



Request for Proposals

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Decarbonizing Nova Scotia's Lobster Fleet

RFP Release Date: March 28, 2022

Proposal Due Date: April 22, 2022

Contact:

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1. Introduction

[Oceans North](#) is a charitable organization that supports marine conservation in partnership with Indigenous and coastal communities. We work to foster ocean-based climate solutions that maintain healthy ecosystems, reduce emissions, and mitigate the impacts of climate change for the benefit of people who rely on the marine environment. In Spring 2021, we hosted the first-ever Ports and Maritime Hydrogen Summit Series, which brought together key decision-makers, innovators, and industry leaders in Atlantic Canada and on the West Coast to discuss the role of clean hydrogen in reducing maritime sector emissions. The resulting report, [Charting a Course for Net Zero](#), examines the role of clean hydrogen in the transition towards net-zero ports and shipping.

[Net Zero Atlantic](#) is a leading energy research organization advancing Atlantic Canada's transition to a low-carbon future. We are encouraging growth of a sustainable energy sector by leading applied research in critical topics, including hydrogen, offshore wind, geothermal energy, tidal energy, and energy system modeling. Our focus is on advancing research that will help decarbonize our region's economy, mitigate climate change impacts, and move Atlantic Canada toward net-zero emissions by 2050. As a member of the [50-30 Challenge](#), we are committed to increasing workforce diversity in the energy sector.

2. Context

In 2018, Nova Scotia’s 3,200-boat lobster fleet landed more than 109 million pounds of lobster at a value of \$760 million—more than half of Canada’s total value. Fishing, and especially lobster fishing, is not only essential to the well-being of coastal communities; it is a part of Nova Scotia’s heritage.

The fishing industry relies heavily on the use of fossil fuels. Nova Scotia’s lobster fleet is powered by relatively carbon-intensive diesel engines. In some cases, fuel can account for as much as 60 percent of total fishing costs.

Zero-emission solutions for marine vessels, such as electric marine propulsion systems (both battery and fuel cell) as well as zero-emission fuels such as green methanol, are evolving rapidly. Battery electric propulsion systems are now being used in ferries and hydrogen fuel cell systems are being tested in vessels that require a higher payload and greater range. Given the relatively long life of working vessels and Canada’s goal to reach net-zero emissions by 2050, now is the time to understand which technologies and sources of renewable energy are best placed to decarbonize Nova Scotia’s lobster fleet.

Trap-based fisheries such as lobster have significantly higher carbon footprints on a per kilo basis than most fisheries and are the leading source of emissions growth in fisheries worldwide. The Nova Scotia inshore lobster fleet is well suited to the testing and deployment of zero emission propulsion systems due to the consistency of daily operations and the relative proximity of their fishing grounds: vessels follow the same general route and return to the same harbour each day.

The high-profile nature of the lobster fishery in Canada and its strong consumer connection also makes it a logical target for a demonstration project that could eventually be scaled up. As fishing fleets around the world move towards low-carbon alternatives to fossil fuels and consumers make more eco-conscious choices, proactively working towards solutions in this overlooked space could position Canada as a leader in providing both emissions-free seafood and zero-emission technology solutions. Additionally, identifying a net-zero pathway for this important economic sector in Atlantic Canada could provide a source of jobs and economic growth for the local boat building industry as the lobster fleet transitions towards net-zero emissions by 2050.

This assessment is meant to help fishers and governments start the process of thinking through potential roadblocks to net-zero so that they can start to build a plan and ensure that future generations of lobster fishers continue to thrive. Oceans North and Net Zero Atlantic are therefore requesting the submissions of proposals for a report that (1) develops an economic and emissions profile of Nova Scotia's lobster fleet, (2) assesses the challenges and opportunities of integrating zero-emission propulsion technologies and fuels into the inshore lobster fishery, (3) analyzes the potential economic benefits of developing a zero-emission lobster fishery, and (4) highlights how regulatory incentives, policy and technology development and funding mechanisms can help fishers decarbonize their fleet.

While the scope of the report is focused on the Nova Scotian lobster fleet the findings are meant to support other jurisdictions and fisheries which face similar pressures.

3. Objective

The objective of this RFP is to obtain the services of a consultant (the Respondent) to prepare a report that can be used to support fishers and decision-makers in understanding the challenges and opportunities associated with decarbonizing the lobster fishery in Nova Scotia.

4. Scope of Work

The scope of work consists of three primary tasks:

Task 1: Information Review and Data Gathering

Task 2: Assessment and Analysis

Task 3: Reporting

The final deliverable must cover the following topics, although the report structure can be defined by the Respondent.

1. Profile of Nova Scotia's Inshore Lobster Fleet

The report should include an overview of Nova Scotia's lobster fleet with a focus on the inshore fleet, detailing the number, size and age of lobster boats (including a description of the "duty-cycle" and operations of a lobster boat, as well as fuelling practices and regional differences). It should also include fuel use, emissions and cost of operations. Finally, the report should assess the economic key performance indicators (KPIs) of Nova Scotia's lobster fishery and lobster boat building industry (e.g., employment, revenue, etc.).

2. Technoeconomic Assessment of Zero-Emission Propulsion Systems

The report should review which types of zero-emission propulsion systems and zero-emission fuels are being used for marine applications and assess their operational readiness. This section should include a comprehensive analysis of the technical and economic considerations (e.g., higher capital costs vs. lower fuel and maintenance costs, and the incorporation of efficient hull designs) related to adopting zero-emission solutions in the Nova Scotian inshore lobster fishery and identify next steps for research, testing and demonstration. For each identified technology and fuel, the report should assess the energy and fuelling infrastructure needed to support widespread adoption of the technology.

3. Economic Impacts of Zero-Emission Lobster

Building on the findings of the Sections 1 – 2, the report should assess the economic impacts of building a zero-emission inshore lobster fleet in Nova Scotia. This should include an analysis of economic KPIs (employment, revenue, etc.) and a market attractiveness analysis for zero-emission lobster and zero-emission lobster boats.

4. Incentivizing the Decarbonization

The report should provide an overview of regulations, policies and funding mechanisms in Canada and other jurisdictions that influence and incentivize the adoption of zero-emissions solutions in the fishing industry. In a second step, the report should assess the applicability in a Nova Scotian context and provide suitable recommendations to support a zero-emission pathway for the lobster fishing industry in line with Canada’s net-zero legislation.

In summary, this report will provide a broad understanding of the technoeconomic considerations of decarbonizing Nova Scotia’s lobster fishery and will begin to identify the conditions and opportunities to advance new zero-emission fuels and technologies.

5. Deliverables

Upon project completion, the Respondent will provide:

(1) A report that presents the findings of Tasks 1 and 2. Both a draft version and final version are required, with the opportunity for the project management committee to recommend reasonable changes to the draft version for inclusion by the Respondent in the final version before the project ends.

(2) Presentations (in PowerPoint) to the project management committee to accompany submission of the draft and final versions of the report. The presentations will review the project and its main findings.

6. Timelines

The Respondent is expected to host regular project status meetings via video conference. Net Zero Atlantic will host the kickoff meeting. The following timeline outlines Net Zero Atlantic's expectations with respect to timing.

RFP release date:	March 28, 2022
Proposal due date:	April 22, 2022 (5 pm ADT)
Project kickoff:	Week of May 9, 2022
Report Outline:	June 10, 2022 (latest)
Draft report:	July 29, 2022 (latest)
Final report:	September 30, 2022 (latest)

7. Funding

Funding available for this project is capped at a maximum of CAN \$45,000 including taxes. Proposals that exceed this amount will not be considered. Note that proposals will be rated first in terms of experience/team/work plan and second in terms of value. Please include a cost-task breakdown (time per person per task) showing hourly or daily rates.

Please note that Net Zero Atlantic reserves the right not to proceed with project award.

8. Respondent Qualifications

The successful applicant must demonstrate knowledge and experience in low-carbon marine propulsion technologies, particularly with regards to their technical and economic characteristics. In addition, the successful applicant must demonstrate knowledge of the Nova Scotian lobster fishery. Proposals should explain the experience and qualifications of the project team and provide references where available (both literature and previous clients).

Proposal Requirements

- The proposal should be concisely worded with clearly described objectives, methods, budget, schedule, and deliverables. Maximum 15 pages excluding appendices, title page, and cover letter. Please assemble all components into a single PDF document.
- The proposal should include a description of the Respondent's organization and its relevant experience with similar projects. The Respondent must also describe the relevant work experience of the key staff assigned to this project and their roles on the project. This material should be summarized in the body of the RFP and can be presented in more detail, if needed, in the appendix.
- Please provide a project organizational chart showing the role and reporting hierarchy of project partners, and reporting lines to the Net Zero Atlantic project management committee.
- A single electronic document is sufficient. Please ensure the proposal or cover letter is signed by an officer or equivalent with authority to bind the Respondent to the statements made in the proposal.
- The electronic copy should be uploaded in PDF format to the Net Zero Atlantic-FTP site available at <https://oera.sharefile.com/r-r36767099d4c648839d042ea66523fb73>. The file name should include an abbreviated form of the Respondent's name.

9. Questions and Clarifications

Net Zero Atlantic will accept content-related questions from interested applicants on an ongoing basis until April 8, 2022. A Q&A page will be available on the Net Zero Atlantic website <https://netzeroatlantic.ca/opportunities/request-proposals/decarbonizing-nova-scotias-lobster-fleet>. The names and organizations of those submitting questions will remain anonymous; only the question and Net Zero Atlantic's response will be posted. Interested parties are encouraged to check the Q&A page for updated information and/or clarifications that may help in completing their proposal. The Q&A page will only be available if content-related questions have been received.

10. Evaluation

This project will be administered through Net Zero Atlantic. As shown below, proposals will be quantitatively evaluated against a set of criteria.

Factor	Weight
Experience and Knowledge: Qualifications, experience and capabilities of the company and delivery team; demonstration of knowledge relevant to this study.	30%
Project Plan, Approach and Methodology: Respondent demonstrates an understanding of the project service requirements and has outlined a clear and effective work plan. Proposal describes the objectives, methodology, milestones and deliverables, and a sound approach in undertaking this project. Communication format and frequency between the Respondent and Net Zero Atlantic are clearly described. Respondent describes an achievable schedule and demonstrates the ability to complete the work on or before the desired completion date.	30%
Proposal Presentation and Organization: The proposal includes all RFP requirements, demonstrates attention to clarity, grammar, presentation, and comprehensibility.	20%
Value: The project will offer good value for the proposed budget. The budget is clear, convincing, and well-described.	20%
Total:	100%