



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving Public Works and Government
Services Canada/Réception des
soumissions/Travaux publics et Services
gouvernementaux Canada
See herein for bid submission
instructions/
Voir la présente pour les
instructions sur la présentation
d'une soumission
NA
Ontario

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

Title - Sujet Environmental Chamber	
Solicitation No. - N° de l'invitation 23240-220480/A	Date 2022-01-13
Client Reference No. - N° de référence du client 23240-22-0480	
GETS Reference No. - N° de référence de SEAG PW-\$TOR-006-8166	
File No. - N° de dossier TOR-1-44115 (006)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Standard Time EST on - le 2022-02-09 Heure Normale du l'Est HNE	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Liao, Guo	Buyer Id - Id de l'acheteur tor006
Telephone No. - N° de téléphone (416) 697-9289 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Natural Resources Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

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

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
Ontario Region
10th Floor, 4900 Yonge Street
Toronto
Ontario
M2N 6A6

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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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 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.

1.4 COVID-19 vaccination requirement

This requirement is subject to the COVID-19 Vaccination Policy for Supplier Personnel. Failure to complete and provide the COVID-19 Vaccination Requirement Certification as part of the bid will render the bid non-responsive.

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

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2.2 Submission of Bids

Bids must be submitted only to the Public Works and Government Services Canada (PWGSC) Bid Receiving Unit specified below by the date and time indicated on page 1 of the bid solicitation:

PWGSC Ontario Region Bid Receiving Unit

Only bids submitted using epost Connect service will be accepted. The Bidder must send an email requesting to open an epost Connect conversation to the following address:

TPSGC.orrceptiondessomissions-orbidreceiving.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.

It is the Bidder's responsibility to ensure the request for opening an epost Connect conversation is sent to the email address above at least six days before the solicitation closing date.

Bids transmitted by facsimile or hardcopy to PWGSC will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 7 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, Canada.

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 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

The Bidder must submit its bid electronically 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.

The bid must be gathered per section and separated as follows:

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

Bids transmitted by facsimile or hardcopy will not be accepted.

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

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](#) (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, bidders should:

- 1) Include all environmental certification(s) relevant to your organization (e.g. ISO 14001, Leadership in Energy and Environmental Design (LEED), Carbon Disclosure Project, etc.
- 2) Include all environmental certification(s) or Environmental Product Declaration(s) (EPD) specific to your product/service (e.g. Forest Stewardship Council (FSC), ENERGYSTAR, etc.)

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.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex "C" Electronic Payment Instruments, to identify which ones are accepted.

If Annex "C" 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.

3.1.2 Exchange Rate Fluctuation

[C3011T](#) (2013-11-06), Exchange Rate Fluctuation

3.1.3 SACC Manual Clauses

Section III: Certifications

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

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.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

See Annex "D" – Evaluation Criteria

4.1.2 Financial Evaluation

- (a) The Bidders must submit pricing in accordance with Annex B, Basis of Payment, with their bid at bid closing.
- (b) Extended Price for each item will be Quantity multiplied by Firm Unit Price.
- (c) Total Extended Price for tables 1, 2, 3, and 4 will be the sum of Extended Price for item 1, item 2, and item 3 of each table.
- (d) Total Evaluated Price will be the sum of Total Extended Price for Table 1, Table 2, Table 3, and Table 4 of Annex B, Basis of Payment.
- (e) *SACC Manual* Clause [A0220T](#) (2014-06-26), Evaluation of Price

4.2 Basis of Selection - Mandatory Technical Criteria

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A bid must comply with all requirements of the bid solicitation and meet all mandatory evaluation criteria to be declared responsive. The responsive bid with the lowest Total 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 COVID-19 Vaccination Requirement Certification

In accordance with the COVID-19 Vaccination Policy for Supplier Personnel, all Bidders must provide with their bid, the COVID-19 Vaccination Requirement Certification attached to this bid solicitation, to be given further consideration in this procurement process. This Certification incorporated into the bid solicitation on its closing date is incorporated into, and forms a binding part of any resulting Contract.

COVID-19 Vaccination Requirement Certification

I, _____ (*first and last name*), as the representative of
_____ (*name of business*) pursuant to
_____ (*insert solicitation number*), warrant and certify that all
personnel that _____ (*name of business*) will provide on the
resulting Contract who access federal government workplaces where they may come into contact with
public servants will be:

- (a) fully vaccinated against COVID-19; or

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(b) for personnel that are unable to be vaccinated due to a certified medical contraindication, religion or other prohibited grounds of discrimination under the *Canadian Human Rights Act*, subject to accommodation and mitigation measures that have been presented to and approved by Canada; or

(c) partially vaccinated against COVID-19 for a period of up to 10 weeks from the date of their first dose and subject to temporary measures that have been presented to and approved by Canada, immediately after which period the personnel will meet the conditions of (a) or (b) or will no longer access federal government workplaces where they may come into contact with public servants under this Contract;

until such time that Canada indicates that the vaccination requirements of the COVID-19 Vaccination Policy for Supplier Personnel are no longer in effect.

I certify that all personnel provided by _____ (*name of business*) have been notified of the vaccination requirements of the Government of Canada's COVID-19 Vaccination Policy for Supplier Personnel, and that the _____ (*name of business*) has certified to their compliance with this requirement.

I certify that the information provided is true as of the date indicated below and will continue to be true for the duration of the Contract. I understand that the certifications provided to Canada are subject to verification at all times. I also understand that Canada will declare a contractor in default, if a certification is found to be untrue, whether made knowingly or unknowingly, during the bid or contract period. Canada reserves the right to ask for additional information to verify the certifications. Failure to comply with any request or requirement imposed by Canada will constitute a default under the Contract.

Signature: _____

Date: _____

Optional

For data purposes only, initial below if your business already has its own mandatory vaccination policy or requirements for employees in place. Initialing below is not a substitute for completing the mandatory certification above.

Initials: _____

Information you provide on this Certification Form and in accordance with the Government of Canada's COVID-19 Vaccination Policy for Supplier Personnel will be protected, used, stored and disclosed in accordance with the Privacy Act. Please note that you have a right to access and correct any information on your file, and you have a right to file a complaint with the Office of the Privacy Commissioner regarding the handling of your personal information. These rights also apply to all individuals who are deemed to be personnel for the purpose of the Contract and who require access to federal government workplaces where they may come into contact with public servants.

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) (<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](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#s4) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#s4>).

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.

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

6.1.1 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](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

[2010A](#) (2021-12-02), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

Subsection 32 of 2010A, General Conditions – Goods (Medium Complexity), is added as follows:

2010A 32 (2021-11-04) Anti-forced labour requirements

1. The Contractor represents and warrants that the Work is not mined, manufactured or produced wholly or in part by forced labour. Regardless of who acts as an importer, the Contractor must not during the performance of the Contract, directly or indirectly, deliver Work to Canada or import Work into Canada the importation of which is prohibited pursuant to ss. 136(1) of the *Customs Tariff Act* and tariff item No. 9897.00.00 of the *Customs Tariff – Schedule* (as amended from time to time), because it is mined, manufactured or produced wholly or in part by forced labour.
2. If a tariff classification determination is made under the *Customs Act* that the importation of the Work, or any part of the Work, is prohibited, the Contractor must immediately inform the Contracting Authority in writing. Canada may terminate the Contract for default in accordance with section 2010A 23 - Default by the Contractor if the Work or any part of the Work is classified under tariff item no. 9897.00.00 of the *Customs Tariff – Schedule* as mined, manufactured or produced wholly or in part by forced labour. If the Contractor is aware that the Work, or any part of the Work, is being or has been investigated regarding whether it is prohibited from entry pursuant to tariff item No. 9897.00.00, the Contractor must immediately inform the Contracting Authority in writing of that investigation.
3. Canada may terminate the Contract for default in accordance with section 2010A 23 - Default by the Contractor if it has reasonable grounds to believe the Work was mined, manufactured or produced in whole or in part by forced labour or linked to human trafficking. Reasonable grounds for making such a determination may include:
 - a. Findings or Withhold Release Orders issued by the United States Customs and Border Protection, under the US *Trade Facilitation and Trade Enforcement Act* (TFTEA) of 2015; or
 - b. Credible evidence from a reliable source, including but not limited to non-governmental organizations.
4. Canada may terminate the Contract for default in accordance with section 2010A 23 - Default by the Contractor if the Contractor has, in the past three years, been convicted of any of the following offences under the *Criminal Code* or the *Immigration and Refugee Protection Act*:
 - Criminal Code*
 - i. section 279.01 (Trafficking in persons);
 - ii. section 279.011 (Trafficking of a person under the age of eighteen years);
 - iii. subsection 279.02(1) (Material benefit - trafficking);
 - iv. subsection 279.02(2) (Material benefit - trafficking of person under 18 years);
 - v. subsection 279.03(1) (Withholding or destroying documents - trafficking);
 - vi. subsection 279.03(2) (Withholding or destroying documents - trafficking of person under 18 years); or
 - Immigration and Refugee Protection Act*
 - vii. section 118 (Trafficking in persons).
5. Canada may terminate the Contract for default in accordance with section 2010A 23 - Default by the Contractor if the Contractor has, in the past three years, been convicted of an offence in a jurisdiction other than Canada that, in Canada's opinion, is similar to any of the offences identified in paragraphs 4(i) to (vii).

6. For purposes of determining whether a foreign offence is similar to a listed offence, PWGSC will take into account the following factors:
 - i. in the case of a conviction, whether the court acted within its jurisdiction;
 - ii. whether the supplier was afforded the right to appear during the court's proceedings or to submit to the court's jurisdiction;
 - iii. whether the court's decision was obtained by fraud; or
 - iv. whether the supplier was entitled to present to the court every defence that the supplier would have been entitled to present had the proceeding been tried in Canada.

7. Where Canada intends to terminate the Contract under this section, Canada will inform the Contractor and provide the Contractor an opportunity to make written representations before making a final decision. Written representations must be submitted within 30 days from receiving a notice of concern unless Canada establishes a different deadline.

6.3.2 Supplemental General Conditions

[4001](#) (2015-04-01) Hardware Purchase, Lease and Maintenance;
[4003](#) (2010-08-16) Licensed Software;
[4004](#) (2013-04-25) Maintenance and Support Services for Licensed Software;

6.3.3 Compliance with on-site measures, standing orders, policies, and rules

The Contractor must comply and ensure that its employees and subcontractors comply with all security measures, standing orders, policies or other rules in force at the site where the Work is performed.

6.3.4 Suspension of the Work

1. The Contracting Authority may at any time, by written notice, order the Contractor to suspend or stop the Work or part of the Work under the Contract for a period of up to 180 days. The Contractor must immediately comply with any such order in a way that minimizes the cost of doing so. While such an order is in effect, the Contractor must not remove any part of the Work from any premises without first obtaining the written consent of the Contracting Authority. Within these 180 days, the Contracting Authority must either cancel the order or terminate the Contract, in whole or in part, under section(s) 23 Default by the Contractor or 24 Termination for convenience of general conditions 2010A.
2. When an order is made under subsection 1, unless the Contracting Authority terminates the Contract by reason of default by the Contractor or the Contractor abandons the Contract, the Contractor will be entitled to be paid its additional costs incurred as a result of the suspension plus a fair and reasonable profit.
3. When an order made under subsection 1 is cancelled, the Contractor must resume work in accordance with the Contract as soon as practicable. If the suspension has affected the Contractor's ability to meet any delivery date under the Contract, the date for performing the part of the Work affected by the suspension will be extended for a period equal to the period of suspension plus a period, if any, that in the opinion of the Contracting Authority, following consultation with the Contractor, is necessary for the Contractor to resume the Work. Any equitable adjustments will be made as necessary to any affected conditions of the Contract.

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6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract to 31 March 2023.

6.4.2 Delivery Date

All the deliverables must be received on or before March 31, 2022.

6.4.3 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to 2 additional 1 year period(s) under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least 15 calendar days before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

6.4.4 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex B – Basis of Payment of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

6.4.5 Delivery Points

The Contractor must deliver the environmental chambers to the ground level storage area door at:

NATURAL RESOURCES CANADA
1219 QUEEN ST EAST
DOOR #12, H116 GROUND FLOOR HEADER HOUSE
SAULT STE MARIE
ONTARIO, P6A 2E5

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

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Name: Guo Liao
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Address: 10th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6

Telephone: 416 697 9289
E-mail address: guo.liao@pwgsc-tpsgc.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 Project Authority

The Project Authority for the Contract is:
(*Inserted at Contract Award*)

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

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

The Project 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 Project Authority, however the Project 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 provided with bid*)

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

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

6.6 Payment

6.6.1 Basis of Payment - Firm Price, Firm Unit Price(s) or Firm Lot Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in Annex "B" for a cost of \$ __(*Inserted at Contract Award*)_____. 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.

6.6.2 Limitation of Price

SACC Manual clause [C6000C](#) (2017-08-17) Limitation of Price

6.6.3 Single Payment

SACC Manual clause [H1000C](#) (2008-05-12) Single Payment

6.6.4 Advance Payment

SACC Manual clause [H3028C](#) (2010-01-11) Advance Payment

6.6.5 Electronic Payment of Invoices – Contract

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

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.

Each invoice must be supported by:

- a. a copy of the release document and any other documents as specified in the Contract;
2. Invoices must be distributed as follows:
 - a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
 - b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

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.

6.9 Applicable Laws

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

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 supplemental general conditions [4001](#) (2015-04-01) Hardware Purchase, Lease and Maintenance;
- (c) the supplemental general conditions [4003](#) (2010-08-16) Licensed Software;
- (d) the supplemental general conditions [4004](#) (2013-04-25) Maintenance and Support Services for Licensed Software;
- (e) the general conditions [2010A](#) (2021-12-02), General Conditions - Goods (Medium Complexity);
- (f) Annex A, Requirement;
- (g) Annex B, Basis of Payment;
- (h) the Contractor's bid dated _____

6.11 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](#)".

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6.12 Insurance - No Specific Requirement

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

ANNEX "A"
REQUIREMENT

1. Requirement

1.1 Firm Requirement

Natural Resources Canada (NR Canada) Great Lakes Forestry Centre (GLFC), Sault Ste. Marie, ON has a requirement for the supply and delivery of two (2) reach-in environmental chambers, one for Type A - Air Cooled Condensing Unit and one for Type B – Water Cooled Condensing Unit. The environmental chambers will be used for insect and plant rearing to support important program research initiatives at GLFC that focus on issues like forest pest management, climate change, forest fire studies and forest ecosystem management.

1.2 Optional Requirement

The requirement also includes the options to purchase up to 12 additional environmental chambers (6 Type A chambers and 6 Type B chambers) in the future 3 fiscal years.

2. Minimum Mandatory Technical Specification

The requirement must meet the following minimum mandatory technical specifications:

ITEM	CRITERIA
1. CABINET SIZE – <i>These are to accommodate space constraints</i>	
1.1	Minimum interior (growing) volume: 29 cubic feet;
1.2	Minimum growing height between each equally-spaced shelf and the lights above: 8.5 inches;
1.3	Maximum Outer Dimensions ;
1.3.1	Height: 79 inches
1.3.2	Width: 60 inches
1.3.3	Depth: 35 inches
2. CABINET CONSTRUCTION	
Cabinet construction must include the following:	
2.1	Chamber completely self-contained;
2.2	Exterior: 18-gauge (minimum thickness) exterior electro-zinc plated steel, stainless steel, aluminum or approved alternative material;
2.3	Interior: 22-gauge (minimum thickness) electro-zinc plated steel, stainless steel, aluminum or approved alternative material;
2.4	Welded seams and joints on outer and inner shells;
2.5	Inner shell supported by non-compressing, minimum R-12 insulation, locking inner liner in place without a metal-to-metal bond to outer case;
2.6	Wall thickness: 2" (minimum);
2.7	Minimum of one access port: 1½" diameter;
2.8	Interior Floor: 22-gauge (minimum thickness) stainless steel equipped with floor drain and hose assembly;
2.9	Shelving: a total of 4 shelves (white epoxy-coated or stainless steel) per chamber, adjustable in vertical position in ½ inch increments and capable of holding a static weight of a minimum of 120 lbs;

ITEM	CRITERIA
2.10	Caster Assembly and adjustable leveling legs required;
2.11	Door: must block light from entering the chamber, be insulated, be lockable and be larger than the front opening of the chamber;
2.12	Observation Window in Door: 12" x 12" (minimum) thermal pane window with light-tight, hinged door cover;
2.13	Interior Finish: Highly reflective, high temperature baked white powder coating or approved alternative;
2.14	Exterior Finish: High temperature baked powder coating or approved alternative. Colour to be from manufacturer's standard palette.
3. TEMPERATURE	
3.1	RANGE: both of the temperature range requirements below must be met:
3.1.1	Maintain -10°C to 44°C with all lights OFF. Temperature uniformity must be $\pm 0.5^\circ\text{C}$ throughout the chamber on a horizontal plane;
3.1.2	Maintain +10°C to 44°C with all lights ON. A lower low-end to this range is preferred. Temperature uniformity must be $\pm 0.5^\circ\text{C}$ throughout the chamber on a horizontal plane;
4. HUMIDITY	
4.1	Must include both a humidifier and a dedicated, controlled dehumidification mode of operation;
4.2	Additive humidity must be provided by an ultrasonic humidifier. Additive humidity control higher than ambient to 75% ($\pm 10\%$), lights on, for any set temperature between 15°C to 30°C;
4.3	Dehumidification must be provided by an in-chamber, functionally independent dehumidifying coil with a reheat heater to maintain interior temperature. Humidity removal control lower than ambient to 40% ($\pm 10\%$), lights on, for any set temperature between 15°C to 30°C;
4.4	The controller must use an electronic relative humidity sensor to maintain RH. The sensor must have an operating range of between 10 and 95 percent and an accuracy $\pm 10\%$.
5. REFRIGERATION	
5.1	Environmental Chamber(s) must be available in two configurations, to be specified at time of order:
5.1.1	Type A: Main cooling and heating must be provided by an integral mechanical compressor and air cooled condensing unit with hot gas bypass and automatic reset hi and low pressure switch protection devices. A chamber that provides interior space heating by activation of only an electric heater is not acceptable, hot gas bypass must be present;
5.1.2	Type B: Main cooling and heating must be provided by an integral mechanical compressor and water cooled condensing unit with hot gas bypass and automatic reset hi and low pressure switch protection devices. A chamber that provides interior space heating by activation of only an electric heater is not acceptable, hot gas bypass must be present;

ITEM	CRITERIA
5.2	Solenoid valves if utilized in the refrigeration system must be of the extended stem, rapid and frequent cycling type for long lifeoperation;
5.3	Must include electric or hot gas or approved alternative system for defrosting evaporator coil(s).
5.4	Must include phenolic coating on coil(s);
5.5	Pressure switches must be marked in units of psi;
5.6	Working refrigerant must be a common hydrofluorocarbon (HFC) (example R513A) with negligible ozone depletion potential(ODP).
6. LIGHTING	
6.1	Light Intensity: maximum of at least 210 micromoles/m ² /s at 25°C. Lights must be dimmable in units of micromoles/m ² /s down to 15% or less of the maximum. Dimming must be under the control of the chamber's internal control system;
6.2	Lamp Type: Must include dimmable fluorescent tubes that include UV-A in the light spectrum: Sylvania Octron 950 bulbsor approved equivalent;
6.3	Light Canopy: must include a total of 4 light banks each of which contains a minimum of 6 dimmable fluorescent tubes (minimum of 24 bulbs into total). The maximum number of bulbs per bank is 10, i.e., 40 in total. One bank must be fixed atthe ceiling; 3 banks must be adjustable in height position in ½" increments within the chamber and removable from the chamber by unplugging them from electrical sockets located in the rear wall;
6.4	Ballasts: Must be high-efficiency, dimmable electronic ballasts controlled by the central controller. Ballasts must be thermaland water protected, and easily accessible;
6.5	Light Sensor: Must be minimally a PAR (photosynthetically active radiation; 400-700nm range) sensor with the ability (along with the controller) to dim lamps to specified intensities.A sensor that does the above and detects UV-A (down to 315 nm) is preferred.
7. AIR FLOW	
7.1	Unit interior must provide uniform horizontal air flow movingforward from perforated rear panel of growing area.
8. AIR FILTRATION	
8.1	A HEPA filter must be installed within the air exhaust. Easy access must be provided for filter replacement.
9. CONTROL SYSTEM	
9.1	The onboard controller software must be able to configure andmodify light, temperature and relative humidity for constant, diurnal and 24-hour day multi-step (minimum 500 steps) programs (the latter in both ramping and non-ramping modes);

ITEM	CRITERIA
9.2	Programming must be set to a standard 24-hour clock. A program must not be controlled simply by elapsed time (i.e., after 2 hours or 4 hours or 8 hours has passed an event occurs). Each line of a program must be set and triggered by referring to a time on a 24 hour clock. The clock and the program timing & information must not be altered by a power outage;
9.3	Connectivity: Unit controller must come factory equipped for Local Area Network (LAN) and Bluetooth connectivity, to allow programming and monitoring of the chambers from office computers ;
9.4	Communication: Programming and alarms must be able to be checked & modified and status of the chamber checked via:
9.4.1	an interactive local user interface (e.g., an industrial keypad and display or a touch screen) factory mounted on the unit; and
9.4.2	by a remote, non-proprietary personal computer (PC) or laptop via a LAN connection. Specifically, the chamber must have an on-board web server optimized to interface with publicly available, major web browsers, to allow notifications to be sent to smart phones in the event of a malfunction when the users are away from the lab. In addition, security logins and passwords as well as email addresses for alarm notification must also be configurable by the remote, non-proprietary personal computer (PC) or laptop via the factory equipped LAN connection;
9.5	The controller software must allow the programming of simulated 24-hour day weather cycles with variable light, temperature and humidity. The onboard controller software must be capable of receiving METAR data (Meteorological Terminal Aviation Routine Weather Report) collected from weather stations via the LAN connection and, in near real-time, simulate the field conditions (i.e., light, temperature and humidity).
10. DATA LOGGING	
10.1	The chamber must be equipped with the ability to record light, temperature and humidity values at a frequency of up to once per minute or faster. The data must be stored on a memory device with a capacity of 4 Gigabytes or greater. The data must be downloadable from this device via an easily accessible USB connection;
11. BATTERY BACKUP	
11.1	Both the clock and volatile memory (e.g., the controller time and running program information) must be backed up with long-life battery (i.e., lasting a minimum of 5 years).
12. HIGH/LOW SAFETY LIMIT ALARMS AND UNIT SHUTDOWN	
12.1	The Reach-in Environmental Chamber must include high and low limit alarms. These alarms are to provide common alarm contact activation and unit shutdown in case of an out of temperature range condition.

ITEM	CRITERIA
13. ALARM ANNUNCIATION	
13.1	The chamber must have an alarm display discernable as an alarm condition at a distance of 10 feet and an audible alarm device producing a sound level greater than 50 decibels at 2 feet;
13.2	The chamber must send email notification to users when alarms are triggered;
14. DRY ALARM CONTACTS	
14.1	Must include a minimum of one set of "dry" (unpowered) common alarm contacts for common alarm annunciation to the Building Automation System (current system is Delta), i.e., any critical alarm function on the unit (Hi and Low Temp at a (minimum) will cause a set of dry (unpowered) contacts to close for connection to the Building Automation System.
15. ELECTRICAL SPECIFICATIONS	
15.1	Must be Canadian Standards Association (CSA), Underwriters Laboratories Canada (ULC) or Electrical Safety Authority Field Evaluation (ESAFE) approved prior to delivery;
15.2	Must run off the available electrical service (208V, 1 phase, 60 Hz or 120V, 1 phase, 60Hz);
15.3	Must come completely wired and equipped with factory wired power cord and grounded plug(s). All other operating voltage requirements for each individual chamber must be fed from within the factory wired reach-in itself. Additional field wiring must not be required ;
15.4	At least two convenience 120V receptacles must be supplied within the chamber.
15.5	All components (e.g., light bulbs) must be CSA (or UL, ULC equivalent) approved;

3. Delivery

- 3.1 The Contractor must deliver the environmental chambers to the ground level storage area door at
 NATURAL RESOURCES CANADA
 1219 QUEEN ST EAST
 DOOR #12, H116 GROUND FLOOR HEADER HOUSE
 SAULT STE MARIE
 ONTARIO, P6A 2E5
- 3.2 All the deliverables must be received on or before March 31, 2022.

4. Warranty

- 4.1 The Contractor must include a second year parts and service warranty for the entire system including software for a period of one year beginning at the expiration of the standard warranty.
- 4.2 The Contractor must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant for replacement, repair or making good. The Contractor must also pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location as directed by Canada. If, in the opinion of Canada, it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the

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Work at that location. In such cases, the Contractor will be responsible for all Costs (including travel and living expenses) incurred in so doing, Canada will not reimburse these Costs.

4.3 The Contractor must provide an initial response to a customer within 24 hours or less during business hours, Monday to Friday, 8:00 am to 5:00 pm. If required, a technician must be on site within a maximum of 3 business days.

5. Documentation and Manuals

5.1 Each supplied unit must arrive with a full set of installation, operation, maintenance and service manuals, in English, and in hard-copy and electronic formats.

ANNEX "B"

BASIS OF PAYMENT

All inclusive, firm unit prices in Canadian funds, transportation included, FOB destination, Canadian Customs duties and excise taxes included. GST/HST extra if applicable.

Note: Text in *italics* font will be deleted at contract award.

1. Firm Requirement

Table 1

Item No	Description	Quantity	Firm Unit Price	Extended Price
1	For the supply and delivery of Reach-in Environmental Chamber in accordance with Annex A - Requirement. (With 5.1.1 Type A Air Cooled Condensing Unit)	1	\$ _____	\$ _____
2	For the supply and delivery of Reach-in Environmental Chambers in accordance with Annex A - Requirement. (With 5.1.2 Type B – Water Cooled Condensing Unit)	1	\$ _____	\$ _____
3	One extra year warranty in accordance with Section 4 of Annex A – Requirement.	2	\$ _____	\$ _____
Total Extended Price (GST or HST extra)				
<i>Extended Price for Item 1 + Extended Price for Item 2 + Extended Price for Item 3</i>				\$ _____

2. Optional Requirements

2.1 Optional Requirement within Contract Period (from the date of Contract to March 31, 2023)

The Contractor must provide up to 2 Type A and 2 Type B Environmental Chambers on the as and when requested basis. This option may be exercised anytime from the date of Contract to March 31, 2023.

Table 2

Item No	Description	Quantity	Firm Unit Price	Extended Price
1	For the supply and delivery of Reach-in Environmental Chamber in accordance with Annex A - Requirement. (With 5.1.1 Type A Air Cooled Condensing Unit)	up to 2	\$ _____	\$ _____
2	For the supply and delivery of Reach-in Environmental Chambers in accordance with Annex A - Requirement. (With 5.1.2	up to 2	\$ _____	\$ _____

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	Type B – Water Cooled Condensing Unit)			
3	One extra year warranty in accordance with Section 4.1 of Annex A – Requirement.	Up to 4	\$ _____	\$ _____
Total Extended Price (GST or HST extra) <i>Extended Price for Item 1 + Extended Price for Item 2 + Extended Price for Item 3</i>				\$ _____

2.2 Optional Requirement within Option Period 1 (April 1, 2023 to March 31, 2024)

The Contractor must provide up to 2 Type A and 2 Type B Environmental Chambers on the as and when requested basis. This option may be exercised anytime from April 1, 2023 to March 31, 2024.

Table 3

Item No	Description	Quantity	Firm Unit Price	Extended Price
1	For the supply and delivery of Reach-in Environmental Chamber in accordance with Annex A - Requirement. (With 5.1.1 Type A Air Cooled Condensing Unit)	up to 2	\$ _____	\$ _____
2	For the supply and delivery of Reach-in Environmental Chambers in accordance with Annex A - Requirement. (With 5.1.2 Type B – Water Cooled Condensing Unit)	Up to 2	\$ _____	\$ _____
3	One extra year warranty in accordance with Section 4.1 of Annex A – Requirement.	Up to 4	\$ _____	\$ _____
Total Extended Price (GST or HST extra) <i>Extended Price for Item 1 + Extended Price for Item 2 + Extended Price for Item 3</i>				\$ _____

2.3 Optional Requirement within Option Period 2 (April 1, 2024 to March 31, 2025)

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The Contractor must provide up to 2 Type A and 2 Type B Environmental Chambers on the as and when requested basis. This option may be exercised anytime from April 1, 2024 to March 31, 2025.

Table 4

Item No	Description	Quantity	Firm Unit Price	Extended Price
1	For the supply and delivery of Reach-in Environmental Chamber in accordance with Annex A - Requirement. (With 5.1.1 Type A Air Cooled Condensing Unit)	up to 2	\$ _____	\$ _____
2	For the supply and delivery of Reach-in Environmental Chambers in accordance with Annex A - Requirement. (With 5.1.2 Type B – Water Cooled Condensing Unit)	Up to 2	\$ _____	\$ _____
3	One extra year warranty in accordance with Section 4.1 of Annex A – Requirement.	Up to 4	\$ _____	\$ _____
Total Extended Price (GST or HST extra) <i>Extended Price for Item 1 + Extended Price for Item 2 + Extended Price for Item 3</i>				\$ _____

Total Evaluated Price (GST or HST extra) <i>Total Extended Price for Table 1 + Total Extended Price for Table 2 + Total Extended Price for Table 3 + Total Extended Price for Table 4</i>	\$ _____
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ANNEX "C"

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);

ANNEX "D"

EVAUATION CRITERIA

Mandatory Technical Evaluation Criteria

1. Bidders must clearly demonstrate compliance with each mandatory technical criteria. Failure to demonstrate compliance will result in the offer being deemed non-responsive, and be given no further consideration.

2. It is the Bidders' responsibilities to ensure that the submitted supporting technical documentation provides detail to prove that the proposed product(s) meet the requirements detailed herein. If supporting technical documents are not available, the Bidder must prepare a written narrative complete with a detailed explanation of how its offer demonstrates technical compliance.

ITEM	CRITERIA	REFERENCE TO SUBSTANTIATION IN THE TECHNICAL BID.
1. CABINET SIZE – These are to accommodate space constraints		
1.1	Minimum interior (growing) volume: 29 cubic feet;	
1.2	Minimum growing height between each equally-spaced shelf and the lights above: 8.5 inches;	
1.3	Maximum Outer Dimensions	
1.3.1	<ul style="list-style-type: none"> • Height: 79 inches; 	
1.3.2	<ul style="list-style-type: none"> • Width: 60 inches; 	
1.3.3	<ul style="list-style-type: none"> • Depth: 35 inches 	
2. CABINET CONSTRUCTION		
Cabinet construction must include the following:		
2.1	Chamber completely self-contained;	
2.2	Exterior: 18-gauge (minimum thickness) exterior electro-zinc plated steel, stainless steel, aluminum or approved alternative material;	
2.3	Interior: 22-gauge (minimum thickness) electro-zinc plated steel, stainless steel, aluminum or approved alternative material;	
2.4	Welded seams and joints on outer and inner shells;	
2.5	Inner shell supported by non-compressing, minimum R-12 insulation, locking inner liner in place without a metal-to-metal bond to outer case;	
2.6	Wall thickness: 2" (minimum);	
2.7	Minimum of one access port: 1½" diameter;	
2.8	Interior Floor: 22-gauge (minimum thickness) stainless steel equipped with floor drain and hose assembly;	
2.9	Shelving: a total of 4 shelves (white epoxy-coated or stainless steel) per chamber, adjustable in vertical position in ½ inch increments and capable of holding a static weight of a minimum of 120 lbs.;	
2.10	Caster Assembly and adjustable leveling legs required;	

ITEM	CRITERIA	REFERENCE TO SUBSTANTIATION IN THE TECHNICAL BID.
2.11	Door: must block light from entering the chamber, be insulated, be lockable and be larger than the front opening of the chamber;	
2.12	Observation Window in Door: 12" x 12" (minimum) thermal pane window with light-tight, hinged door cover;	
2.13	Interior Finish: Highly reflective, high temperature baked white powder coating or approved alternative;	
2.14	Exterior Finish: High temperature baked powder coating or approved alternative. Colour to be from manufacturer's standard palette.	
3. TEMPERATURE		
3.1	RANGE: both of the temperature range requirements below must be met:	
3.1.1	Maintain -10°C to 44°C with all lights OFF. Temperature uniformity must be ± 0.5°C throughout the chamber on a horizontal plane;	
3.1.2	Maintain +10°C to 44°C with all lights ON. A lower low-end to this range is preferred. Temperature uniformity must be ± 0.5°C throughout the chamber on a horizontal plane	
4. HUMIDITY		
4.1	Must include both a humidifier and a dedicated, controlled dehumidification mode of operation;	
4.2	Additive humidity must be provided by an ultrasonic humidifier. Additive humidity control higher than ambient to 75% (± 10%), lights on, for any set temperature between 15°C to 30°C;	
4.3	Dehumidification must be provided by an in-chamber, functionally independent dehumidifying coil with a reheat heater to maintain interior temperature. Humidity removal control lower than ambient to 40% (± 10%), lights on, for any set temperature between 15°C to 30°C;	
4.4	The controller must use an electronic relative humidity sensor to maintain RH. The sensor must have an operating range of between 10 and 95 percent and an accuracy ± 10%.	
5. REFRIGERATION		
5.1	Environmental Chamber(s) must be available in two configurations, to be specified at time of order:	
5.1.1	OPTION A: Main cooling and heating must be provided by an integral mechanical compressor and air cooled condensing unit with hot gas bypass and automatic reset hi and low pressure switch protection devices. A chamber that provides interior space heating by activation of only an electric heater is not acceptable, hot gas bypass must be present;	

ITEM	CRITERIA	REFERENCE TO SUBSTANTIATION IN THE TECHNICAL BID.
5.1.2	OPTION B: Main cooling and heating must be provided by an integral mechanical compressor and water cooled condensing unit with hot gas bypass and automatic reset hi and low pressure switch protection devices. A chamber that provides interior space heating by activation of only an electric heater is not acceptable, hot gas bypass must be present;	
5.2	Solenoid valves if utilized in the refrigeration system must be of the extended stem, rapid and frequent cycling type for long life operation;	
5.3	Must include electric or hot gas or approved alternative system for defrosting evaporator coil(s).	
5.4	Must include phenolic coating on coil(s);	
5.5	Pressure switches must be marked in units of psi;	
5.6	Working refrigerant must be a common hydrofluorocarbon (HFC) (example R513A) with negligible ozone depletion potential(ODP).	
6. LIGHTING		
6.1	Light Intensity: maximum of at least 210 micromoles/m ² /s at 25°C. Lights must be dimmable in units of micromoles/m ² /s down to 15% or less of the maximum. Dimming must be under the control of the chamber's internal control system;	
6.2	Lamp Type: Must include dimmable fluorescent tubes that include UV-A in the light spectrum: Sylvania Octron 950 bulbs or approved equivalent;	
6.3	Light Canopy: must include a total of 4 light banks each of which contains a minimum of 6 dimmable fluorescent tubes (minimum of 24 bulbs into total). The maximum number of bulbs per bank is 10, i.e., 40 in total. One bank must be fixed at the ceiling; 3 banks must be adjustable in height position in ½" increments within the chamber and removable from the chamber by unplugging them from electrical sockets located in the rear wall;	
6.4	Ballasts: Must be high-efficiency, dimmable electronic ballasts controlled by the central controller. Ballasts must be thermal and water protected, and easily accessible;	
6.5	Light Sensor: Must be minimally a PAR (photosynthetically active radiation; 400-700nm range) sensor with the ability (along with the controller) to dim lamps to specified intensities. A sensor that does the above and detects UV-A (down to 315 nm) is preferred.	
7. AIR FLOW		
7.1	Unit interior must provide uniform horizontal air flow moving forward from perforated rear panel of growing area.	

ITEM	CRITERIA	REFERENCE TO SUBSTANTIATION IN THE TECHNICAL BID.
8. AIR FILTRATION		
8.1	A HEPA filter must be installed within the air exhaust. Easy access must be provided for filter replacement.	
9. CONTROL SYSTEM		
9.1	The onboard controller software must be able to configure and modify light, temperature and relative humidity for constant, diurnal and 24-hour day multi-step (minimum 500 steps) programs (the latter in both ramping and non-ramping modes);	
9.2	Programming must be set to a standard 24-hour clock. A program must not be controlled simply by elapsed time (i.e., after 2 hours or 4 hours or 8 hours has passed an event occurs). Each line of a program must be set and triggered by referring to a time on a 24 hour clock. The clock and the program timing & information must not be altered by a power outage;	
9.3	Connectivity: Unit controller must come factory equipped for Local Area Network (LAN) and Bluetooth connectivity, to allow programming and monitoring of the chambers from office computers	
9.4	Communication: Programming and alarms must be able to be checked & modified and status of the chamber checked via:	
9.4.1	an interactive local user interface (e.g., an industrial keypad and display or a touch screen) factory mounted on the unit; and	
9.4.2	by a remote, non-proprietary personal computer (PC) or laptop via a LAN connection. Specifically, the chamber must have an on-board web server optimized to interface with publically available, major web browsers, to allow notifications to be sent to smart phones in the event of a malfunction when the users are away from the lab. In addition, security logins and passwords as well as email addresses for alarm notification must also be configurable by the remote, non-proprietary personal computer (PC) or laptop via the factory equipped LAN connection;	
9.5	The controller software must allow the programming of simulated 24-hour day weather cycles with variable light, temperature and humidity. The onboard controller software must be capable of receiving METAR data (Meteorological Terminal Aviation Routine Weather Report) collected from weather stations via the LAN connection and, in near real-time, simulate the field conditions (i.e., light, temperature and humidity).	
10. DATA LOGGING		
10.1	The chamber must be equipped with the ability to record light, temperature and humidity values at a frequency of up to once per minute or faster. The data must be stored on a memory device with a capacity of 4 Gigabytes or greater. The data must be downloadable from this device via an easily accessible USB	

	connection.	
11. BATTERY BACKUP		
11.1	Both the clock and volatile memory (e.g., the controller time and running program information) must be backed up with a long-life battery (i.e., lasting a minimum of 5 years).	
12. HIGH/LOW SAFETY LIMIT ALARMS AND UNIT SHUTDOWN		
12.1	The Reach-in Environmental Chamber must include high and low limit alarms. These alarms are to provide common alarm contact activation and unit shutdown in case of an out of temperature range condition.	
13. ALARM ANNUNCIATION		
13.1	The chamber must have an alarm display discernable as an alarm condition at a distance of 10 feet and an audible alarm device producing a sound level greater than 50 decibels at 2 feet;	
13.2	The chamber must send email notification to users when alarms are triggered.	
14. DRY ALARM CONTACTS		
14.1	Must include a minimum of one set of "dry" (unpowered) common alarm contacts for common alarm annunciation to the Building Automation System (current system is Delta), i.e., any critical alarm function on the unit (Hi and Low Temp at a minimum) will cause a set of dry (unpowered) contacts to close for connection to the Building Automation System.	
15. ELECTRICAL SPECIFICATIONS		
15.1	Must be Canadian Standards Association (CSA), Underwriters Laboratories Canada (ULC) or Electrical Safety Authority Field Evaluation (ESAFE) approved prior to delivery;	
15.2	Must run off the available electrical service (208V, 1 phase, 60 Hz or 120V, 1 phase, 60Hz);	
15.3	Must come completely wired and equipped with factory wired power cord and grounded plug(s). All other operating voltage requirements for each individual chamber must be fed from within the factory wired reach-in itself. Additional field wiring must not be required;	
15.4	At least two convenience 120V receptacles must be supplied within the chamber.	
15.5	All components (e.g., light bulbs) must be CSA (or UL, ULC equivalent) approved.	
16. WARRANTY		
16.1	The Contractor must include a second year parts and service warranty for the entire system for a period of one year beginning at the expiration of the standard warranty;	
16.2	The Contractor must provide an initial response to a customer within 24 hours or less during business hours, Monday to Friday, 8:00 am to 5:00 pm. If required, a technician must be on site within a maximum of 3 business days.	

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23240-220480

Amd. No. - N° de la modif.
File No. - N° du dossier
TOR-1-44115

Buyer ID - Id de l'acheteur
TOR006
CCC No./N° CCC - FMS No./N° VME

ITEM	CRITERIA	REFERENCE TO SUBSTANTIATION IN THE TECHNICAL BID.
17. MANUALS		
17.1	Each supplied unit must arrive with a full set of installation, operation, maintenance and service manuals, in English, and in hard-copy and electronic formats.	

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ANNEX "E"

ADDITIONAL CERTIFICATIONS

Board of Directors

In accordance with Section 1, Integrity Provisions – Bidder, Bidders are required to provide a list of their Board of Directors before contract award. Bidders are requested to provide this information in their bid.

Director Name - _____

Procurement Business Number (PBN)

In accordance with Section 2, Procurement Business Number, of the Standard Instructions, Bidders are required to have a Procurement Business Number (PBN) before Standing Offer award.

Procurement Business Number - _____

Suppliers may register for a PBN online at Supplier Registration Information. For non-Internet registration, suppliers may contact the InfoLine at 1-800-811-1148 to obtain the telephone number of the nearest Supplier Registration Agent.