



<p>RETURN BIDS TO: RETOURNER LES SOUMISSIONS À:</p> <p>Bid Receiving - Environment Canada / Réception des soumissions – Environnement Canada</p> <p>Email Address: ec.soumissions-bids.ec@canada.ca Attention: Barry McKenna Solicitation Number: 5000054777</p> <p>BID SOLICITATION DEMANDE DE SOUMISSIONS</p> <p>PROPOSAL TO: ENVIRONMENT CANADA</p> <p>We offer to perform or provide to Canada the services detailed in the document including any attachments and annexes, in accordance with the terms and conditions set out or referred to in the document, at the price(s) provided.</p> <p>SOUSSION À: ENVIRONNEMENT CANADA</p> <p>Nous offrons d'effectuer ou de fournir au Canada, aux conditions énoncées ou incluses par référence dans le document incluant toutes pièces jointes et annexes, les services détaillés dans le document, au(x) prix indiqué(s).</p>	<p>Title – Titre Best Available Technologies and Best Environmental Practices, including Emerging Technologies, in the Liquefied Natural Gas sector</p>	
	<p>EC Bid Solicitation No. /SAP No. – N° de la demande de soumissions EC / N° SAP</p> <p>5000054777</p>	
	<p>Date of Bid solicitation (YYYY-MM-DD) – Date de la demande de soumissions (AAAA-MM-JJ)</p> <p>2020-11-13</p>	
	<p>Bid Solicitation Closes (YEAR-MM-DD) - La demande de soumissions prend fin (AAAA-MM-JJ)</p> <p>at – à 2:00 P.M. on – le 2020-12-08</p>	<p>Time Zone – Fuseau horaire</p> <p>EST</p>
	<p>F.O.B – F.A.B</p>	
	<p>Address Enquiries to - Adresser toutes questions à Barry McKenna Barryjoseph.mckenna@canada.ca</p>	
	<p>Telephone No. – N° de téléphone 819-938-9425</p>	<p>Fax No. – N° de Fax</p>
	<p>Delivery Required (YEAR-MM-DD) – Livraison exigée (AAAA-MM-JJ) See herein</p>	
	<p>Destination of Services / Destination des services See Herein</p>	
	<p>Security / Sécurité There is no security requirement for this solicitation</p>	
<p>Vendor/Firm Name and Address - Raison sociale et adresse du fournisseur/de l'entrepreneur</p>		
<p>Telephone No. – N° de téléphone</p>	<p>Fax No. – N° de Fax</p>	
<p>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)</p>		
<p>Signature</p>	<p>Date</p>	



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TITLE: Best Available Technologies (BAT) and Best Environmental Practices (BEP), including Emerging Technologies, in the Liquefied Natural Gas (LNG) sector

PART 1 - GENERAL INFORMATION

1. Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Insurance Requirements
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Basis of Payment, and Insurance Requirements.

2. Summary

- 2.1 ECCC is seeking qualitative and quantitative data on the BAT/BEP, including emerging technologies, for reducing the GHG emissions from LNG projects in Canada and internationally. The assessment will consider all project phases including, construction, operation, and decommissioning. The assessment will also evaluate potential scenarios outlining how LNG projects could achieve net-zero GHG emissions by 2050, while also considering alternative fuels to LNG in the future, as detailed in the Statement of Work, Annex A to the bid solicitation.

The period of the contract is from Contract Award to November 30, 2021.

- 2.2 Bidders must provide a list of names, or other related information as needed, pursuant to section 01 Integrity Provisions of Standard Instructions 2003.
- 2.3 For services requirements, bidders in receipt of a pension or a lump sum payment must provide the required information as detailed in article 3 of Part 2 of the bid solicitation.
- 2.4 The requirement is subject to the provisions of the following trade agreements:
 - the Canada Free Trade Agreement (CFTA)
 - the Canada –Chile Free Trade Agreement (CCFTA)
 - the Canada-Colombia Free Trade Agreement
 - the Canada-Honduras Free Trade Agreement
 - the Canada-Korea Free Trade Agreement (CKFTA)
 - the Canada-Panama Free Trade Agreement
 - the Canada-Peru Free Trade Agreement (CPFTA) .



3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.



PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the PWGSC *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2020-05-28) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

The standard instructions 2003 are modified as follows:

Under “Text” at 02:

Delete: “Procurement Business Number”

Insert: “Deleted”

At Section 02 Procurement Business Number

Delete: In its entirety

Insert: “Deleted”

At Section 05 Submission of Bids, Subsection 05 (2d):

Delete: In its entirety

Insert: “send its bid only to Environment Canada (EC) as specified on page 1 of the bid solicitation or to the address specified in the bid solicitation;”

At Section 06 Late Bids:

Delete: “PWGSC”

Insert: “Environment Canada”

At Section 07 Delayed Bids:

Delete: “PWGSC”

Insert: “Environment Canada”

At Section 08 Transmission by Facsimile, Subsection 08 (1):

Delete: In its entirety

Insert: “Bids may be submitted by facsimile if specified in the bid solicitation.”

At Section 12 Rejection of Bid, Subsection 12 (1) a. and b.:

Delete: In their entirety

Insert: “Deleted”

At Section 17 Joint Venture, Subsection 17 (1) b.:

Delete: “the Procurement Business Number of each member of the joint venture,”

Insert: “Deleted”

At Section 20 Further Information, Subsection 20 (2):

Delete: In its entirety

Insert: “Deleted”

At Section 05 Submission of Bids, Subsection 05 (4):

Delete: “sixty (60) days”



Insert: "one hundred and twenty (120) days"

2. Submission of Bids

Bids must be submitted to Environment and Climate Change Canada (ECCC) at the address and by the date, time and place indicated on page 1 of the bid solicitation.

3. Former Public Servant – Competitive Bid

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c.C-17, the *Defence Services Pension Continuation Act*, 1970, c.D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c.R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c.R-11, the *Members of Parliament Retiring Allowances Act*, R.S., 1985, c.M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c.C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes () No ()**

If so, the Bidder must provide the following information, for all FPS in receipt of a pension, as applicable:



- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes** () **No** ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

4. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

5. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.



Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

6. Basis for Canada's Ownership of Intellectual Property

Environment Canada has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, on the following grounds:

the main purpose of the contract, or of the deliverables contracted for, is to generate knowledge and information for public dissemination;

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid - 1 soft copy in PDF format by e-mail
Section II: Financial bid - 1 soft copy in PDF format by e-mail
Section III: Certifications - 1 soft copy in PDF format by e-mail

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid

Note for electronic submission of bids:

In order to be considered, bids must be received no later than the date and time indicated on the cover page to herein as the "Closing Date." Bids received after the Closing Date will be considered non-responsive and will not be considered for contract award. Bids submitted by email must be submitted ONLY to the following email address:

Email Address: ec.soumissions-bids.ec@canada.ca
Attention: Barry McKenna
Solicitation Number: 5000054777

Bidders should ensure that their name, address, Closing Date of the solicitation and Solicitation Number are clearly indicated in the body of their email. Bids and supporting information may be submitted in either English or French.

The total size of the email, including all attachments, **must be less than 15 megabytes (MB)**. It is each Bidder's responsibility to ensure that the total size of the email does not exceed this limit. Bids sent by fax will not be accepted.

It is important to note that emails systems can experience systematic delays and, at times, large attachments may cause systems to hold or delay transmission of emails. It is solely the Bidder's responsibility to ensure that the Contracting Authority receives a bid on time, in the mailbox that has been identified for bid receipt purposes. Date stamps for this form of transmission are not acceptable. Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.



In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- (1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- (2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders; and
- (3) print on both sides of the paper.

Section I: Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

Part 4, Evaluation Procedures, contains additional instructions that bidders should consider when preparing their technical bid

Section II: Financial Bid

- 1.1 Bidders must submit their financial bid in Canadian funds and in accordance with the Basis of Payment in Annex B. The total amount of Applicable Taxes must be shown separately.
- 1.2 Bidders should include the following information in their financial bid:
 - (a) Their legal name; and
 - (b) The name of the contact person (including this person's mailing address, phone and facsimile numbers and email address) authorized by the Bidder to enter into communications with Canada with regards to their bid; and any contract that may result from their bid.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.



- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Technical Evaluation

Except where expressly provided otherwise, the experience described in the bid must be the experience of the Bidder itself (which includes the experience of any companies that formed the Bidder by way of a merger but does not include any experience acquired through a purchase of assets or an assignment of contract). The experience of the Bidder's affiliates (i.e. parent, subsidiary or sister corporations), subcontractors, or suppliers will not be considered.

1.1.1 Joint Venture Experience

- a) Where the Bidder is a joint venture with existing experience as that joint venture, it may submit the experience that it has obtained as that joint venture.

Example: A bidder is a joint venture consisting of members L and O. A bid solicitation requires that the bidder demonstrate experience providing maintenance and help desk services for a period of 24 months to a customer with at least 10,000 users. As a joint venture (consisting of members L and O), the bidder has previously done the work. This bidder can use this experience to meet the requirement. If member L obtained this experience while in a joint venture with a third party N, however, that experience cannot be used because the third party N is not part of the joint venture that is bidding.

- b) A joint venture bidder may rely on the experience of one of its members to meet any given technical criterion of this bid solicitation.

Example: A bidder is a joint venture consisting of members X, Y and Z. If a solicitation requires: (a) that the bidder have 3 years of experience providing maintenance service, and (b) that the bidder have 2 years of experience integrating hardware with complex networks, then each of these two requirements can be met by a different member of the joint venture. However, for a single criterion, such as the requirement for 3 years of experience providing maintenance services, the bidder cannot indicate that each of members X, Y and Z has one year of experience, totaling 3 years. Such a response would be declared non-responsive.

- c) Joint venture members cannot pool their abilities with other joint venture members to satisfy a single technical criterion of this bid solicitation. However, a joint venture member can pool its individual experience with the experience of the joint venture itself. Wherever substantiation of a criterion is required, the Bidder is requested to indicate which joint venture member satisfies the requirement. If the Bidder has not identified which joint venture member satisfies the requirement, the Contracting Authority will provide an opportunity to the Bidder to submit this information during the evaluation period. If the Bidder does not submit this information within the period set by the Contracting Authority, its bid will be declared non-responsive.

Example: A bidder is a joint venture consisting of members A and B. If a bid solicitation requires that the bidder demonstrate experience providing resources for a minimum number of 100 billable days, the bidder may demonstrate that experience by submitting either:

- o Contracts all signed by A;
- o Contracts all signed by B; or
- o Contracts all signed by A and B in joint venture, or
- o Contracts signed by A and contracts signed by A and B in joint venture, or
- o Contracts signed by B and contracts signed by A and B in joint venture.

that show in total 100 billable days.

- d) Any Bidder with questions regarding the way in which a joint venture bid will be evaluated should raise such questions through the Enquiries process as early as possible during the bid solicitation period.



1.1.1 Mandatory Technical Criteria

See Attachment 1 to Part 4 – Mandatory Requirements and Evaluation Criteria

1.1.2 Point Rated Technical Criteria

See Attachment 1 to Part 4 – Point Rated Technical Criteria

1.2 Financial Evaluation

1.2.1 Mandatory Financial Criteria

The maximum funding available for the Contract resulting from the bid solicitation is \$150,000.00 (Applicable Taxes extra). Bids valued in excess of this amount will be considered non-responsive. This disclosure does not commit Canada to pay the maximum funding available.

1.2.2 Price evaluation

The price of the bid will be evaluated in Canadian dollars, the Applicable Taxes excluded, Canadian customs and excise taxes included.

For evaluation purposes only, the price of the bid will be determined as described in Annex B.

2. Basis of Selection – Highest Combined Rating of Technical Merit 70% and Price 30%.

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and
 - c. obtain the required minimum points specified for each criterion for the technical evaluation, and
 - d. obtain the required minimum of 51 points overall for the technical evaluation criteria which are subject to point rating.
The rating is performed on a scale of 85 points.
2. Bids not meeting (a) or (b) or (c) and (d) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70% for the technical merit and 30% for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 70%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30%.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.



The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)

	Bidder		
	Bidder 1	Bidder 2	Bidder 3
Overall Technical Score	115/135	89/135	92/135
Bid Evaluated Price	\$55,000.00	\$50,000.00	\$45,000.00
Calculations			
Technical Merit Score	$115/135 \times 70 = 59.63$	$89/135 \times 70 = 46.15$	$92/135 \times 70 = 47.70$
Pricing Score	$45/55 \times 30 = 24.55$	$45/50 \times 30 = 27.00$	$45/45 \times 30 = 30.00$
Combined Rating	84.18	73.15	77.70
Overall Rating	1st	3rd	2nd



**ATTACHMENT 1 TO PART 4
MANDATORY TECHNICAL CRITERIA AND POINT RATED TECHNICAL CRITERIA**

Evaluation of proposals

The proposal should describe in sufficient detail the qualifications and relevant experience of the proposed resources. Each proposal meeting the mandatory requirements will be evaluated and rated according to the criteria described below and to the weighting described in Table 2. Any relevant information to enable Environment and Climate Change Canada to adequately score the proposal based on the criteria listed below must be included. Information not included in the proposal will not be taken into consideration.

MANDATORY CRITERIA

Table 1: Mandatory Criteria

	Mandatory Criteria	Met/Not Met
M1	<p>The Bidder must provide a description of the team that it proposes to perform the work. The description must:</p> <ul style="list-style-type: none"> a) Identify each of the key team members <p>Key team members are those that will be significant contributors to the deliverables.</p> <ul style="list-style-type: none"> b) describe the roles and responsibilities of each team member and c) state which of the key team members will be assigned the role of Project Manager. The Project Manager will be the primary point of contact with the Bidder and will be responsible for the conduct of the work. <p>The Bidder must provide a detailed résumé for EACH of the proposed key team member(s), which clearly describes relevant work experience, academic qualifications, professional certifications and publications. The Bidder should bold-face or highlight the relevant areas in the resources résumés.</p>	
M2	<p>The Bidder must demonstrate that at least one key team member has a relevant post-graduate degree in any field in engineering or environmental science.</p> <p>*The list of recognized assessment organizations can be found under the Canadian Information Centre for International Credentials website, at the following internet link: http://www.cicic.ca/indexe.stm ;</p>	
M3	<p>The Bidder must demonstrate that the proposed Project Manager has a minimum of 5 cumulative years' of experience managing projects related to the assessment and/or design of technologies to reduce GHG emissions in energy and/or industrial sectors.</p> <p>This criterion must be demonstrated by providing a list of projects that have been completed within the past 10 years from the date of bid closing. Project durations (in years and/or months) must be provided for each project, along with the total sum of relevant project durations.</p>	



	<p>*Projects with duration of less than 3 months will not be taken into account.</p>	
M4	<p>The Bidder must demonstrate that at least one key team member has a minimum of 3 cumulative years' experience relating to the assessment and/or design of technologies and practices to reduce GHG emissions from LNG facilities and/or any alternative fuels to LNG such as hydrogen and biogenic LNG.</p> <p>This criterion must be demonstrated by providing a list of projects that have been completed within the past 10 years from the date of bid closing. Project durations (in years and/or months) must be provided for each project, along with the total sum of relevant project durations.</p> <p>*Projects with duration of less than 3 months will not be taken into account.</p>	



RATED CRITERIA

Table 2: Point Rated Technical Criteria

	Rated Criteria	Maximum Score
R1	Methodological approach (maximum: 22, minimum 12)	
	The Bidder's proposal should demonstrate a comprehensive methodological approach to complete all aspects of the project. The following rating scheme will be used to evaluate the approach.	
R1.1	<p>The proposed methodological approach</p> <p>(12 pts) The methodological approach includes a detailed description of the steps that will be undertaken to meet each deliverable in the Statement of Work. The approach is complete, realistic and feasible</p> <p>(9 pts) The methodological approach includes a description of the steps that will be undertaken to meet each deliverable in the Statement of Work. All key steps are included but some steps are not clearly described with sufficient detail. The approach is realistic and feasible.</p> <p>(6 pts) The methodological approach includes a description of the steps that will be undertaken to meet each deliverable in the Statement of Work, but is a) missing a key step; or b) some steps are not realistic or feasible</p> <p>(3 pts) The methodological approach is incomplete (missing steps), not realistic or not feasible.</p> <p>There is no methodological approach in the proposal</p>	12 points
R1.2	<p>The proposed data sources</p> <p>(5 pts) The proposed data sources to be used for completing each task are clearly described in detail; The data sources are multiple, varied and comprehensive, with preference for credible, reliable sources and which cover the breadth of the LNG sector to ensure quality data and information throughout the project;</p> <p>(3 pts) The proposed data sources to be used for completing each task are clearly described; Some key data sources are not provided OR lacking sufficient detail to cover the breadth of the LNG sector and ensure quality information and data throughout the project;</p> <p>(0 pts) The data sources provided are limited in details OR incomplete.</p>	5 points
R1.3	<p>Possible problems and challenges that could impact the quality and/or delivery of the project and proposed solutions</p> <p>(5 pts) Possible problems and challenges that could arise that would impact the quality and/or delivery of the project are clearly described; the proposed solutions adequately mitigate the issues identified and are within the scope of the project.</p> <p>(3 pts) Possible problems and challenges that could arise that would impact the quality and/or delivery of the project are described but incomplete or the proposed solutions do not adequately mitigate the issues identified or are not within the scope of the project</p> <p>(0 pts) Possible problems and challenges that could arise that would impact the</p>	5 points



	Rated Criteria	Maximum Score
	quality and/or delivery of the project are not described.	
R2	Work plan and Schedule (maximum : 24, minimum 12)	
	The Bidder should provide a work plan that identifies the tasks required to meet the project timelines, the allocation of resources to the tasks, and the quality assurance measures that will be applied. The following rating scheme will be used to evaluate this criterion:	
R2.1	Description of schedule and tasks	
	<p>(9 pts) The work plan demonstrates that the proposed project will meet the time schedule requirements requested in the Statement of Work, and explains in a clear and logical manner all the tasks and deliverables that will be needed to reach the Objectives of the Statement of Work.</p> <p>(6 pts) The work plan demonstrates that the proposed project may meet the time schedule requirements requested in the Statement of work; key tasks are included but not explained in a clear and logical manner how they will reach the Objectives of the Statement of Work.</p> <p>(3 pts) The work plan presented is not entirely complete or lacks details to demonstrate that the proposed project will meet the time schedule requirements requested in the Statement of work; key tasks are missing to reach the objectives of the Statement of Work.</p> <p>(0 pts) The Contractor did not include a schedule or work plan in the proposal.</p>	9 points
R2.2	Resource Allocation:	
	<p>(12 pts) For each Task, the personnel assigned to the Task are each qualified for the task and have experience relevant to their assigned role in successfully completing the Task.</p> <p>(8 pts) For some Tasks, only some personnel assigned to the Task are qualified and have experience relevant to their assigned role in successfully completing the Task but the overall project team can deliver.</p> <p>(4 pts) The personnel assigned to the tasks are not qualified and/or not experienced to ensure successful completion of the Project.</p> <p>(0 pts) There are no personnel assigned to each task</p>	12 points
R2.3	Quality Assurance	
	<p>(3 pts) Quality assurance is addressed throughout the project, measures used for quality assurance are described and are sufficient to ensure the quality of all deliverables.</p> <p>(2 pts) Quality assurance is addressed but measures used for quality assurance are not described with sufficient detail at each stage of the project.</p> <p>(0 pts) Quality assurance is not addressed in the work plan</p>	3 points
R3	Project Team Experience (maximum : 24, minimum 12)	



	Rated Criteria	Maximum Score
	<p>A maximum of four (4) reference projects should be presented for each topic, in tabular format. If more than four (4) referenced projects are submitted for a given topic, only the first four (4) in order of presentation will be evaluated. All referenced projects must:</p> <ul style="list-style-type: none"> • have been performed within the last ten (10) years from the date of bid closing and be at least 3 months in duration; • have included at least one of the proposed key project team members; and, • identify the client name, project start and end dates, and project description. • provide a description of the scope of the work performed; the description should clearly identify the type of project; <p>The reference projects should have similar or greater scopes and budget to the proposed deliverables outlined in the Statement of Work.</p> <p>Definition: Similarity in scope: the degree of comparability of the example project's context, objective and work involved to the mandate outlined in the SoW.</p>	
R3.1	<p>Topic 1 Experience in the assessment and/or design of technologies and practices to reduce GHG emissions from LNG facilities, with role(s) of proposed key team members indicated.</p> <p>3 points will be awarded per project that satisfies topic 1 experience requirements to a maximum of 12 points.</p>	12 points
R3.2	<p>Topic 2 Experience in evaluating emerging technologies for future reduction of GHG emissions from LNG facilities and/or any alternative fuels to LNG such as hydrogen or biogenic LNG.</p> <p>Example projects to be provided could include emerging technologies from both Canadian and global sources, and at various stages of pre-commercial technology development. Alternative fuels could include, but not be limited to, hydrogen, biogas, and syngas. Role(s) of proposed key team members must be indicated for each example project.</p> <p>3 points will be awarded per project that satisfies topic 2 experience requirements to a maximum of 12 points.</p>	12 points
R4	Project Manager's Experience (maximum 15 points, minimum 8)	
R4.1	<p>The bidder should demonstrate, using project description(s), that the proposed Project Manager has the following experience managing projects of similar or greater scope related to the assessment and/or design of GHG emission reduction technologies and practices in LNG facilities and/or any alternative fuels to LNG such as hydrogen or biogenic LNG.</p>	



	Rated Criteria	Maximum Score
	<p>A maximum of two (2) reference projects will be evaluated as described below. If the bidder submits more than two (2) referenced projects, only the first two (2) in order of presentation will be evaluated. All referenced projects must have been performed within the last ten (10) years from the date of bid closing.</p> <p>Definition:</p> <ol style="list-style-type: none"> 1. Similarity in scope: the degree of comparability of the example project's context, objective and work involved to the mandate outlined in the SoW. <p>Each of the proposed projects will be awarded points as follows.</p> <p>(6 pts) The project managed by the proposed project manager was of similar or greater scope and was related to the assessment and/or design of technologies and practices to reduce GHG emissions from LNG facilities and/or any alternative fuels to LNG such as hydrogen or biogenic LNG.</p> <p>(3 pts) The referenced project is smaller in terms of scope but is related to the assessment and/or design of technologies and practices to reduce GHG emissions from LNG facilities and/or any alternative fuels to LNG such as hydrogen or biogenic LNG.</p> <p>(0 pts) No reference projects provided or the reference projects were not related to the assessment and/or design of technologies and practices to reduce GHG emissions from LNG facilities and/or any alternative fuels to LNG such as hydrogen or biogenic LNG.</p>	12 points
R4.2	<p>Details on back-up arrangements for the Project Manager and their capabilities</p> <p>The Bidder must provide a detailed résumé for the proposed back-up Project Manager, which clearly describes relevant work experience, academic qualifications, professional certifications and publications.</p> <p>The Bidder should bold-face or highlight the relevant areas in the resources résumés. The bidder should also clearly highlight at least three (3) years of relevant project management experience in the detailed résumé. This criterion must be demonstrated by providing a list of projects that have been completed within the past 10 years from the date of bid closing. Project durations (in years and/or months) must be provided for each project, along with the total sum of relevant project durations.</p> <p>*Projects with duration of less than 3 months will not be taken into account.</p> <p>The Bidder must also provide a description of the back-up arrangements that would be in place for the duration of the contract to ensure the objectives and time schedule requirements outlined in the SOW would be met.</p> <p>(3 pts) The arrangements for the back-up Project Manager are clearly presented and the back-up Project Manager has at least three (3) years</p>	3 points



	Rated Criteria	Maximum Score
	of project management experience	
(2 pts)	The back-up arrangements are described but incomplete OR the proposed back-up Project Manager does not have at least three (3) years of project management experience.	
(0 pts)	The back-up arrangements are not provided OR the back-up Project Manager has not been identified.	
	Total	85 points
	Total minimum points required: 51 points.	



PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

1. Certifications Required Precedent to Contract Award

1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

2. Additional Certifications Required Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the bid non-responsive.

2.1 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

2.2 Education and Experience

PWGSC SACC Manual clause A3010T (2010-08-16) Education and Experience

2.3 Former Public Servant



PWGSC SACC Manual clause A3026T (2014-06-26) Former Public Servant – Competitive Bid

3. Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

PART 6 – INSURANCE

1. Insurance Requirements

1. The Contractor must obtain Errors and Omissions Liability (a.k.a. Professional Liability) insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature but for not less than \$1,000,000 per loss and in the annual aggregate, inclusive of defence costs.
2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The following endorsement must be included:

Notice of Cancellation: The Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.



PART 7 - RESULTING CONTRACT

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

1. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A.

2. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the PWGSC *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

2.1 General Conditions

2010B (2020-05-28), General Conditions - Professional Services (Medium Complexity), as modified below, apply to and form part of the Contract.

General conditions 2010B is modified as follows:

At Section 12 Transportation Costs

Delete: In its entirety

Insert: "Deleted"

At Section 13 Transportation Carriers" Liability

Delete: In its entirety.

Insert: "Deleted"

At Section 18, Confidentiality:

Delete: In its entirety

Insert: "Deleted"

Insert Subsection: "35 Liability"

"The Contractor is liable for any damage caused by the Contractor, its employees, subcontractors, or agents to Canada or any third party. Canada is liable for any damage caused by Canada, its employees or agents to the Contractor or any third party. The Parties agree that no limitation of liability or indemnity provision applies to the Contract unless it is specifically incorporated in full text in the Articles of Agreement. Damage includes any injury to persons (including injury resulting in death) or loss of or damage to property (including real property) caused as a result of or during the performance of the Contract."

A. For professional services requirements where the deliverables are copyrightable works:

At Section 19 Copyright

Delete: In its entirety

Insert:

1. In this section:

"Material" means anything that is created or developed by the Contractor as part of the Work under the Contract, and in which copyright subsists.

"Background Information" means all Intellectual Property that is not Foreground Information that is incorporated into the Work or necessary for the performance of



- the Work and that is proprietary to or the confidential information of the Contractor, its subcontractors or any other third party;
"Foreground Information" means all Intellectual Property first conceived, developed, produced or reduced to practice as part of the Work under the Contract;
2. Material that is created or developed by the Contractor as part of the Work under the Contract belongs to Canada. The Contractor must incorporate the copyright symbol and either of the following notices, as appropriate: © Her Majesty the Queen in right of Canada (year) or © Sa Majesté la Reine du chef du Canada (année).
 3. At the request of the Contracting Authority, the Contractor must provide to Canada, at the completion of the Work or at such other time as the Contracting Authority may require, a written permanent waiver of moral rights as defined in the [Copyright Act](#), R.S., 1985, c. C-42, in a form acceptable to the Contracting Authority, from every author that contributed to the Work. If the Contractor is an author, the Contractor permanently waives the Contractor's moral rights.
 4. All Intellectual Property Rights in the Material belongs to Canada as soon as they come into existence. The Contractor has no right in or to any such Intellectual Property except any right that may be granted in writing by Canada.
 5. The Contractor also grants to Canada a non-exclusive, perpetual, irrevocable, worldwide, fully-paid and royalty-free license to use the Background Information to the extent that this information is required by Canada to exercise its rights to use the Material. This license cannot be restricted in any way by the Contractor providing any form of notice to the contrary, including the wording on any shrink-wrapped license attached to any deliverable.

2.3 Specific Person(s)

The Contractor must provide the services of the following person(s) to perform the Work as stated in the Contract: *(to be determined)*.

3. Security Requirement

3.1 There is no security requirement applicable to this Contract.

4. Term of Contract

4.1 Period of the Contract

The period of the Contract is from date of Contract award to November 30, 2021 inclusive

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Josée Francoeur
Title: A/Team Manager – Procurement – Operations East, NCR
Organization: NCR Procurement and Contracting
Finance Branch
Environment and Climate Change Canada
Address: 200 Sacré-coeur Blvd., 3rd Floor, Rm 335
Gatineau QC K1A 0H3
Telephone: 819-938-3822
E-mail address: josee.francoeur@canada.ca



The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Technical Authority

The Technical Authority for the Contract is: *(to be completed at contract award)*

Name:

Title:

Organization:

Address:

Telephone:

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6. Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a *Public Service Superannuation Act* (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

7. Payment

7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ _____ in accordance with Annex B. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

8. Invoicing Instructions

8.1 Milestone Payments

8.1.1 Canada will make milestone payments in accordance with the Schedule of Milestones detailed in Annex B of the Contract and the payment provisions of the Contract if:

- (a) an accurate and complete claim for payment and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract



9. Certifications

9.1 Compliance

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

10. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

11. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) 2010B General Conditions - Professional Services (Medium Complexity) (2020-05-28) as modified;
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) Annex C, Insurance Requirements;
- (f) the Contractor's bid dated (*to be determined*),

12. Insurance Requirements – Specific requirement

The Contractor must comply with the insurance requirements specified in Annex C. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an Insurer licensed to carry out business in Canada, however, for Foreign-based Contractors, coverage must be placed with an Insurer with an A.M. Best rating no less than "A-". The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.



ANNEX A STATEMENT OF WORK

Best Available Technologies and Best Environmental Practices (BAT/BEP), including Emerging Technologies, in the LNG sector

1. Background

On August 28th, 2019, the Government of Canada adopted new legislation that repeals and replaces the Canadian Environmental Assessment Act, 2012 (CEAA 2012). Through the adopted [Impact Assessment Act \(IAA\)](#), the Government is enforcing new rules that protect the environment, recognize and respect Indigenous rights, and strengthen the economy. These new rules involve a shift from environmental assessment to impact assessment. The IAA establishes a new process for considering environmental, health, social and economic effects of projects that will undergo a federal impact assessment. This includes the extent to which the effects of the designated project hinder or contribute to the Government of Canada's ability to meet its commitments in respect of climate change such as the Paris Agreement, Canada's 2030 target and the goal of Canada achieving net-zero emissions by 2050.

The IAA outlines the factors to be included in an impact assessment. The following three factors taken from the IAA frame the scope of this work and the tasks outlined in the work description.

- *“The purpose of and need for the designated project”*
- *“any alternatives to the designated project that are technically and economically feasible and are directly related to the designated project”*
- *“alternative means of carrying out the designated project that are technically and economically feasible, including through the use of best available technologies, and the effects of those means”*

The Government of Canada published a revised version of the [Strategic Assessment of Climate Change](#) (SACC) in October 2020. This document describes the climate change-related information requirements throughout the federal impact assessment process and requires proponents of projects with a lifetime beyond 2050 to provide credible plans to achieve net-zero emissions by 2050. Information requirements will also include describing the mitigation measures projects will undertake to minimize Greenhouse Gas (GHG) emissions, including the use of best available technologies and best environmental practices (BAT/BEP), including emerging technologies, through all phases of the project. The SACC will enable consistent, predictable, efficient, and transparent consideration of climate change in impact assessments.

Any information provided in this Statement of Work should not be interpreted as a policy decision.

2. Objectives

ECCC is seeking qualitative and quantitative data on the **BAT/BEP**, including **emerging technologies**, for reducing the GHG emissions from Liquefied Natural Gas (LNG) projects in Canada and internationally. The assessment must consider all project phases including, construction, operation, and decommissioning. The assessment must also evaluate potential scenarios outlining how LNG projects could achieve net-zero GHG emissions by 2050, while also considering alternative fuels to LNG in the future.



3. Scope

To support the Government of Canada net-zero by 2050 goal, ECCC is seeking information on GHG emission reduction opportunities from LNG projects and alternative fuels to LNG both in Canada and internationally. In order to assess the GHG emissions associated with those projects, the scope of the assessment must include the following activities.

- LNG and alternative fuels¹ processing facilities (including liquefaction and regasification)
- LNG and alternative fuels storage facilities
- LNG and alternative fuels import and export terminals
- LNG and alternative fuels transportation
 - o This must include LNG and/or alternative fuel transportation from the project including the following transportation methods.
 - Marine shipping (up to 12 nautical miles from shore, representing Canada's territorial sea and covering all ship movements within Canadian waters)
 - Pipeline
 - Truck
 - Rail

The scope of the emissions to be included in this assessment (including the net-zero GHG emission scenarios) are the net GHG emissions (as defined in section 3 of the SACC) of the project, aligned with the project activities above (including the LNG and/or alternative fuels transportation methods from the facility). Upstream and downstream emissions are not included in scope.

4. Time horizon

In 2019, the Government of Canada announced a commitment for Canada to achieve net-zero emissions by 2050. As most LNG projects will operate to 2050 and beyond, the Contractor must present analysis and projections of technology development up to 2050 to allow ECCC to understand how the BAT/BEP, including emerging technologies and alternative fuels, can contribute to Canada fulfilling this commitment. This will also allow ECCC to understand how technologies and practices could be phased in during the project lifetime, including how they could be implemented during periods of project maintenance and facility upgrades.

5. Work Description

Throughout each task outlined below, the Contractor should seek out input and feedback (through surveys and other means of communications) on technologies and practices from a wide range of resources including industry stakeholders, LNG operators, equipment manufacturers, and academic scholars to gain insights on the BAT/BEP, including emerging technologies, from both Canadian and global sources. Technologies, including alternative fuels, that could lead to important GHG emission reductions but require financial incentives for the commercialization phase must be included in the analysis.

The Contractor must carry out the following tasks:

¹ Alternative fuels refers to any fuel that has a GHG reduction potential compared to LNG such as LNG-hydrogen blend, liquid hydrogen, biogenic LNG, etc.



Task 1: Provide an overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects

In a draft report, the Contractor must perform the following tasks:

- The Contractor must evaluate and discuss the current status of LNG development in Canada and internationally, which must include an exhaustive inventory of existing projects (including project start date and years in operation) as well as projects under development and planned.
- The Contractor must conduct a review of public information sources in order to provide a **quantitative** overview of GHG emission sources and emission levels (absolute emissions and emissions intensities) during construction, operation, and decommissioning of LNG projects. The Contractor must provide the main variables driving GHG emission levels and a description of the existing GHG emission reduction technologies and practices used in Canada and internationally. This must also include the associated costs (capital and operating as a minimum).
- Where relevant or available, the Contractor must provide a breakdown of quantitative figures by equipment, project phase, facility size, capacity and/or fuel type/technology, as appropriate.
- After submission of the draft report and review by the Technical Authority, the Contractor must review the recommendations of the Technical Authority and provide an updated version with key comments addressed for review, feedback, and acceptance.
- The Contractor must use this work as a foundation for Task 2.

Deliverables related to Task 1:

- 1.1 Draft report chapter, in MS Word format: *Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects in Canada and internationally*
- 1.2 Revised draft report chapter, in MS Word format: *Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects in Canada and internationally*

Task 2: Evaluation of BAT/BEP in the current LNG sector

- Building on Task 1, the Contractor must provide the following:
 - A preliminary list for approval of the technologies and practices being included for consideration in Task 2 and Task 3. The BAT/BEP considered in Task 2 are focused on technologies and practices commercially deployed and available in the current LNG sector, while the BAT/BEP in Task 3 are focused on emerging technologies pursuing commercialization in the future to support further reduction of GHG emissions from LNG facilities.



- A **qualitative** description of the BAT/BEP for reducing direct GHG emissions from LNG projects in Canada and internationally, considering all the phases of project including construction, operation, and decommissioning.
- A **quantitative** assessment of the GHG emission intensity associated with the BAT/BEP and a **qualitative and/or quantitative** description of i) the associated costs (capital and operating as a minimum); ii) the technical considerations, if any; and iii) the environmental considerations, such as black carbon emissions, in the selection of a BAT/BEP. The Contractor must provide a preliminary outline for approval by ECCC of the information and analysis to be included with an overview of the approach to be used for the technical and economic assessment as well as how additional considerations, such as environmental impacts, must be included.
- The Contractor must also investigate the interactions of various BAT/BEP by highlighting the potential for combining BAT/BEP's along with the associated GHG reduction potential.
- Where relevant or available, the Contractor must provide a breakdown of quantitative figures by equipment, project phase, facility size, capacity and/or fuel type/technology, as appropriate.

BAT/BEP Case Studies

- The Contractor must also provide at least three real (3) case studies of the application of the BAT/BEP in representative LNG projects along with the resulting emission intensity, where available. Case studies must include a description of i) the associated costs (capital and operating as a minimum); ii) the technical considerations, if any; and iii) the environmental considerations, if any, in the selection of the BAT/BEP. Case studies must also include a description of the drivers and barriers to the implementation of the BAT/BEP in the context of the Canadian LNG sector. Case studies will be selected through discussion between the Contractor and the Technical Authority.
- After submission of the draft report and review by the Technical Authority, the Contractor must review the recommendations of the Technical Authority and provide an updated version with key comments addressed for review, feedback, and acceptance.

Deliverables related to Task 2:

2.1 Draft report chapters, in MS Word format:

- 2.1.1 Evaluation of *BAT/BEP in the current LNG sector in Canada and internationally*
- 2.1.2 *BAT/BEP case studies*

2.2 Revised draft report chapters, in MS Word format:

- 2.2.1 Evaluation of *BAT/BEP in the current LNG sector in Canada and internationally*
- 2.2.2 *BAT/BEP case studies*



Task 3: BAT/BEP for achieving net-zero emissions by 2050

Evaluation of Emerging Technologies

- Building on the BAT/BEP assessed in Task 2, the Contractor must provide a **qualitative** description of emerging technologies for reducing GHG emissions from LNG projects in Canada and internationally, and include alternative fuels to LNG. The Contractor must provide a **quantitative** assessment of the GHG emission intensity and GHG reduction potential associated with each emerging technology. The Contractor must provide a **qualitative and/or quantitative** description of i) the associated costs (capital and operating as a minimum); ii) the technical considerations, if any; and iii) the environmental considerations, such as black carbon emissions.
- The Contractor must discuss the drivers, any barriers or technology limitations and potential mechanisms to overcome such barriers for each emerging technology.
- The Contractor must present a commercialization timeline for each emerging technology including a description of the development stage as of 2020. This must include an assessment on their potential to be incorporated into the LNG sector, including how they could be phased in over time, as well as combined with other existing or emerging technologies. The assessment must highlight how the commercialization timeline could support LNG projects in achieving net-zero GHG emissions by 2050.

Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects

- The Contractor must develop two hypothetical scenarios of LNG projects by providing a plan demonstrating how they will achieve net-zero emissions by 2050 by incorporating BAT/BEP, emerging technologies, alternative fuels to LNG and other mitigation measures (such as avoided emissions and offset credits). The Contractor can also identify any supportive actions by the Government of Canada that would be needed in each scenario to be able to achieve net-zero emissions (refer to section 5.3 of the SACC). The proposed scenarios, including a summary of the methodology that will be used for the analysis, will be selected through discussion between the Contractor and the Technical Authority.
- Each scenario must include, at a minimum:
 - A description of the baseline project and project activities, as described in the Section on scope of this document.
 - A detailed qualitative and quantitative description of BAT/BEP, emerging technologies, alternative fuels and other mitigation measures (such as avoided emissions and offset credits). This should include, but not limited, GHG reduction potential and conversion efficiency of each technology.
 - A detailed analysis describing barriers (technology and economic limitations, etc.), market structure, market demand, future LNG and alternative fuels pricing and any other relevant aspect that could influence this scenario to achieve the net-zero emissions.
 - A discussion of possible supportive actions by the Government of Canada, if any, that could contribute to achieve net-zero emissions from this scenario.



- After submission of the draft report and review by the Technical Authority, the Contractor must review the recommendations of the Technical Authority and provide an updated version with key comments addressed for review, feedback, and acceptance.

Deliverables related to Task 3

- 3.1 Draft report chapters, in MS Word format:
 - 3.1.1 Evaluation of Emerging Technologies and Practices
 - 3.1.2 Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects
- 3.2 Revised draft report chapters, in MS Word format:
 - 3.2.1 Evaluation of Emerging Technologies and Practices
 - 3.2.2 Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects

Task 4: Reporting and presentation

- The Contractor must combine the draft chapters into a draft final report, with an executive summary, relevant Appendices, and a concluding chapter with recommendations for future work. After addressing comments from the Technical Authority, the Contractor must produce a final report and a summary MS PowerPoint deck for live presentation to Government of Canada staff.

Deliverables related to Task 4:

- 4.1 Draft report, in MS Word format.
- 4.2 Final report, in MS Word format.
- 4.3 Summary presentation, in MS PowerPoint format, that will be delivered to GoC staff.

Notes

- Completion of each task will be determined by the Technical Authority with the deliverables subject to the acceptance and/or approval of the Technical Authority.
- This list of task elements is not necessarily exhaustive. The Contractor is encouraged and expected to provide any additional information discovered during the course of this work where such additional information would be relevant to fulfilling the purpose and objectives of this contract.
- As it applies to the non-invoice matters of this contract, all monetary values must be expressed by the Contractor in Canadian dollars, with the source year readily visible. Instances of currency conversion must be identified by the Contractor and accompanied by the Contractor's explanation of the exchange rate used.
- ECCC reserves the right to have the collected data and the reports reviewed, in a confidential manner, by a third party expert and/or industry consultants. The Contractor must, where valid and reasonable, incorporate their recommendations, comments and views on all the deliverables.
- The Contractor is encouraged and expected to provide and present technical data in tables and graphs.



- The Contractor must cite all relevant sources of information.
- The Contractor must prepare drafts and a final report that must include, but not be limited to, the Tasks identified above. If a particular Task, or aspect thereof, cannot for any reason be fulfilled, then the Contractor must explain to the satisfaction of the Technical Authority why this is so.
- All reports (either in draft or final form) must be written in a clear and logical fashion and must be submitted in a Microsoft Office format for Windows, version 2007 or later.
- All supporting and underlying data (raw data) must be provided in Microsoft Excel format (version 2007 or later). Data must be properly organized, referenced and sourced. The credibility of reference material should be considered, with third party peer reviewed literature given greater reliance. If estimates and assumptions are used, they must be clearly identified and justified. Spreadsheet design and documentation should enable modification and replication of results by the Technical Authority.

6. Deliverables

The deliverables, reporting format and deadlines are outlined below in Table 1. In Bidders' proposal, they may adjust the proposed timelines for each deliverable within reason. The Contractor must allow at least two weeks for ECCC to review draft deliverables and should plan for a minimum of a week to address ECCC comments for each deliverable.

Table 1: Deliverables, Reporting Format, and Deadlines

DELIVERABLE	DEADLINES
Task 1: Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects	
1.1 Draft report chapter: Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects	February 26, 2021
1.2 Revised draft report chapter: Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects	March 19, 2021
Task 2: Evaluation of BAT/BEP in the current LNG sector	
2.1 Draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 2.1.1 - Evaluation of BAT/BEP in the current LNG sector • 2.1.2 - BAT/BEP case studies 	May 7, 2021
2.2 Revised draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 2.1.1 - Evaluation of BAT/BEP in the current LNG sector • 2.1.2 - BAT/BEP case studies 	June 4, 2021
Task 3: BAT/BEP, including emerging technologies, for achieving net-zero emissions by 2050	
3.1 Draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 3.1.1 - Evaluation of Emerging Technologies • 3.1.2 - Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects 	July 16, 2021
3.2 Revised draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 3.2.1 - Evaluation of Emerging Technologies • 3.2.2 - Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects 	August 13, 2021
Task 4: Report	



4.1 Complete draft report	September 3, 2021
4.2 Final report	October 1, 2021
4.3 Summary presentation and delivery of the presentation	October 1, 2021

All deliverables must be provided in the required electronic format and submitted to the Technical Authority. The Contractor must provide to the Technical Authority electronic copies of all background documents (including reports, papers, notes, text, graphics, surveys, raw data, and spreadsheets) used for the delivery of this Contract.

Reports and correspondence generated by the Contractor during the course of this project must be in English, be double-sided, using Microsoft Word, Microsoft Excel and Microsoft Power Point for Windows for presentations and other graphics.

Materials should be developed in a reader- and user-friendly format targeted toward an audience with a wide range of experience, education, and varying knowledge of the sector and its processes. It is recommended that an effective use of textual and visual (e.g., schematics) formats be incorporated within the report. Gaps in information and uncertainties (where they exist) must be identified throughout the report if significant.

6.1 Structure of final report deliverables

The report must be written in a clear and logical fashion, with an executive summary and, as required, appendices, to address the issues and questions introduced in the Statement of Work, as well as any other items raised during discussions between the Contractor and the Technical Authority. If a particular deliverable, or aspect thereof, cannot for any reason be fulfilled, an explanation, to the satisfaction of the Technical Authority, is required. The Contractor may, subject to the approval of the Technical Authority, change the suggested order of the final report from that implied by the Statement of Work.

Where appropriate and available, uncertainties must be identified, their sources explained and a range of high/low values or an appropriately justified data distribution must be provided. All the sources of information must be documented.

7. Acceptance criteria

All deliverables, and successful completion of the project, are subject to approval by the Technical Authority.

8. Communication

To assist with coordination of this project, the Contractor must communicate bi-weekly by email and/or by telephone with the Technical Authority with updates on the project. The Contractor must describe briefly the status of each deliverables and any deviation from the work plan or the timelines in the proposal. Any changes to the schedule must be justified and accompanied with a solution that takes into account remaining timelines.

9. Travel

No travel is required for this project.



10. Security

No level of security clearance is required.



ANNEX B
BASIS OF PAYMENT
(to be completed at contract award)

1. Financial Proposal

The Bidder must complete this pricing schedule and include it in its financial bid. Prices must only appear in the Financial Bid and in no other part of the bid.

1.1 Overview

The Bidder's financial proposal must be submitted in Canadian Funds, GST/HST excluded, FOB Destination, customs duties and excise tax included.

The total amount of Goods and Services Tax or Harmonized Sales Tax is to be shown separately, if applicable. The price of bids will be evaluated in Canadian dollars, Goods and Services Tax (GST) excluded FOB destination, Customs duties and Excise taxes included.

1.2 Definitions

Firm Lot Price:

This is a basis of payment that applies when the total amount payable to the contractor for all or, as applicable, a portion of the contractual obligations, is the firm price agreed upon by the contracting authority and the contractor. As part of the financial proposal, the Contractor must still provide a clear and detailed breakdown of all cost elements, professional fees, travel and direct expenses to support the quoted price.

The contractor must satisfactorily fulfill all of its contractual obligations relative to the work to which this basis of payment applies, without additional payment whether or not the actual cost incurred exceeds the firm lot price.

1.3 The Bidder must complete this pricing schedule and include it in its financial bid

The financial proposal must provide the total fixed price for completing the work as well as a detailed breakdown of that price. Details must be provided for each sub criteria. The financial proposal should address each of the following, as applicable in detail:

1.3.1 Table 1- Professional Services per diem Rates

The bidder is to enter the per diem rates that will be used throughout the performance of the Contract. The bidder must enter the names and rates for each of the key team members. For team members required to support the work, the Bidder is to identify each of the labour categories that will be employed and the per diem rate that will apply to the category.

Professional Services	Estimated Level of Effort (Days)	Firm per diem rate*	(Level of effort) x (per diem rate)
Resource Name			
Project Manager			
Team member 1			
Team member			
Support Categories			
Category 1 Name			
Category 2 Name			
		Total Estimated Price	

* **Per Diem rates** are firm and all-inclusive of overhead, profit and expenses such as travel and time to the NCR facilities.



Please note the following:

Definition of a Day/Proration: A day is defined as 7.5 hours exclusive of meal breaks. Payment will be for days actually worked with no provision for annual leave, statutory holidays and sick leave. Time worked ("Days_worked", in the formula below) which is less than a day will be prorated to reflect actual time worked in accordance with the following formula:

$$\text{Days Worked} = \frac{\text{hours worked}}{7.5 \text{ hour day}}$$

1.3.2 Table 2 – Other Direct Expenses

Other Expenses	Amount	Mark-up	Total
Direct Expenses: Materials, supplies, and other direct expenses incurred during the performance of the Work at actual cost with a Mark-up		_____ %	

1.3.3 Table 3 - Subcontracts

Subcontracts	Amount	Mark-up	Total
Subcontracts: at actual cost with markup. List any subcontracts proposed for any portion of the Contract describing the work to be performed and a cost breakdown with a Mark-up		_____ %	

1.3.4 Table 4 – Total

TOTAL (sum tables 1 to 3) Firm Lot Price	\$
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1.4. Payment Schedule

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ _____ (*insert amount at contract award*). Customs duties are included and Applicable Taxes are extra.

Canada will make milestone payments in accordance with the following Schedule of Milestones

Milestone	Due Date	% of Contract	Milestone Payment
Task 1: Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects			



1.1 Draft report chapter: Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects	February 26, 2021		
1.2 Revised draft report chapter: Overview of GHG emissions and GHG emission reduction technologies and practices used in LNG projects	March 19, 2021	10	\$
Task 2: Evaluation of BAT/BEP in the current LNG sector			
2.1 Draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 2.1.1 - Evaluation of BAT/BEP in the current LNG sector • 2.1.2 - BAT/BEP case studies 	May 7, 2021		
2.2 Revised draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 2.2.1 - Evaluation of BAT/BEP in the current LNG sector • 2.2.2 - BAT/BEP case studies 	June 4, 2021	35	\$
Task 3: BAT/BEP, including emerging technologies, for achieving net-zero emissions by 2050			
3.1 Draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 3.1.1 - Evaluation of Emerging Technologies • 3.1.2 - Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects 	July 16, 2021		
3.2 Revised draft report chapters, in MS Word format: <ul style="list-style-type: none"> • 3.2.1 - Evaluation of Emerging Technologies • 3.2.2 - Scenario Evaluation: Net-zero GHG Emissions by 2050 for LNG Projects 	August 13, 2021	45	\$
Task 4: Report			
4.1 Complete draft report	September 3, 2021		
4.2 Final report	October 1, 2021		
4.3 Summary presentation and delivery of the presentation	October 1, 2021	10	\$

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

1.5 Good and Services Tax (GST) / Harmonized Sales Tax (HST)

All prices and amounts of money in the Contract are exclusive of Goods and Services Tax (GST) or Harmonized Sales Tax (HST), as applicable, unless otherwise indicated. The GST or HST, whichever is applicable, is extra to the price and will be paid by Canada.



ANNEX C INSURANCE REQUIREMENTS

1. The Contractor must obtain Errors and Omissions Liability (a.k.a. Professional Liability) insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature but for not less than \$1,000,000 per loss and in the annual aggregate, inclusive of defence costs.
2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The following endorsement must be included:

Notice of Cancellation: The Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.