



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

Bid Receiving - PWGSC / Réception des
soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage, Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right
of Canada, in accordance with the terms and conditions
set out herein, referred to herein or attached hereto, the
goods, services, and construction listed herein and on any
attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la
Reine du chef du Canada, aux conditions énoncées ou
incluses par référence dans la présente et aux annexes
ci-jointes, les biens, services et construction énumérés
ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Due to the nature of the Request for Proposal,
transmission of bids by mail/courier to PWGSC BRU
will not be accepted.

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Fuel & Construction Products Division
L'Esplanade Laurier,
140 O'Connor Street,
East Tower, 4th floor,
Ottawa
Ontario
K1A 0S5

Title - Sujet ELECTRIC CIRCULATION HEATER	
Solicitation No. - N° de l'invitation 23240-210631/B	Date 2021-07-08
Client Reference No. - N° de référence du client 23240-210631	
GETS Reference No. - N° de référence de SEAG PW-\$\$HL-675-80179	
File No. - N° de dossier hl675.23240-210631	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 2021-07-23 Heure Avancée de l'Est HAE	
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Arboleda, Ian	Buyer Id - Id de l'acheteur hl675
Telephone No. - N° de téléphone (343) 543-4040 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: See herein.	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein – Voir ci-inclus	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
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

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Solicitation No. - N° de l'invitation
23240-210631/B
Client Ref. No. - N° de réf. du client
23240-210631

Amd. No. - N° de la modif.
File No. - N° du dossier
HL675.23240-210631

Buyer ID - Id de l'acheteur
HL675
CCC No./N° CCC - FMS No./N° VME

This bid solicitation cancels and supersedes previous bid solicitation number 23240-210631/A dated April 8, 2021 with a closing of May 25, 2021 at 14:00 EST. A debriefing has been provided to bidders who bid on the previous solicitation.

PART 1 – GENERAL INFORMATION

1.1 Requirement

The requirement is detailed under Article 6.2 of the resulting contract clauses.

1.2 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 from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.3 Canadian Content

The requirement is subject to a preference for Canadian goods.

1.4 epost Connect service

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

Given that many people are currently working from home and in an effort to reduce the spread of the coronavirus disease (COVID-19) within communities, offerors are highly encouraged to transmit their bid electronically using the epost Connect service. Information on the epost Connect service can be found in Part 2 entitled Offeror Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation.

PART 2 - BIDDER INSTRUCTIONS

2.1 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 [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/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.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 90 days

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated in the bid solicitation.

Note: For bidders choosing to submit using epost Connect for bids closing at the Bid Receiving Unit in the National Capital Region (NCR) the email address is:

tpsgc.dgareceptiondessoumissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

2.2.1 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least 20 calendar days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 5 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.

2.4 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.

2.5 Best Delivery Date

While delivery of the final product is requested by February 26, 2022, the best delivery that could be offered is _____.

2.6 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:
- Office of the Procurement Ombudsman (OPO)
 - Canadian International Trade Tribunal (CITT)
- (c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

Canada requests that the bid be gathered per section and separated as follows:

Section I: Technical Bid
Section II: Financial Bid
Section III: Certifications

Due to the nature of the Request for Proposal, transmission of bids by mail/courier to PWGSC BRU **will not be accepted.**

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

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment.

3.1.2 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Attachment 1 to Part 3 Electronic Payment Instruments, to identify which ones are accepted.

If Attachment 1 to Part 3 Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.3 Exchange Rate Fluctuation

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All bids including such provision will render the bid non-responsive.

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

Section IV: Additional Information

3.1.4 Insurance – Proof of Availability Prior to Contract Award

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex "C".

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 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.
- (c) The evaluation team will determine if there are two (2) or more bids with a valid Canadian content certification with the bids coming from two or more Bidders that are not affiliated within the meaning used in the *Competition Act*, R.S.C., 1985, c. C-34. In that event, only those bids with a valid certification will be eligible to be awarded a contract; otherwise, all bids will be eligible. If at any point in the evaluation process it is found, whether by determination of invalidity of certifications, determination that bids are non-responsive or withdrawal of bids by Bidders, that there are no longer two (2) or more responsive bids with a valid certification, then all responsive bids will be eligible to be awarded a contract. Canada may conduct the validation of Canadian content certifications at any time in the evaluation process including doing so concurrently with other steps.

4.1.1 Technical Evaluation

All bids must be completed in full and provide all of the information requested in the bid solicitation to enable full and complete evaluation.

4.1.1.1 Mandatory Technical Criteria

Responses to all mandatory technical criteria must be submitted with the bid no later than the closing date and time of the Request for Proposal.

- a) The Bidder must provide documentation demonstrating how they meet the technical requirements detailed in Attachment 1 to Part 4 – Mandatory Technical Criteria.

4.1.2 Financial Evaluation

4.1.2.1 Mandatory Financial Criteria

- a) The Bidder must bid a firm unit price(s) in Canadian funds, Applicable Taxes excluded, DDP Delivered Duty Paid to destination(s) Incoterms 2000, Customs Duties included for each item offered; and
- b) The Bidders' financial bid must be in accordance with the Basis of Payment.

4.2 Basis of Selection – Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default 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 will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.1.2 Additional Certifications Required with the Bid

5.1.2.1 Canadian Content Certification

This procurement is conditionally limited to Canadian goods.

Subject to the evaluation procedures contained in the bid solicitation, bidders acknowledge that only bids for items with a certification that the item(s) offered are Canadian goods, as defined in clause [A3050T](#), may be considered.

Failure to provide this certification completed with the bid will result in the item(s) offered being treated as non-Canadian goods.

The Bidder certifies that:

() the item(s) offered and identified as Canadian goods are Canadian goods as defined in paragraph 1 of clause [A3050T](#).

5.1.2.1.1 SACC Manual clause [A3050T](#) (2020-07-01) Canadian Content Definition

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information 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 provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](#) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

5.2.3 Canada Environmental, Socio-Economic and Accessibility Initiative Certification

The Bidder must select and complete one of the following five certification statements.

- 1) The Bidder certifies that the Bidder is registered or meets ISO 14001.

Bidders' Authorized Representative Signature

Date

OR

- 2) The Bidder certifies that it meets and will continue to meet throughout the duration of the contract, a minimum of four (4) out of eight (8) criteria identified in the table below.

The Bidder must indicate which four (4) criteria, as a minimum, are met.

Environmental criteria within the Bidders' organization	Insert a checkmark for each criterion that is met
Promotes a paperless environment through directives, procedures and/or programs	
All documents are printed double sided and in black and white for day to day business activity unless otherwise specified by your client	
Paper used for day to day business activity has a minimum of 30% recycled content and has a sustainable forestry management certification	
Utilizes environmentally preferable inks and purchase remanufactured ink cartridges or ink cartridges that can be returned to the manufacturer for reuse and recycling for day to day business activity.	
<p>Recycling programs or policies on, but not limited to, the following:</p> <ul style="list-style-type: none"> - Greenhouse Gas (GHG) Reduction - GHG inventory - eWaste - Waste audits - Energy efficiency - Green procurement - Fleet requirements (green vehicles, vehicle tracking, low resistance tires, tire recycling, emission reduction, etc.) - LED lighting - Recycling bins for paper, newsprint, plastic and aluminum containers available and emptied regularly in accordance with local recycling program - Motion-sensored lighting - Solar/wind programs 	
A minimum of 50% of office equipment has an energy efficient certification.	
<p>Other Environmental or Green Registration or Certification.</p> <p>The Bidder should provide a brief description of the program in place in their bid.</p>	
<p>Other environmental initiatives and programs in place</p> <p>The Bidder should provide a brief description of the program in place in their bid.</p>	

Bidders' Authorized Representative Name & Signature

Date

OR

- 3) The Bidder certifies that it manages and encourages targeted underrepresented suppliers, supplier ownership and groups (i.e., visible minorities, women, youth, and veterans of the Canadian Armed Forces) through the use of Human Resource (HR) policies, training or skills development policies or program, employment, scholarships, etc.

The Bidder should provide a brief description of the program in place in their bid.

Bidders' Authorized Representative Name & Signature

Date

OR

- 4) The Bidder certifies that it manages and encourages indigenous suppliers, supplier ownership and groups through the use of Human Resource (HR) policies, training or skills development policies or program, employment, scholarships, etc.

The Bidder should provide a brief description of the program in place in their bid.

Bidders' Authorized Representative Name & Signature

Date

OR

- 5) The Bidder certifies that it uses and will continue to use "Universal Design Principles" as listed below to promote accessibility throughout the duration of the contract.

- a. - Equitable Use
- b. - Flexibility in Use
- c. - Simple and Intuitive Use
- d. - Perceptible Information
- e. - Tolerance for Error
- f. - Low Physical Effort
- g. - Size and Space for Approach and Use

Bidders' Authorized Representative Name & Signature

Date

Note: The Bidder, may be required to further demonstrate its certification statement by submitting, upon request from the contracting authority, the following information:

- i) A detailed description of initiative(s) or program(s)
- ii) Proof of initiative(s) or program(s) (certificate, report, audit, action plan, policy, etc.).

PART 6 – RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

There is no security requirement applicable to the Contract.

6.2 Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex "A".

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual \(SACC\)](https://buyandsell.gc.ca/policy-and-guidelines/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.

6.3.1 General Conditions

[2030 \(2020-05-28\)](#), General Conditions - Goods (Higher Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract to March 31, 2022 inclusive.

6.4.2 Delivery Date

All the deliverables must be received on or before February 26, 2022.

6.4.3 Adherence to Delivery Schedule

The contractor will promptly give notice to the Contracting Authority of its inability to meet the contract delivery schedule and will request therein an extension of time stating its proposed revised delivery schedule and offering consideration for such revisions. Until such notice is received and the revised delivery schedule agreed to, the Minister may, pursuant to the General Conditions, on the business day following the due date of delivery of any outstanding materials, terminate the whole or part of the contract for default.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Ian Arboleda
Supply Team Lead

Solicitation No. - N° de l'invitation
23240-210631/B
Client Ref. No. - N° de réf. du client
23240-210631

Amd. No. - N° de la modif.
File No. - N° du dossier
HL675.23240-210631

Buyer ID - Id de l'acheteur
HL675
CCC No./N° CCC - FMS No./N° VME

Fuel and Construction Products Division – HL
Acquisitions Branch
Public Services and Procurement Canada
140 O'Connor Street, L'Esplanade Laurier Building, East Tower
Ottawa, ON
K1A 0R5

Telephone: 343-543-4040
E-mail address: Ian.Arboleda@tpsgc-pwgsc.gc.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.

6.5.2 Technical Authority (To be added at contract award)

The Technical Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ____-____-_____
Facsimile: ____-____-_____
E-mail address: _____

The Technical Authority 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.

6.5.3 Contractor's Representative (To be determined at contract award)

Name and telephone number of the person responsible for:

	General Enquiries	Delivery Follow-up
Name:	_____	_____
Telephone No.:	_____	_____
Facsimile No.:	_____	_____
E-mail address:	_____	_____

6.6 Payment

6.6.1 Basis of Payment - Firm Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price(s), DDP to destination, as specified in Annex "B" for a cost of \$ _____ CAD (insert the amount at contract award). Customs duties

are included and Applicable Taxes are excluded.

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.

6.6.2 Limitation of Price

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.

6.6.3 Method of Payment – Single Payment

6.6.3.1 Canada will pay the Contractor upon completion and delivery of the Work in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work delivered has been accepted by Canada.

6.6.4 Electronic Payment of Invoices – Contract (To be determined at Contract Award)

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);

6.7 Invoicing Instructions

6.7.1 The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

6.7.2 Invoices must be distributed as follows:

- a. One (1) copy must be forwarded, via email, to the following address for certification and payment: XX@canada.ca
- b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.
- c. One (1) copy must be forwarded to the Technical Authority.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.8.2 SACC Manual Clauses

The following terms and conditions are incorporated herein

SACC Reference	Section	Date
A3060C	Canadian Content Certification	2008-05-12

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (To be determined at contract award).

6.10 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) the General conditions: Goods (higher complexity) 2030 (2020-05-28)
- (c) Annex "A", Requirement;
- (d) Annex "B", Basis of Payment;
- (e) Annex "C", Insurance Requirements; and
- (f) the Contractor's bid dated _____ (*insert date of bid*), as clarified on _____ (*insert date*), or as amended on _____ (*insert date*).

6.11 Insurance – Specific Requirements

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.

6.12 SACC Manual Clauses

The following terms and conditions are incorporated herein:

SACC Reference	Title	Date
D2025C	Wood Packaging Materials	2017-08-17
D9002C	Incomplete Assemblies	2007-11-30

6.13 Dispute Resolution

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".

ANNEX "A" - REQUIREMENT

ELECTRIC CIRCULATION HEATER

1. Background

CanmetENERGY in Ottawa engages in research and development in the areas of energy efficiency, clean fossil fuels, and renewable and alternative energy sources. Our goal is to ensure that Canada is at the leading edge of clean energy technology development and greenhouse gas reduction.

With over 230 scientists, engineers, technologists, managers, and support staff, we develop and operate science and technology programs and services, aimed at a low carbon future, and provide scientific and technical expertise in areas such as, but not limited to, Communities and Infrastructure, Housing, Buildings, Bio Energy and Renewables.

Our scientific expertise, honed across a wide range of Canadian and international industry segments, along with our pilot-scale facilities, help to accelerate the advancement of clean energy technologies throughout the innovation cycle, from the initial research stage through to commercialization.

We foster a broad range of successful research partnerships with manufacturers, academia, planners, builders, and all levels of government, by working collaboratively to identify, test, and innovate products and processes beneficial to the lives of Canadians.

2. Requirement

- 2.1 The Contractor is to design, supply and deliver one (1) electric high pressure inline process heater for the CanmetENERGY G2 Supercritical CO₂ system based on the following specifications in this document. The design for the heater must meet the requirements detailed in the attached specification sheets. A complete heater package must include heating elements, pressure vessel, flanged process connections and control measures in order to be considered.
- 2.2 The Contractor must supply newly manufactured products as specified in the resulting contract clauses.

3. Terminology

Product	- refers to the Electric Circulation Heater and all its components.
TA	- refers to the Technical Authority, as named in the resulting contract clauses.
CA	- refers to the Contracting Authority, as named in the resulting contract clauses.
TSSA	- Technical Standards and Safety Authority
CSA	- Canadian Standards Association
CRN	- Canadian Registration Number

4. Product Specifications

The product to be supplied and delivered by the contractor must conform to or exceed the technical specifications described below and must meet or exceed all the requirements in the Electric Circulation Heater Specification Sheet, attached hereto as Attachment 1 to Annex A.

5. Requirement Details

5.1 Heater Configuration

- 5.1.0 **Note:** This is not an insertion heater. All components of this heater (heating elements, pipes, shell, etc.) should be one package, to be connecting to the process via 1 inch flanged inlet/outlet connections. The body of the heater should be approximately 12 inches in diameter.
- 5.1.1 The heater must be designed to heat the following process fluids: carbon dioxide in liquid, gas and supercritical form. Note: Normal operation will be in the supercritical phase, however during transient (start-up and shut-down) there will be gas and possibly liquid phase CO₂. While heat

rate for these phases is not important, the Contractor must ensure the heater can function with liquid and gas phase.

- 5.1.2 The heater must be able to achieve the required heating for case defined in the Attachment 1 to Annex A.
- 5.1.3 The diameter of the heater, number of heating elements and the watt density must be specified by the Bidder based on the operational cases identified in Attachment 1 to Annex A.
- 5.1.4 The heater must be insulated, and finished with aluminum cladding or equivalent..
- 5.1.5 Mineral wool or equivalent insulation must be used. Maximum use temperature of the insulation must be 600°C or higher.
- 5.1.6 The heater is to be designed for horizontal mounting.

5.2 Mechanical Requirements

- 5.2.1 The heater must be supplied with a pressure vessel equipped with a main body flange for the heater bundle.
- 5.2.2 The heater package (heater bundle installed in the pressure vessel, including flanges and insulation) must not exceed 12ft in length, and 4 ft in width and height.
- 5.2.3 The pressure vessel must be equipped with Graylok, Taper-Lok or other ANSI certified flange at inlet and outlet with a pipe size of 1" oriented upwards
- 5.2.4 The pressure vessel must have mounting saddles on the bottom, suitable for affixing the heater to a floor
- 5.2.5 The pressure vessel must be equipped with lifting lugs such that the heater can be moved using an overhead crane
- 5.2.6 The total weight of the complete heater package must not exceed 5 ton (6000 lbs).
- 5.2.7 The heater must be designed for indoor use with ambient temperatures ranging from 5 to 40°C
- 5.2.8 The Contractor is to identify in accompanying documentation in digital PDF form, the ramp-up and ramp-down procedure during system start-up and shut-down to and from ambient temperature.
- 5.2.9 Pressure vessel must conform to the Technical Standards and Safety Act (TSSA), 2000 and applicable regulations, codes, and standards.
- 5.2.10 Pressure vessel must have a Canadian Registration Number (CRN) in the province of Ontario.
- 5.2.11 Heater lifecycle: at least 5 years; at least 50 runs/year; at least 10 hours/run

5.3 Electrical Requirements

- 5.3.1 Power voltage must be 575 VAC, 3 phase, 60 Hz.
- 5.3.2 All supplied equipment and instruments supplied must carry a Class 1, Division 2, Group B,C,D hazardous area rating.
- 5.3.3 The heater must be equipped with two (2) type "K" thermocouples, affixed to the heating element

sheath for over temperature protection. Note: The Electric Circulation Heater will be located in an explosion proof environment.

- 5.3.4 A process thermocouple, type "K", must be equipped on the outlet nozzle of the pressure vessel.
- 5.3.5 All thermocouples must be pre-wired to junction box.
- 5.3.6 The control panel must be equipped with over-temperature protection.
- 5.3.7 All supplied electrical equipment must be CSA approved.
- 5.3.8 Supplier must furnish the heater with complete control package to provide electrical power and temperature control.
- 5.3.9 The controller must be capable of safely controlling the heater to reach the operating conditions during start-up and also bring the heater back to ambient temperature during shut-down.
- 5.3.10 Control system cabinet and instrumentation therein will be wall-mounted remotely in an unclassified area by the end user.
- 5.3.11 Control package must be housed in NEMA 12 minimum enclosure and must be furnished completely fabricated, wired and tested.
- 5.3.12 Control package must include incoming fused disconnect, SCR controller and all other components needed for a complete package, such as contactors, fuses, circuit breakers, control power transformers, terminal blocks, cooling fans, signal converters, etc.
- 5.3.13 Control package must accept an isolated 4-20mA_{dc} signal from Customer's DCS for control.
- 5.3.14 Controller must have over-temperature protection, current limiting and soft start.
- 5.3.15 Controller must provide the following outputs for Customer use
- 5.3.16 Current - Isolated 4-20mA_{dc} signal
- 5.3.17 Fault status – dry SPDT contact rated 0.5A@30VDC, 2A @ 120VAC
- 5.3.18 The heater must contain interlock connected with high sheath temperature on element able to de-energize the heater. Downstream temperature transmitter with signal to controller for linking with the heater output, and capability to implement an interlock to de-energize heater. Heater must include an integral temperature sensor for over-temperature protection, to be wired by Customer to control panel.

5.4 Technical Drawings

- 5.4.1 Technical drawings refer, but are not limited, to the following: General Arrangement, Fabrication and Electrical.
- 5.4.2 The Contractor must supply electrical drawings (one-line diagrams) P&ID drawings, General Arrangement drawings, as well as solid CAD model (step file format) of the heater package in a platform neutral CAD file format. Engineering drawings must be approved by the Technical Authority prior to the fabrication phase.

- 5.4.3 The Contractor must submit technical drawings for TA approval, as per section 7. Deliverables and Schedule below, prior to manufacturing, unless otherwise stated. This must be submitted with the estimated manufacturing time.
- 5.4.4 Allow three (3) working days for Technical Authority's review and comments on any draft and three (3) working days for Technical Authority's (TA) review and approval of final draft, unless otherwise instructed by the Technical Authority.
- 5.4.5 The Contractor must make changes in technical drawings as the TA may require, consistent with the requirements. When resubmitting, notify the TA in writing of revisions other than those requested.
- 5.4.6 The Contractor must provide quality assurance documentation of heater operation upon delivery of the unit to the client. The contractor must include detailed test descriptions and results in the documentation package. All testing and verifications to be performed on the finished heater unit prior to delivery to the client and at no additional cost to the client.

5.5 Manuals

Upon delivery of the product, the Contractor must submit, at no additional cost, all applicable manuals (1 hard copy and 1 electronic copy) for all the equipment and instrumentation, including but not limited to the following:

- Operation;
- Maintenance;
- Instructions for recommended repair; and
- Maintenance Procedures (if not included in the maintenance manual);
- Spare parts list and manufacturers data for accessories.

These documents must provide the necessary guidelines and information needed to allow safe operating, control, start-up, shutdown, and emergency shutdown of the heater package.

5.6 Other Deliverables

The Contractor must provide the following additional requirements, upon delivery of the product:

- Pressure vessel code calculations per American Society of Mechanical Engineers (ASME);
- Form U-1 Manufacturers Data Report for Pressure Vessels or equivalent;
- Warranty Plan; and
- Canadian Registration Number (CRN) from the Technical Standards and Safety Authority (TSSA).

6. Delivery

- 6.1 The Electric Circulation Heater and all its components must be delivered at a Canmet ENERGY facility in the National Capital Area. The delivery address will be provided by the Technical Authority at a later date.
- 6.2 At no time is space on the exterior of the building to be used for removals, or staging deliveries, unless approved in writing by the TA in advance of the delivery.

7. Deliverables and Schedule

The Contractor must deliver the Electric Circulation Heater and all its related components on or before February 26, 2022 (To be confirmed at Contract Award). Below table provides a schedule of the required deliverables.

Description of Deliverable	Date	Individual Responsible
Submission of draft Technical Drawings	Within 1 week of contract award (Date TBD)	Contractor
Review of draft Technical Drawings	Within 3 days (Date TBD)	Technical Authority
Request for Approval for Technical Drawings (in final draft)	Within 2 weeks of contract award (Date TBD)	Contractor
Approval of Drawings	Within 3 days (Date TBD)	Technical Authority
Manufacturing Lead Time	Date TBD	Contractor
Delivery of Electric Circulation Heater, related components, all applicable documentation and final technical drawings including incorporated changes.	(On or before February 26, 2022)	Contractor
Inspection and Acceptance	Within 2 weeks of delivery (Date TBD)	Technical Authority

7.1 In addition to the above, other deliverables may include the following:

1. Remedial Action Plan for deficiencies, if any; and
2. Repair Report, if applicable.
 - a) Remedial work must be completed within 30 days.
 - b) Repair reports must include at a minimum, description of the fault, cause of the fault, and actions to avoid this fault in the future.

8. Meetings

8.1 The Contractor may be required to meet with the TA and/or Contracting Authority and other stakeholders. The purpose of these meetings will be, but not limited to, the following:

- i) Discuss any issues or concerns that have been raised and establish timelines for resolution, including matters related to the request and approval of technical drawings;
- ii) Provide the TA with notice of any changes in specifications, design, or options; and
- iii) Discuss resulting call-up terms and conditions, including but not limited to delivery and scheduling.

9. Contractor Personnel

9.1 The Contractor will assign an Account Representative, who will be responsible for, but not limited to, the following: providing client service, managing delivery requirements, responding to requests by NRCan for repairs and replacement, address issues relating, but not limited, to warranty and deficiencies.

10. Business Environment

10.1 Hours of Service

10.2 Deliveries, meetings, repairs and replacements are to be conducted during Normal Business Hours.

10.3 Normal Business Hours is defined as 08:00 to 17:00 hours, Monday through Friday except Federal Government Statutory holidays.

11. Constraints

11.1 Client to be notified at least 1 week in advance of delivery date.

12. Language of Work and Deliverables

12.1 The Contractor's Account Representative must be able to communicate in English.

12.2 All deliverables, i.e. manuals, procedures, drawings, product demo and training documentation, must be provided in English.

13. File Format of soft Deliverables

13.1 As outlined in the Schedule, section 7, deliverables (i.e. Technical Drawings) must be presented for a review and Technical Authority acceptance for each of the following stages of their development unless otherwise directed by the Technical Authority:

- i. Draft
- ii. Final Draft

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.

13.2 All soft deliverables are to be provided in electronic format. Electronic format consists of Microsoft Office Suite products-Word, Excel, PowerPoint and Visio, and Adobe Acrobat.

14. Warranty

14.1 All components delivered or supplied must be warrantied as stated under the General Conditions – Higher Complexity - Goods 2030 (2020-05-28).

15. Contractor Qualifications

15.1 The Bidder or its Supplier must have a minimum of one (1) year of demonstrated experience in the design, supply and delivery of Electric Circulation Heaters and related components, or similar product(s).

Attachment 1 to Annex A- Electric Heater Specification Sheet

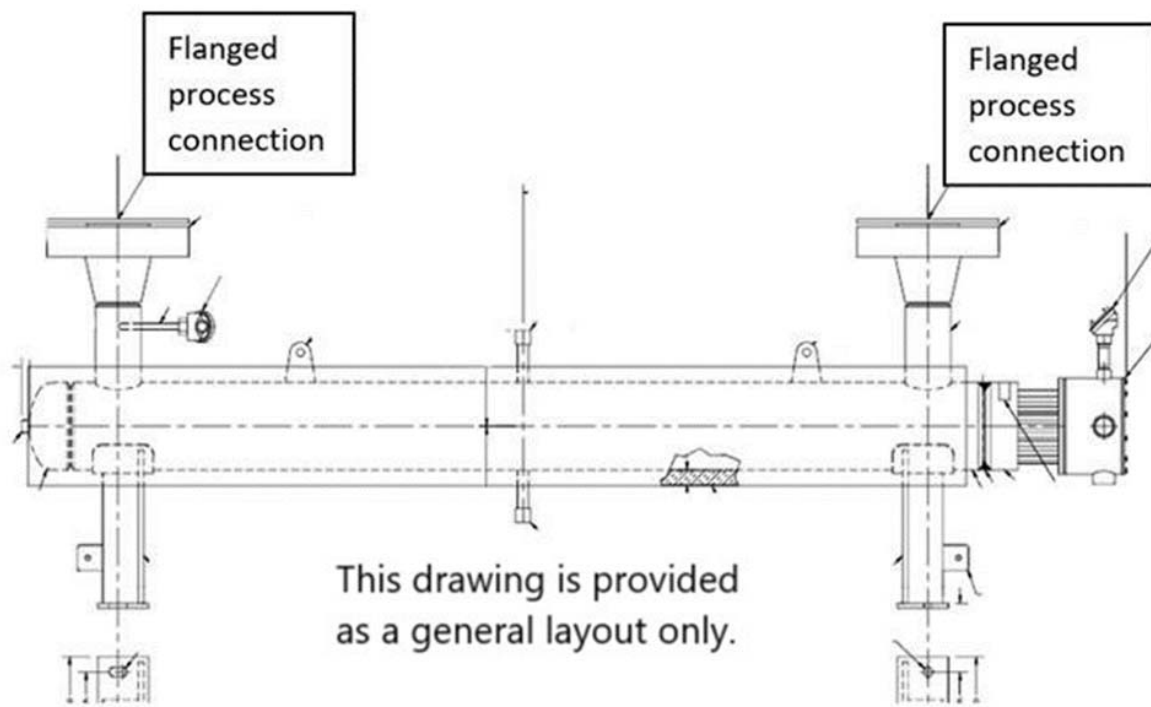
General Information			
Service:	Supercritical CO2 Heater	P&ID Tag:	H-201
Project:	G2 Supercritical CO2 Plant	Date:	2021-06-17
Location:	Bldg. 4, 1 Haanel Dr, Ottawa, ON		
Operating Conditions			
Fluid (Components & wt. %):	Supercritical Carbon Dioxide		
Total Flow:	kg/h	833	

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		IN	OUT
Supercritical:	kg/h	833	833
Liquid:	kg/h	See Note 6	
Vapour:	kg/h	See Note 6	
Non-Condensables:	kg/h	-	-
Fluid			
Vaporized/Condensed:	kg/h	-	-
Spec. Gravity - Liquid:		-	-
Viscosity - Liquid:	Pas	-	-
Molecular Weight	kg/mol	44.01	
Specific Heat:	J/kg K	See Note 2	
Latent Heat - Vapour:	J/kg	See Note 2	
Temperature:	°C	615	640
Operating Pressure:	bar(g)	150	
Velocity:	m/s	See Note 1	
Pressure Drop			
(allow/calc):	bar	1 (maximum)	
Heat Exchanged:	kW	~10 (see Note 5)	
Fouling Resistance:		See Note 2	
Effective Surface Area:			
m²		See Note 1	
Design Details			
Type of Electric Heater:		Circulation / immersion	
Details (configuration, etc.):		All types listed above will be considered provided they meet the technical specifications detailed in this document.	
Design Pressure:	bar(g)	165 bar(g) (or 2393.12 psi)	
Test Pressure:	bar(g)	See Note 1	
Design Temperature:	°C	649 °C (or 1200.2 °F)	
Corrosion Allowance:	mm	See Note 4	
Code Requirements:		ASME Section VIII, CSA and CRN for Ontario (see Note 7)	
Connections:		See Note 3	
Lifespan:		At least 5 years; at least 50 runs/year; at least 10 hours/run	
Notes:			
1) To be specified by vendor.			
2) Any missing property information is assumed to be part of the design of the heat exchanger.			
3) Grayloc, Taper-Lok or other equivalent ANSI flanges are acceptable.			
4) Vendor to specify corrosion allowance.			
5) Excess design capacity of heater to be 30%.			
6) Liquid and/or vapour CO2 will be present during start-up and/or shut-down			
7) CSA and CRN Ontario certification to be provided.			
8) Preference is for stainless steel construction where possible; however other materials will be considered.			



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ANNEX "B" - PRICING SCHEDULE (BASIS OF PAYMENT)

The Bidder must complete below table and submit pricing in Canadian dollars, DDP Delivery Duty Paid to destination Incoterms 2000 excluding Applicable Taxes but including all other costs such as, but not limited to, fees of all sorts, customs duties and excise tax.

Requirement	All-inclusive Firm Price (A)	Quantity (B)	Sub-Total (A x B = C)
Supply and Delivery of Electric Circulation Heater as specified in Annex "A" Requirement	\$ (To be completed by Bidder)	1	\$ (To be completed by Bidder)
Canada Customs Duties, if applicable			\$ (To be completed by Bidder)
Excise Taxes, if applicable			\$ (To be completed by Bidder)
Bidder's Evaluated Price			\$ (To be completed by Bidder)

Travel and Living Expenses

There is no provision within the resulting contract for travel and living expenses.

ANNEX "C" - INSURANCE REQUIREMENTS

Commercial General Liability Insurance

1. The Contractor must obtain Commercial General 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 \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
 - d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - g. Employees and, if applicable, Volunteers must be included as Additional Insured.
 - h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
 - i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
 - j. 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.
 - k. 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.
 - l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
 - m. Litigation Rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#), S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

*Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8*

For other provinces and territories, send to:

*Senior General Counsel,
Civil Litigation Section,
Department of Justice*

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*234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8*

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

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ATTACHMENT 1 TO PART 3 OF THE BID SOLICITATION
– ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ☐ () VISA Acquisition Card;
- ☐ () MasterCard Acquisition Card;
- ☐ () Direct Deposit (Domestic and International);
- ☐ () Electronic Data Interchange (EDI);
- ☐ () Wire Transfer (International Only);

ATTACHMENT 1 TO PART 4 OF THE BID SOLICITATION – MANDATORY TECHNICAL CRITERIA

Bidders should cross reference the mandatory technical criteria in a concise format by using page, paragraph(s) and sub-paragraphs as applicable to their supporting technical documentation. Bids that do not meet all the mandatory technical criteria will be considered non-responsive and given no further consideration.

Criteria/Sub-Criteria Nos.	Mandatory Criteria Description	Compliance (Met/Not Met)	Bidder's Substantiation
MTC 1	The Bidder's proposed Electric Circulation Heater must demonstrate the following configuration:		
MTC 1-a	Must be able to achieve the required heating of Carbon Dioxide for the condition described in Attachment 1 to Annex A- Electric Heater Specification Sheet.		
MTC 1-b	Must be insulated, and finished with aluminum cladding or equivalent.		
MTC 2	The Bidder's proposed Electric Circulation Heater must demonstrate the following mechanical requirements:		
MTC 2-a	Must be supplied with a pressure vessel equipped with a main body flange for the heater bundle.		
MTC 2-b	The pressure vessel must be equipped with Graylok, Taper-Lok or other ANSI certified flange at inlet and outlet with a pipe size of 1 inch oriented upwards.		
MTC 2-c	The pressure vessel must be equipped with lifting lugs such that the heater can be moved using an overhead crane		
MTC 2-d	The design temperature of the pressure vessel must be at least 649°C.		
MTC 2-e	The design pressure of the pressure vessel must be at least 165 bar(g).		
MTC 2-f	Pressure vessel must have a Canadian Registration Number (CRN) in the province of Ontario.		
MTC 2-g	The heater package (heater bundle installed in the pressure vessel, including flanges and insulation) must not exceed 12 feet in length, and 4 feet in width and height.		
MTC 2-h	The pressure vessel must have mounting saddles on the bottom, suitable for affixing the heater to a floor.		
MTC 2-i	The total weight of the complete heater package shall not exceed 5 ton (6000 lbs).		
MTC 2-j	Pressure drop through the heater at the operating condition detailed in Attachment 1 to Annex A- Electric Heater Specification Sheet must not exceed 1 bar.		

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MTC 3	The Bidder's proposed Electric Circulation Heater must demonstrate the following electrical requirements:		
MTC 3-a	Power voltage must be 575 VAC, 3 phase, 60 Hz.		
MTC 3-b	All supplied equipment and instruments supplied must carry a Class 1, Division 2, Group B,C,D hazardous area rating.		
MTC 3-c	Must be equipped with two (2) type "K" thermocouples, affixed to the heating element sheath for over temperature protection.		
MTC 3-d	A process thermocouple, type "K", must be equipped on the outlet nozzle of the pressure vessel.		
MTC 4	The Bidder must provide General Arrangement (GA) drawings that demonstrate as accurately as possible, at this stage, the following minimum information: size, shape, flange location and orientation, lifting lugs and mounting saddles of the Electric Circulation Heater. The weight of the unit must also be identified either on the GA drawings or elsewhere within the submission.		