commercial dimensions. The evaluation process will prioritize quality, capability, and value, with the following key components outline in Table 6-3.

Table 6-2: Bid Evaluation Criteria

Sr No	Points	Scope	Remarks
1	Technical Approach	Work Plan and Execution Strategy	Clarity, completeness, and feasibility of the proposed methodology to meet project objectives and deliverables.
		Project Execution Plan (PEP)	Quality and integration of planning across engineering, procurement, constructability, and commissioning readiness.
		Resource Plan and Team Structure	Appropriateness of proposed organization, resource availability, and experience of key personnel.
		Schedule	Realism, completeness, and alignment of the proposed timeline with project milestones.
		Interface and Risk Management	Approach to managing interfaces with key stakeholders and identification/mitigation of project risks
		Value Engineering	Demonstrated strategy to drive efficiency and cost/time savings
		Innovative Approaches	Innovative Approaches: Use of technology, including site survey methods like drone utilization, to enhance delivery.

Sr No	Points	Scope	Remarks
2	Commercial Proposal	Price Breakdown and Schedule of Rates	Transparency, competitiveness, and consistency of pricing with scope.
		Payment Terms and Conditions	Alignment with North Atlantic's financial controls and milestone-based disbursements
		Commercial Compliance	Acceptance of contractual terms and conditions.
3	Experience and Track Record:	Relevant Project Experience	Submission of project sheets demonstrating successful delivery of similar scope and complexity.
4	Overall Proposal Quality:	Presentation and Coherence	Presentation and Coherence: Professionalism, organization, and completeness of the submission

The highest-ranked bidder will be selected based on best overall value (not solely on lowest cost) ensuring the chosen EPC contractor has the technical competence, planning rigor, and commercial responsibility to successfully deliver the Engineering up to FID phase.

North Atlantic is committed to providing full and fair opportunities to Canadian and, in particular, Newfoundland and Labrador companies and individuals, on a commercially competitive basis. North Atlantic also encourages the participation of members of designated groups (women; Aboriginal peoples; persons with disabilities; and members of visible minorities) and corporations or cooperatives owned by them, in the supply of goods and services.

It is important to note that for transparency and benchmarking purposes, North Atlantic will also be obtaining a parallel quote for the same Engineering up to FID scope from its nominated consultants. This internal benchmark will serve as a reference for evaluating the competitiveness, completeness, and value of all proposals received under this RFP. North Atlantic reserves the right, at its sole discretion, to allocate all or part of the scope to the consultant if the submitted EPC Contractor proposals are determined to be non-compliant, commercially uncompetitive, or misaligned with project expectations. This clause ensures the Owner's ability to maintain schedule, cost control, and delivery quality.

6.6 Contact Information

Execution of a Non-Disclosure Agreement (NDA) and submission of the Acknowledgement of Receipt Form (Exhibit 3) are required to obtain access to all Exhibits and Owner-provided documents associated with this RFP.

Bidders who do not currently have an NDA in place with North Atlantic Refining Corp. must contact the Owner's designated representative to request a draft NDA. Access to the confidential SharePoint document repository and related reference materials will only be granted once the NDA has been fully executed by both parties and the Acknowledgement of Receipt Form has been submitted and accepted by the Owner in accordance with the timelines specified in Table 6-1: Proposal Submission Timeline.

For any questions or clarifications, please contact:

Name: Ashish Dixit
Phone: +1(709) 631-4225
Email: ashishdixit@northatlantic.ca

7 Language and Measurement

The language of the agreement is English. All proposals from bidders and project deliverables developed by the selected Contractor must be in English.

Units from the International System of Units (SI) are used throughout the project. Project specific units derived from SI are shown in Table 9-1 below and shall be used by the bidders.

Table 7-1: Units of Measurement

Parameter	Unit Description	Unit Abbreviation
Concentration	Milligrams per litre Grams per litre Parts per million Parts per billion	mg/l g/l ppm ppb
Currency	US Dollar Canadian Dollar	USD $ CAD $
Temperature	Degree Celsius	°C
Pressure (absolute)	Bar, kilopascal absolute	bara, kPaa

Parameter	Unit Description	Unit Abbreviation
Pressure (gauge)	Bar, kilopascal gauge	barg, kPag
Pressure Drop	Bar, millibar kilopascal	bar, mbar, kPa
Mass / Weight	Kilogram, metric ton	Kg, t
Molar flow	Kilogram mole per hour	kgmole/h
Gas / Liquid volume (1)	Normal cubic meter Standard cubic meter Actual cubic meter	Nm^3 Sm^3 Am^3
Volume	Cubic meter	m^3
Flow (volume)	Cubic meter per hour	m^3/h
Flow (mass)	Kilogram per hour	kg/h
Liquid Flow (1)	Normal cubic meter per hour Standard cubic meter per hour Actual cubic meter per hour	Nm^3/h Sm^3/h Am^3/h
Length	Millimeter, meter, kilometer	mm, m, km
Velocity	Meter per second	m/s
Heat	Kilojoule, metajoule	kJ, MJ
Power	Kilowatt, megawatt	kW, MW
Heat Capacity	Kilojoule per kilogram-degree kelvin	kJ/kg K
Heat Transfer Coefficient	Watt per square meter-kelvin	W/m^2 K
Higher Heating Value / Lower Heating Value	Kilojoule per cubic meter	kJ/m^3
Wobbe Index	Kilojoule per cubic meter	kJ/m^3
Viscosity	Centipoise centistoke	cP cSt
Tubing Size	millimeter	mm
Thermal Conductivity	Watt per meter-kelvin	W/m.K
Surface Tension	Dyne per centimeter	dyne/cm

(1) Basis of normal, standard and actual volume conditions shall be reported