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Title - Sujet Interdepartmental Initiative Interdepartmental Marine Fleet Low/Zero-Emission Initiative	
Solicitation No. - N° de l'invitation M7594-220001/A	Date 2022-04-07
Client Reference No. - N° de référence du client M7594-220001	GETS Ref. No. - N° de réf. de SEAG PW-\$\$MD-046-28633
File No. - N° de dossier 046md.M7594-220001	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Daylight Saving Time EDT on - le 2022-05-30 Heure Avancée de l'Est HAE	
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Telephone No. - N° de téléphone (819) 271-7829 ()	FAX No. - N° de FAX () -
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Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Request for Information (RFI) - M7594-220001

Interdepartmental Marine Fleet Low/Zero-Emission Initiative

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1. INTRODUCTION

- 1.1. This Request for Information (RFI) initiates the Government of Canada's efforts for small vessel decarbonization. It is part of the Federal Sustainable Development Strategy that sets out the Government of Canada's sustainable development goals and targets, and outlines the implementation strategies and short-term milestones for achieving them.
- 1.2. This Interdepartmental Marine Fleet Low/Zero-Emission Initiative is part of the Greening Government Strategy to transition to net-zero carbon and climate-resilient operations, while also reducing environmental impacts beyond carbon, including on waste, water and biodiversity. Net-zero means reducing GHG emissions from operations to as close to zero as possible and then balancing out any remaining emissions with an equivalent amount of carbon removal. Interdepartmental Marine Fleet/Zero-Emission Initiative was set up in response to the Greening Government Strategy and has been funded through the Greening Government Fund. The Greening Government Fund (GGF) aims to incentivize lower-carbon alternatives to government operations by providing project funding to federal government departments and agencies to reduce GHG emissions in their operations.

2. GREENING GOVERNMENT FUND (GGF) PROGRAM

- 2.1. The Greening Government Fund has been established as part of the Government of Canada's response to climate change. This initiative provides project funding to federal government departments and agencies to reduce greenhouse gas (GHG) emissions in their operations. The objectives of the GGF are to support and share the results of projects which will reduce GHG emissions in federal operations. The GGF seeks to fund projects that achieve at least two of the following:
 - large-scale emissions reductions;
 - solutions in areas where GHGs are difficult to reduce;
 - solutions that can be replicated within or across government departments.
- 2.2. Federal fleet-related projects that are encouraged include solutions that target: challenging fleet segments such as light-duty trucks, commercial vehicles (medium and heavy duty; off-road), marine and air fleets, or national safety and security fleets.

All eligible projects must also address two of the following three core program criteria:

1. Large-scale emissions reductions

Extent to which the project is likely to result in large-scale GHG emissions reductions, either facility-specific (i.e. expressed as a percentage of current facility-level emissions or as kg/m²), as a percentage of a department's emissions (see inventory) or, in the case of Type 2 projects, from potential future federal emissions.

2. Difficulty of emissions reductions

Extent to which project addresses emissions of a challenging nature. This could include but is not limited to: low to zero carbon heating alternatives; thermal storage; marine and air fleet emissions; safety, security, commercial and/or specialized zero-emission land vehicles (including light-duty trucks, medium and heavy duty and off-road commercial vehicles); Scope 3 emissions from procurement; etc.

3. Replicability

Potential for replication within or across departments and agencies. Projects must have some ability to be replicated in other areas of operations or other federal departments, and lever greater action across Canada (other governments or the private sector).

- 2.3. The Interdepartmental Marine Fleet Low/Zero-Emission Initiative was approved by the GGF. The first objective of the Interdepartmental Marine Fleet Low/Zero-Emission Initiative is to explore the feasibility of transitioning different categories of Government small vessels from their existing internal combustion engine (ICE) propulsion to low/zero-emission options.
- 2.4. The second objective is to develop procurement strategies and establish procurement tools that support green technology and that can be easily utilized by all government departments. For this proposal, small vessels are considered to be under 5 gross tonnes and less than 15 m. This project will identify categories of small vessels that would benefit from the replacement of the internal combustion engine (ICE) with low/zero emission alternatives. This RFI is intended to help us identify what vessels are considered to be good candidates for conversion.
- 2.5. This RFI is intended to help inform which technologies are ready and suitable for different mission profiles and categories of vessels. Annex C lists type of vessels that have been identified as suitable candidates for decarbonization. This list is varied as some vessels have been identified as suitable candidates based on the nature of their operations. In some cases, design and modifications required to a vessel of a certain size could be significant and it may be recommended to go with a purpose built vessel to get best performance and maintain capacity of the vessel. In other cases, low emission alternatives may include diesel outboards. The subsequent outcome will lead to the development of procurement strategies and the establishment of procurement tools that support green technology and that can be easily utilized by all government departments.

3. PURPOSE AND NATURE OF THE REQUEST FOR INFORMATION (RFI)

- 3.1. Government of Canada is requesting Industry feedback to identify, procure, convert and evaluate low/zero-emission engine conversions in small government vessels for the Government of Canada.
- 3.2. The objective of this Request for Information (RFI) is to seek initial input from Industry on potential options, capabilities and availability of technology to convert internal combustion engines (ICE) for small vessels with low/zero emission engines for all government vessels, including those related to operational requirements, sustainment, cost, and schedule.
- 3.3. Information received from Industry will be critical to refine procurement documents, such as Supply Arrangements (SA), Standing Offers (SO), the Request for Proposal (RFP) including technical specifications and evaluation criteria,
- 3.4. The intent following receipt of RFI responses from Industry is to have interactive engagement with Industry to determine the feasibility and procurement mechanisms in which to modernize the fleet.
- 3.5. This RFI is neither a call for tender nor an RFP. No agreement or contract will be entered into based on this RFI. The issuance of this RFI is not to be considered in any way a commitment by the Government of Canada, nor as authority to potential respondents to undertake any work that could be charged to Canada. This RFI is not to be considered as a commitment to issue a subsequent solicitation or award contract(s) for the work described herein.
- 3.6. Canada shall not be bound by anything stated in this document. Canada reserves the right to change at any time any or all parts of the requirement, as it deems necessary. Canada also reserves the right to revise its procurement approach, as it considers appropriate, either based on information submitted in response to this RFI or for any other reason it deems appropriate.

4. NATURE OF RESPONSES REQUESTED

- 4.1. Respondents are requested to provide their comments, concerns and, where applicable, alternative recommendations regarding how the requirements or objectives described in this RFI could be satisfied. Respondents are also invited to provide comments regarding the content, format and/or organization of any draft documents included in this RFI. Respondents should explain any assumptions they make in their responses.
- 4.2. Although the information collected may be provided as commercial-in-confidence (and, if identified as such, will be treated accordingly by Canada), Canada may use the information to assist in drafting performance specifications (which are subject to change) and for budgetary purposes.
- 4.3. Respondents are asked to identify if their response, or any part of their response, is subject to the Controlled Goods Regulations.
- 4.4. Participation in this RFI is encouraged, but is not mandatory. There will be no short-listing of potential suppliers for the purposes of undertaking any future work as a result of this RFI. Similarly, participation in this RFI is not a condition or prerequisite for the participation in any potential subsequent solicitation.
- 4.5. Respondents will not be reimbursed for any cost incurred by participating in this RFI.
- 4.6. The RFI closing date published herein is not the deadline for comments or input. Comments and input will be accepted any time up to the time when/if the next follow-on solicitation is published.

5. TREATMENT OF RESPONSES

- 5.1. Responses will not be formally evaluated. However, the responses received may be used by Canada to develop or modify procurement strategies or any draft documents contained in this RFI. Canada will review all responses received by the RFI closing date.
- 5.2. A review team composed of representatives from different government departments will review the responses. Canada reserves the right to hire any independent consultant, or use any Government resources that it considers necessary to review any response. Not all members of the review team will necessarily review all responses.
- 5.3. Respondents are encouraged to identify, in the information they share with Canada, any information that they feel is proprietary, third party or personal information. Please note that Canada may be obligated by law (e.g. in response to a request under the Access of Information and Privacy Act) to disclose proprietary or commercially-sensitive information concerning a respondent (for more information: <http://laws-RFIs.justice.gc.ca/eng/acts/a-1/>).
- 5.4. Canada may, in its discretion, contact any respondents to follow up with additional questions or for clarification of any aspect of a response. At its discretion, Canada may agree to meet with respondents to provide respondents with the opportunity to present and/or demonstrate their capabilities in relation to this RFI. Respondents' presentations shall be at no obligation to Canada and respondents will be responsible for all costs associated with Canada's invitation to make a presentation. However, respondents are not obliged to make a presentation.

6. RESPONSE

6.1. Response Format

Title Page

The first page of each volume of the response, after the cover page, should be the title page, which should contain:

- i) The title of the respondent's response;
- ii) The respondent's name and address;
- iii) A contact name, address, telephone number, and email address
- iv) The due date; and
- v) The RFI number.

Respondents are requested to provide responses according to the stream categories listed in Annex A. Please provide comments, concerns and, where applicable, alternative recommendations regarding how the requirements described in the RFI could be satisfied. Respondents should also list and explain any assumptions that they make in their responses. Annex B provides a list of questions that highlight some of the information that Canada is looking for. Not all questions need to be answered however as much amplifying information as possible would help Canada in progressing green solutions.

6.2. Response Submission

- a) Interested Respondents may submit their responses to the Public Works and Government Services Canada (PWGSC) Contracting Authority identified below, via email (no more than 5MB).

Contracting Authority

Dianne Tinkess
Public Works and Government Services Canada
Dianne.Tinkess@tpsgc-pwgsc.gc.ca

- b) Changes to this RFI may occur and are advertised on the Government Electronic Tendering System. Canada asks Respondents to visit Buyandsell.gc.ca regularly to check for changes, if any.

6.3. Enquiries

All enquiries and other communications related to this RFI must be directed exclusively to the Contracting Authority. All enquiries are to be submitted to the Contracting Authority no later than five (5) Calendar days before the closing date. Enquiries received after that time may not be answered.

6.4. Closing date for the RFI

Responses are encouraged at any time before the end date. Responses to this RFI are to be submitted to the Contracting Authority identified above, on or before 30 May 2022.

ANNEX "A"

KEY CAPABILITIES/CONSTRAINTS

Categories of Responses Requested

The solutions may be varied and complex. In some cases, design and modifications required to a vessel of a certain size could be significant and it might be recommended to go with a purpose built vessel to get best performance and maintain capacity of the vessel. The transition to low/zero emission vessels may take a multitude of paths and solutions. Respondents are to articulate how they may participate and contribute to the following solution streams. Respondents may respond to more than one stream;

1. Retrofit Electric. An existing vessel is converted to zero emission solution. ICE outboards are replaced with electric alternatives, fuel system is replaced by batteries or fuel cells and control systems are modified to meet the new requirements;
2. Retrofit diesel. An existing vessel is converted to a low emission solution. ICE outboards are replaced with diesel outboards alternatives, fuel system converted for diesel fuel and control systems are modified to meet the new requirements;
3. Purpose Built Vessel - Electric Outboards. Electric propulsion vessel is purposely built from an existing hull design or new design;
4. Purpose Built Vessel - Diesel Outboards. Diesel propulsion vessel is purposely built from an existing hull design or new design;
5. Infrastructure. Respondents are requested to provide information how they may support the infrastructure component of the low/zero emission initiative. This is to include shore charging information, shipborne charging electrical requirements, plug standards, amperage, voltage, etc.;
6. Innovation. Respondents may provide information on low/zero emission solutions that may help in to improve efficiency of engine or reduce GHG Emissions; and
7. Supply. Respondents may not be in the boat building or conversion business however they provide equipment such as motors and batteries to the electric boat market. Respondents are requested to provide information on their business and how they may be a catalyst in this initiative.

ANNEX "B"

1. ADDITIONAL INFORMATION

- 1.1. Respondents are to provide the information to assist the Government of Canada in the planning.
- 1.2. Respondents are asked to confirm their experience and capability to provide solutions for Canadian clients. Respondents should provide examples that demonstrate this capability. Respondents are requested to provide rough order of magnitude costing data. Costing data should include cost of conversion or build; as well as Integrated Logistics Support comprising of both In-Service Support and/or a Field Service Representative. If the Respondent offers a range of pricing, they should provide information on the pricing that is available.
- 1.3. Respondents should have experience providing support services for vessels that they produce. Has the vendor constructed and delivered a low/zero emission vessel. Provide details on previous or current builds. Include timelines, rough costs and vessel's characteristics.
- 1.4. If the Respondent has any other information regarding the capabilities of their proposed solution, they are to provide this information. Respondents should provide any product literature that they might possess and should provide a description of their capabilities in as much detail as possible.
- 1.5. Respondents are asked if they can demonstrate a vessel and under what conditions they would be able to so. If there is a geographical constraint regarding a possible vessel demonstration, the Respondent may indicate their constraint.

2. QUESTIONS

Environment

1. What is their cold weather performance/reliability, not just Arctic but also in the North Atlantic? Wouldn't batteries deliver much less power if exposed to cold temperatures (like an arctic environment)?
2. What is the noise output across spectrum of operating conditions?

Capabilities

3. Is your company capable of/interested in doing conversions/repowering?
4. How long would it take to repower a small vessel?
5. Are electric vessels reliable over prolonged periods, such as a boarding evolution?
6. Is the weight of the new electric boats within the capability of the RHIB davits?
7. Will the extra weight make it more dangerous to launch/recover in heavier sea states?
8. How safe are the batteries or fuel cells over the long haul in a saltwater environment?
9. Have the boats been tested in a Navy use case versus just in ideal climates or driving around in harbour?
10. How long would it take to charge from empty to full? Would it require 30 or 50 amps?
11. What is the range on a full charge?
12. How much would the vessel weigh?
13. What is the battery type? How many charge cycles are the batteries good for?

Maintenance

14. Are the engines repairable at sea by the ship's technicians?

15. Are parts to service them readily available in foreign ports, as they are for the current RHIBs?
Are the boats supported by reliable or well-established OEMs with worldwide support networks?
16. What type of technician is able to work on the vessels' propulsion systems? Are certain certifications required?
17. What is the required frequency of engine maintenance?
18. What is the availability of spares and consumables that will need to be replaced during the course of regular maintenance?
19. What is the life expectancy of the engines, batteries, and propulsion systems?

ANNEX "C" PROPOSED VESSELS

The following are a list of potential vessels for decarbonization. The list is meant to provide industry with examples of vessels that Canada is looking at to convert. Information provided may lead to other potential vessels.

Vessel Type	Operating Profile				Area of Operation	Specific requirements
	Speed	Time	Range	Capacity		
5m utility RHIB used on Patrol Vessels	15 knots	1 - 2 hours	10 nm	2 person crew	Used to ferry personnel and equipment to/from anchorages	To be powered from Patrol Vessel
5m open aluminum vessel	15 - 20 knots	1 - 2 hours	10 nm	Capacity 3 persons with 25kg personal gear/person. Additional gear on deck: 150kg	Small lakes in Ontario/Quebec, protected harbours on Georgian Bay and protected areas within Thousand Islands region of St. Lawrence River.	Personnel transportation
5-6 m Open RHIB	Cruise 25 knots	4 - 6 hours	50 nm cruising range	Operator 2 adult passengers 25KG (Max) personal gear each Minimum 150KG payload	Inland waters	Electric battery powered outboard motor propulsion only; Battery driven only, no back up power; Easily towed, launched and retrieved at a typical boat launch using a half ton pickup truck
6m Cabin RHIB.	Cruise 25 knots	4 - 6 hours	50 nm cruising range	Capacity 4 persons with 25kg personal gear/person. Additional gear on deck: 150kg.	Off Vancouver Island, Strait of Juan de Fuca, Strait of Georgia, the Great Lakes and St. Lawrence River and Gulf of St Lawrence.	Personnel transportation
7m Cabin RHIB	Cruise 25 knots	4 - 6 hours	50 nm cruising range	2 person crew	Salish Sea and in particular the Strait of Georgia	Electric propulsion to lessen the impact of their fleet on marine life
7m Cabin RHIB	Patrol 15 knots	1 - 2 hours	20 nm	2 person crew	Harbour Patrol vessel	Jetty charging required

7m Cabin/T top RHIB	Cruise 25 knots	4 - 6 hours	50 nm	Capacity 6 persons with 25kg personal gear/person. Additional gear on deck: 300kg	Coastal navigation, up to 15 km from the shoreline, off Vancouver Island, Strait of Juan de Fuca, Strait of Georgia, the Great Lakes and St. Lawrence River and Gulf of St Lawrence.	Personnel transportation
10 m Cabin RHIB	Cruise 25 knots	4 - 6 hours	50 nm	4 person crew	Straits of Juan de Fuca, the Great Lakes and St. Lawrence River and Gulf of St Lawrence.	Border Security