

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
**Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada**  
#910, 410-22nd Street East  
Saskatoon  
Sask.  
S7K 5T6  
Bid Fax: (306) 975-5397

**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**

<b>Title - Sujet</b> Growth Chambers	
<b>Solicitation No. - N° de l'invitation</b> 01581-140335/A	<b>Date</b> 2013-12-10
<b>Client Reference No. - N° de référence du client</b> AAFC	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$STN-190-4651	
<b>File No. - N° de dossier</b> STN-3-36047 (190)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2014-01-20</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Central Standard Time CST
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Mack, Wayne	<b>Buyer Id - Id de l'acheteur</b> stn190
<b>Telephone No. - N° de téléphone</b> (306) 975-4004 ( )	<b>FAX No. - N° de FAX</b> (306) 975-5397
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> Agriculture and Agrifood Canada #1 Airport Road Box 1030 Swift Current, SK S9H 3X2	

**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/Réception  
des soumissions Travaux publics et Services  
gouvernementaux Canada  
#910, 410 - 22nd Street East  
Saskatoon  
Sask.  
S7K 5T6

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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## **PART 1 - GENERAL INFORMATION**

### **1. Security Requirement**

There is no security requirement associated with this bid solicitation.

### **2. Requirement**

The requirement is detailed under Article 2 of the resulting contract clauses.

### **3. Debriefings**

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

## **PART 2 - BIDDER INSTRUCTIONS**

### **1. Standard Instructions, Clauses and Conditions**

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the 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 (2013-06-01) 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: sixty (60) days

Insert: one-hundred and twenty (120) days

### **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 on page 1 of the bid solicitation.

### **3. Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority no later than fifteen (15) 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 questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

#### 4. Applicable Laws

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

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.

### PART 3 - BID PREPARATION INSTRUCTIONS

#### 1. Bid Preparation Instructions

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

Section I: Technical Bid (1 hard copy)

Section II: Financial Bid (1 hard copy)

Section III: Certifications (1 hard copy)

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

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

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

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement

(<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

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

#### 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. The total amount of Applicable Taxes must be shown separately.

#### 1.1 Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation

#### Section III: Certifications

Bidders must submit the certifications required under Part 5.

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 1. Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

### 1.1 Technical Evaluation

#### 1.1.1 Mandatory Technical Criteria

To be considered responsive, a bid must meet all the specifications in Annex "A" and the following mandatory technical criteria. Failure to meet the specifications in Annex "A" and the following mandatory technical criteria will render your submission non-responsive and it will be given no further consideration.

**Proof of the following must be submitted with bid or within seven (7) days upon request.**

1. All chambers must be: (1) certified with the CSA (Canadian Standards Association), or (2) certified with the UL (United Laboratories).
2. Manufacturer must be ISO 9001 certified. The certification applies to the order, design and manufacturing processes.
3. Manufacturer must indicate that it guarantees the availability of parts and components for a minimum of 10 years from date of contract.
4. Vendors must provide growth chamber light scans to confirm light intensity is as specified and stated in micromoles/m<sup>2</sup>/sec measured at 6" from the lamps, verified at 25°C with 100 hour old lamps.
5. Manufacturer must provide 3 references (names, contact modes and locations) in support of similar equipment installations.

### 1.2 Financial Evaluation

The price for each line item will be multiplied by 2 to arrive at a total for the line item. Each line item total will be added together to arrive at the Evaluated Price, as follows:

(Price for item #1 in the Basis of Payment x 2) + (Price for item #2 in the Basis of Payment x 2) + (Price for item #3 in the Basis of Payment x 2) = Evaluated Price

*SACC Manual Clause A0222T (2013-04-25), Evaluation of Price*

## 2. Basis of Selection

### 2.1 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

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

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether 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 with this request will also render the bid non-responsive or will constitute a default under the Contract.

### 1. Mandatory Certifications Required Precedent to Contract Award

#### 1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

#### 1.2 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 ([http://www.labour.gc.ca/eng/standards\\_equality/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equality/eq/emp/fcp/list/inelig.shtml)) available from Human Resources and Skills Development Canada (HRSDC) - Labour's website.

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**

### **1. Security Requirement**

There is no security requirement applicable to this Contract.

### **2. Requirement**

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

### **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>) issued by Public Works and Government Services Canada.

#### **3.1 General Conditions**

2010A (2013-04-25), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### **4. Term of Contract**

#### **4.1 Delivery Date**

All the deliverables must be received on or before \_\_\_\_\_.

### **5. Authorities**

#### **5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Wayne Mack  
Supply Specialist  
Public Works and Government Services Canada  
Acquisitions Branch - Western Directorate  
910 - 410 , 22nd Street East  
Saskatoon, SK S7K 5T6

Telephone: (306) 975-4004

Facsimile: (306) 975-5397

E-mail address: wayne.mack@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.

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## 5.2 Project Authority

The Project Authority for the Contract is:

TO BE DETERMINED

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.

## 5.3 Contractor's Representative

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Telephone : \_\_\_\_\_

Facsimile: \_\_\_\_\_

E-mail address: \_\_\_\_\_

## 6. Payment

### 6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit price(s), as specified in Annex B for a cost of \$TO BE DETERMINED. 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.

### 6.2 Limitation of Price

*SACC Manual* clause C6000C(2011-05-16) Limitation of Price

### 6.3 Single Payment

*SACC Manual* clause H1000C (2008-05-12) Single Payment

### 6.4 SACC Manual Clauses

*SACC Manual* clause C2000C (2007-11-30) Taxes - Foreign-based Contractor

## 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.

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.

## 8. Certifications

### 8.1 Compliance

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

## 9. Applicable Laws

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

## 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 2010A (2013-04-25), Goods (Medium Complexity);
- (c) Annex A, Requirement;
- (d) Annex B, Basis of Payment
- (e) the Contractor's bid dated \_\_\_\_\_

## 11. SACC Manual Clauses

SACC *Manual* clause B1501C (2006-06-16) Electrical Equipment

SACC *Manual* clause G1005C (2008-05-12) Insurance

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## Annex "A"

### Requirement

#### Specifications for Reach-in Plant Growth Chambers

##### 1.0 General Requirement

1. All chambers must be: (1) certified with the CSA (Canadian Standards Association), or (2) certified with the UL (United Laboratories).
2. Manufacturer must be ISO 9001 certified. The certification applies to the order, design and manufacturing processes.
3. Manufacturer must indicate that it guarantees the availability of parts and components for a minimum of 10 years from date of contract.
4. Vendors must provide growth chamber light scans to confirm light intensity is as specified and stated in micromoles/m<sup>2</sup>/sec measured at 6" from the lamps, verified at 25°C with 100 hour old lamps.
5. Manufacturer must provide 3 references (names, contact modes and locations) in support of similar equipment installations.

##### 2.0 Technical Requirements

- 2.1 The composition of the chamber walls and doors must be woodless and employ CFC-free insulation. The exterior panels must be aluminum or stainless steel finished with baked enamel [paint] with a smooth or pebbled finish. The interior panels must be aluminum or stainless steel with a highly reflective, white finish on aluminum or white enamel on steel;
- 2.2 The growth chamber must be equipped with two reach-in doors on each side of chamber, with a minimum clear opening of 36" x 78" (915 mm x 1,980 mm), complete with a heat and light-tight gasket. Each door to have an observation window 14" x 14" (355mm x 355mm) ± 2" (50 mm) dual pane with a light tight cover;
- 2.3 Three growth chambers must be equipped with a right hand control panel and three growth chambers must be equipped with a left hand control panel;
- 2.4 Growth chamber interior must be equipped with one (1) wall mounted, two (2) amp convenience receptacle;
- 2.5 Chamber outside dimensions must be 140" W x 70" D x 118.5" H (3556mm W x 1778 mm D x 3010 mm H) ± 2" (50 mm);
- 2.6 Chamber inside dimensions, including the growth area, must be 97" W x 62" D x 100" H (2464 mm W x 1575 mm D x 2540 mm H) ± 2" (50 mm);
- 2.7 Interior growth area must be no less than 40 ft<sup>2</sup> (3.7 m<sup>2</sup>);

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2.8 Growth height must be no less than 92" (2337 mm)  $\pm$  2" (50 mm) from floor to light canopy in the upper position;

2.9 The growth chamber must be equipped with one hose bib and connected to the local control systems for timed control of automatic watering;

2.10 The chamber must have two (2) integrated instrumentation ports each with a minimum diameter of 1.5" (38 mm) and be sealed with light tight caps;

2.11 The growth chamber must be supplied with a factory installed removable perforated aluminum or stainless steel floor allowing conditioned air movement in a vertical direction through the crop;

2.12 Floor of the growth area must support material loads of at least 250 lbs/ft<sup>2</sup>;

2.13 The chamber must also include a shelf with sturdy adjustable, corrosion-resistant, free-standing wire benching covering the entire growth area to support potted plants above the floor at the proper working height. Shelving must incorporate a lever type system for easy adjustment of shelf height;

2.14 Sub-floor and drain must be corrosion resistant and must be waterproofed in order to avoid water leakage through the side panels;

2.15 Supplier must ensure growth chamber drain can be connected to the existing on-site floor drain. The drain must evacuate excess irrigation of plant material;

2.16 The chambers will be stored on-site until construction of the New Phytotron is completed (sometime in 2015). At that time another contract will be issued for the installation and chambers will be tested on site to ensure the chamber meets research facility specified criteria.

### **3.0 Lighting Requirements**

3.1 Chamber light intensity must be > 1400 micromoles/m<sup>2</sup>/s measured at 6" (150mm) from lamps, verified at 25°C with 100 hour old lamps;

3.2 Chamber must be equipped with a vented adjustable light canopy that will ensure a balanced spectrum for researching plant material using T5 fluorescent with 50% 4100 bulbs and 50% 3500 lamps;

3.3 The lamp bank must be counterbalanced and adjustable from a minimum of 36" (914 mm)  $\pm$  2" (50 mm) to a maximum of 92" (2337 mm)  $\pm$  2" (50 mm) measured from the floor;

3.4 Fluorescent and incandescent lamps must be independently controlled and provide a minimum of four (4) programming levels for each lamp type;

3.5 The energy efficient electronic ballasts must be unobstructed to facilitate servicing and allow for adequate cooling by the air circulating fan motors;

3.6 The chambers must be fitted with an integrated quantum light meter for the display and recording of light output supplied.

#### **4.0 Temperature Requirements**

- 4.1 Chamber at full operation must provide a minimum temperature range of +4°C to +40°C lights OFF/ON. Full fresh air must be above +4°C;
- 4.2 Temperature spikes (up to  $\pm 2^\circ\text{C}$ ) during defrost will be tolerated;
- 4.3 Chamber temperature control must be  $\pm 0.5^\circ\text{C}$  of the control point;
- 4.4 Chambers must include primary temperature safety limits for programmable high and low temperature alarm limits that automatically alarm if programmed experimental set points are exceeded;
- 4.5 Secondary temperature safety limits must be provided to allow for the setting of independent high and low temperature limits in order to avoid equipment damage;
- 4.6 Audible alarms must be provided for both high and low limits. On activation of safety limit set points, power to the chamber must be extinguished;
- 4.7 Chambers must include a vertically adjustable sensing device located in the growth area for continuous growth chamber air sampling and mitigate lamp radiation effects.

#### **5.0 Relative Humidity Requirements**

- 5.1 Chamber must provide additive humidity to achieve a minimum of 90% RH at lights OFF and 80% RH at lights ON;
- 5.2 Relative humidity must be limited by a +25°C maximum dew point employing chamber integrated spray nozzles with a minimum psi rating of 60 (4.2 bar). Spray nozzles must be programmed by the control system;
- 5.3 Humidity control must be within  $\pm 5\%$  RH;
- 5.4 The chamber must incorporate a dry humidity sensor located in a device for the sensing, measuring and controlling of humidit

#### **6.0 Refrigeration System and Components**

- 6.1 The refrigeration unit must be a water-cooled, hermetically sealed condensing unit with hot gas bypass system for continuous compressor operation, extended compressor life and accurate temperature control;
- 6.2 The valves of the refrigeration unit must provide continuous flow and variable temperature returns to cooling water;
- 6.3 Refrigeration system must be a hot-gas system incorporating a three (3) way proportional valve to ensure a steady-state system without the use of individual solenoids on separate heating and cooling circuits;
- 6.4 The refrigeration system must switch from chilled water operation at 6-7°C to domestic city water, when required;

6.5 The refrigeration system must have a thermostatic three (3) way water valve and be equipped with a hand operated bypass shut off valve;

6.6 The refrigerator system evaporator coil must be fabricated from copper tubing;

6.7 The refrigeration system condensing unit must be charged with and use a CFC-free refrigerant product;

6.8 The refrigeration system air must be directed uniformly and vertically into the chamber through the floor at a rate of no less than 50ft/min (15.2 m/min);

6.9 The refrigeration system must be capable of removing radiant lamp heat;

6.10 The fresh air supply control system must allow for manual, individual adjustment of a positively sealed inlet and outlet over the volume range of open at 50 ft<sup>3</sup>/min (1.42 m<sup>3</sup>/min) to closed;

6.11 Refrigeration system operation including the visual and audible alarms must be monitored by the control system;

6.12 Pressure transducers must be employed to allow for real-time diagnostics for purposes of preventative maintenance and repair.

## **7.0 Control System**

7.1 Vendor must supply a touch screen enabled controller with a back lit high resolution display monitor for each chamber;

7.2 The control system must allow all users to link daily programs to simulate multi day or seasonal programs;

7.3 The control system must allow users to sequence a minimum of eight (8) programs;

7.4 The control system must allow users to access thru the touch screen an on line help menu/manual for programming assistance;

7.5 The control system must include a status screen which will display the set point conditions, the chamber ID number and the operating indicators for the various components;

7.6 The control system must be constructed in such a fashion as to be able to capture each chamber's controlled data parameters and that each chamber's data is recorded/stored to provide a log of actual experimental conditions and results;

7.7 The control system must incorporate a stored data transfer capability to a desktop workstation using a portable storage device in conjunction with a local area network.

7.8 The control system must include a graphing program to allow for the graphing of both set points and actual performance values;

7.9 The control system must incorporate a pan and zoom function to increase resolution;

7.10 The control system graphing program must allow users to view historical data in a graph format to compare with current performance;

7.11 The control system must provide a continuous on-screen graphical display of the last 24 hours of growth chamber performance and the next eight (8) hours of the chamber's set point program;

7.12 The control system must automatically register/log all inputs and controlled parameters providing a historical performance record;

7.13 Each chambers control system must offer a minimum of three (3) multi-level security password protection selections;

7.14 Each chamber must be equipped with an on screen diagnostic display showing optional inputs and outputs including but not restricted to refrigeration valves and damper motors allowing service personnel determine the service life of the components including but not restricted to lamp burning hours and valve cycles;

7.15 Each chamber must be equipped with an integrated start-up delay capability to stagger activation of the chambers;

7.16 Control systems must be shipped in a communications-ready state for connection to a Central Management System and on-site local area network;

7.17 Each growth chamber must be equipped with dry contact relays to allow the operator to track and receive high and low temperature alarms, humidity, lighting and other controlled parameters;

7.18 The control system and the chamber design must be such that allows an interface with existing Building Alarm System, Central Management and local network;

7.19 The control system must log all alarms. All logged alarms must download to a portable storage device and the network.

## **8.0 Utility Requirements**

8.1 The chamber must connect to existing electrical service on site with an external disconnect switch. Growth chamber must be configured for 120/208 volt, three phase, 60 cycle, four wire plus ground electrical service;

8.2 The chamber must provide connections to connect to the supply and return condenser cooling water lines from central chiller system and connections to connect humidity system to existing purified water.

## **SPECIFIC ADDITIONAL OPTIONS FOR THE PLANT GROWTH CHAMBERS**

### **Option A: Two (2) Growth chambers with low temperature and relative humidity capacity (1 unit with left hand control panel and 1 unit with right hand control panel)**

A.1 Chamber at full operation must provide a minimum temperature range of +2°C to +40°C lights OFF/ON. Full fresh air must be above +4°C;

A.2 Temperature spikes (up to  $\pm 2^\circ\text{C}$ ) during defrost will be tolerated;

A.3 Dehumidification by means of a chemical dryer with a removal capacity of at least 3 lbs/hr to achieve a relative humidity of 60% at +25°C or lower.

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01581-140335/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

stn190

Client Ref. No. - N° de réf. du client

AAFC

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**Option B: Two (2) Growth chambers with misting capacity (note: Not a dew chamber request)  
(1 unit with left hand control panel and 1 unit with right hand control panel)**

B.1 The misting must be done by the use of lamp canopy-mounted spray nozzles, providing a gentle, uniformly distributed fine water droplets on plant foliage;

B.2 Misting programming must be provided through the microprocessor controller

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**Compliance Index:**

Attach a separate appendix to your offer indicating Whether and How your product meets or exceeds each point in the Specifications for Reach-in Plant Growth Chambers detailed in Annex "A", items 1.0.1 to B.2 inclusive. Please provide complete specifications and descriptive and/or technical literature to illustrate your statements.

Bidders should address each item of the Specifications on a point by point basis.

**For example:**

1.0.1. All chambers must be: (1) certified with the CSA (Canadian Standards Association), or (2) certified with the UL (United Laboratories).

**Bidder Response:** "Compliant. Our product is CSA certified. Please refer to our brochure or technical literature pages xxx to support our claim....."

1.0.2. Manufacturer must be ISO 9001 certified. The certification applies to the order, design and manufacturing processes.

**Bidder response:** "Compliant. We are ISO 9001 certified. Please refer to our brochure or technical literature pages xxx to support our claim."

and so on, throughout the complete Specification.

Comments should be made on all points under the Specifications in Annex "A", items items 1.0.1 to B.2 inclusive, e.g. "compliant" or "non-compliant" followed by as much detail as possible. It will be to your advantage to furnish as much detail as possible to support your comments and your claims of compliance for each specification. Reference the page number and highlight the specification in your technical literature that supports your compliance. If there is no technical literature to support a specification, you should indicate so.

The Crown is under NO obligation to seek clarification of the bid(s) or the supporting technical documentation provided. Bidders should note that failure to be able to demonstrate any capability to which they claim compliance will result in their proposal being considered non-responsive. Canada reserves the right to reject any bid which does not comply with this solicitation. Any deviation is to be clearly identified and supported with full details.

**Annex "B"**

**Basis of Payment**

(All prices are GST extra, FOB Destination)

1) Two (2) each - Growth Chamber with **NO options** in accordance with the Specifications detailed in Annex "A" - Requirement. (1 unit with left hand control panel and 1 unit with right hand control panel)

\$ \_\_\_\_\_/each

2) Two (2) each - Growth Chamber with **Option A**, in accordance with the Specifications detailed in Annex "A" - Requirement. (1 unit with left hand control panel and 1 unit with right hand control panel)

\$ \_\_\_\_\_/each

3) Two (2) each - Growth Chamber with **Option B**, in accordance with the Specifications detailed in Annex "A" - Requirement. (1 unit with left hand control panel and 1 unit with right hand control panel)

\$ \_\_\_\_\_/each

**Product(s) offered:** \_\_\_\_\_

**Delivery:**

It is desirable that delivery be completed by 31 March 2014. The best delivery date we can offer is \_\_\_\_\_.