

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
Cabot Place, Phase II, 2nd Floor
Box 4600
St. John's, NF
A1C 5T2
Bid Fax: (709) 772-4603

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 Wind Turbines	
Solicitation No. - N° de l'invitation F6879-155009/A	Date 2015-08-26
Client Reference No. - N° de référence du client F6879-155009	
GETS Reference No. - N° de référence de SEAG PW-\$OLZ-014-6430	
File No. - N° de dossier OLZ-5-38114 (014)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-09-14	Time Zone Fuseau horaire Newfoundland Daylight Saving Time NDT
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: howell (olz), amanda	Buyer Id - Id de l'acheteur olz014
Telephone No. - N° de téléphone (709) 772-4997 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF FISHERIES AND OCEANS JOHN CABOT BLDG 10 BARTERS HILL P.O.BOX 5667 ST JOHNS Newfoundland and Labrador A1C5X1 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

PWGSC / TPSGC - Nfld. Region
Cabot Place, Phase II, 2nd Floor
Box 4600
St. John's, NF
A1C 5T2

Delivery Required - Livraison exigée See Herein	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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File No. - N° du dossier

OLZ-5-38114

Buyer ID - Id de l'acheteur

olz014

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

F6879-155009

CCC No./N° CCC - FMS No/ N° VME

See attachment.

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PART 1 - GENERAL INFORMATION

1.1 Security Requirement

There is no Security Requirement associated with this bid solicitation.

1.2 Requirement

The requirement is detailed under Annex "A" of the resulting contract clauses.

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

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>) 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 (2015-07-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.4 Applicable Laws

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

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

3.1 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) (<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: 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.

Section II: Certifications

Bidders must submit the certifications 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 [To be completed by the Offeror.]

- *Able to provide verification that Offeror is ISO 9001 compliant.*
 - Yes or No _____
- *Able to provide a local contact capable of travelling to either site to perform service or maintenance support within 24 hours of receiving a request, during full length of provided warranty.*
 - Yes or No _____
- *A contact located in either Canada or the United States shall be available to discuss any enquiries or issues related to the wind turbines.*
 - Yes or No _____
- *The supplier shall provide a schedule to carry out the design and manufacture of the equipment to meet provided schedule, keeping the Client informed at regular intervals of the progress of work, and of the nature of any changes to the schedule, or deviations from the design as described in the specification.*
 - Yes or No _____

4.1.2 Financial Evaluation

SACC Manual Clause [A0220T](#) (2014-06-26), Evaluation of Price

PART 5 - CERTIFICATIONS

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. 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 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed [Declaration Form](http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

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 – List of Names

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

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](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Employment and Social Development Canada \(ESDC\) - 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

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 this 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

2010C (2015-07-03), General Conditions - Services (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Award to 31 March 2016.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Amanda Howell, A/Contracting Officer
Public Works and Government Services Canada
Acquisitions Branch
The John Cabot Building, 7th floor
10 Barter's Hill, P.O. Box 4600
St. John's, NL A1C 5T2

Telephone: (709)772-4997
Facsimile: (709)772-4603
E-mail address: amanda.howell@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

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The Project Authority for the Contract is: (To be completed 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 completed by Offeror.]

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

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

6.6 Payment

6.7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price, as specified in Annex "A" for a cost of \$ _____.
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.

6.7.2 Single Payment

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

6.7.3 SACC Manual Clauses

SACC Manual Clause C0100C (2010-01-11), Discretionary Audit – Commercial Goods and/or Services
SACC Manual Clause G1005C (2008-05-12), Insurance

6.8 Invoicing Instructions

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. Invoices must be distributed as follows:

- The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

6.9 Certifications

6.9.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing associated information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the associated information, 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.

6.10 Applicable Laws

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

6.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the general conditions 2010C (2015-07-03), General Conditions – Services (Medium Complexity);
- (c) Annex A, Requirement/Basis of Payment;
- (d) Annex B, Specifications;
- (e) Annex C, Travel and Living Guidelines;
- (f) Annex D, Information for Integrity Provisions;
- (g) the Contractor's bid dated _____ (*insert date of bid*).

6.12 SACC Manual Clauses

SACC Manual Clause B7500C (2006-06-16), Excess Goods

ANNEX "A"

REQUIREMENT/BASIS OF PAYMENT

Requirement:

The Canadian Coast Guard operates two (2) island sites consisting of navigation aids, light towers, fog horn, equipment buildings, and a residence. The electricity currently provided to the sites is through a combination of wind and solar power, connected to a battery bank, augmented by back-up generators in case of extended down time for the wind and solar power systems.

A Bergey BWC Excel-R VCS-10 wind turbine battery charging system with a 7.5 kW capacity currently exists at each of the two sites located on Green Island and Puffin Island in NL.

The intent of this specification is to replace the existing wind turbines at each site with five (5) smaller-scale wind turbines (i.e. overall a total of two (2) wind turbines would be replaced by ten (10) wind turbines). The replacement of the one turbine with five (5) smaller wind turbines is an effort to introduce some redundancy in the wind power generation. The five (5) will be able to, at peak operating condition, supply more power than required. This will allow one or more turbines to be taken out of service without compromising the navigation aids or residential loads.

As these sites are both considered remote, accessible by boat or helicopter only, the smaller turbines and towers should be allow a maintenance crew of two (2) people to lower a tower and repair or remove a turbine as required.

Please see the Specification at Annex "B".

Basis of Payment: [To be completed by Offeror.]

ITEM DESCRIPTION	PRICE PER UNIT	QUANTITY	TOTAL PRICE
Wind Turbines	\$ _____	10	\$ _____
	TOTAL		\$ _____

The Offeror must complete the "Suppliers Response" in Appendix" B "" or the offer will be deemed unresponsive:

Has it been completed? Yes or no _____

ANNEX "B"

SPECIFICATION

WIND TURBINE PERFORMANCE SPECIFICATION FOR GREEN ISLAND AND PUFFIN ISLAND, NL FISHERIES AND OCEANS CANADA

1 GENERAL

1.1 Background

1.1.1 The Canadian Coast Guard operates two (2) island sites consisting of navigation aids, light towers, fog horn, equipment buildings, and a residence. The electricity currently provided to the sites is through a combination of wind and solar power, connected to a battery bank, augmented by back-up generators in case of extended down time for the wind and solar power systems.

A Bergey BWC Excel-R VCS-10 wind turbine battery charging system with a 7.5 kW capacity currently exists at each of the two sites located on Green Island and Puffin Island in NL.

1.1.2 The intent of this specification is to replace the existing wind turbines at each site with five (5) smaller-scale wind turbines (i.e. overall a total of two (2) wind turbines would be replaced by ten (10) wind turbines). The replacement of the one turbine with five (5) smaller wind turbines is an effort to introduce some redundancy in the wind power generation. The five (5) turbines will be able to, at peak operating condition, supply more power than required. This will allow one or more turbines to be taken out of service without compromising the navigation aids or residential loads.

1.1.3 As these sites are both considered remote, accessible by boat or helicopter only, the smaller turbines and towers should allow a maintenance crew of two (2) people to lower a tower and repair or remove a turbine as required.

1.2 Scope of Specification

1.2.1 This specification details the minimum requirements for the design, manufacture and delivery of ten (10) wind turbines, towers, inverters and all associated equipment to furnish a complete installation of a wind power generation system on two island sites off the coast of Newfoundland and Labrador, with the ratings, features, and characteristics described below.

1.2.2 The equipment shall be factory assembled, tested and delivered, ready for field installation and connections.

1.2.3 This performance specification includes site background information, a description of the wind turbine performance specifications, and prescriptive design details.

2 QUALITY ASSURANCE

2.1.1 Provide verification that supplier is ISO 9001 compliance.

2.2 Standards

2.2.1 The wind turbine shall be designed in accordance with the applicable sections of the current revision of the following documents. In the event of conflicting requirements between codes and standards, the most stringent will prevail.

- ANSI C62.41 (IEEE 587) - Surge Suppression
- CSA S37-01 (Reaffirmed 2011) - Antennas, Towers and Antenna – Supporting Structures
- CSA 22.1-15 - Canadian Electrical Code 23rd Edition
- CSA 22.2, No. 107.1 - General Use Power Supplies
- National Fire Code of Canada
- UL Standard 1778 - Uninterruptible Power Systems
- AWEA 9.1 – 2009 - Small Wind Turbine Performance and Safety Standard

2.3 Approvals

2.3.1 All Electrical equipment shall be approved for installation at the project site and where installed in an exterior location shall be rated for salt spray and corrosion resistance. All devices and materials shall be CSA approved, where applicable, and shall bear a Canadian Standards Association label, or be certified, and labelled, by a testing organization accredited by the Standards Council of Canada and acceptable to FISHERIES AND OCEANS Canada (DFO) and to the local electrical inspection authority.

2.4 Submittals

2.4.1 The supplier shall submit Shop Drawings and Product Data indicating:

- Shipping and assembled outline dimensions (AutoCAD);
- Assembly and elevation drawings (AutoCAD);
- Weights;
- Foundations;
- Completed data sheets (AutoCAD or Excel);
- Elevation drawings showing configuration and identification of compartments (AutoCAD);
- Tower anchoring method and dimensioned foundation template;
- Cable entry and exit locations;
- Dimensioned position and size of bus bars;
- Schematic and wiring diagrams;

- Schedule of fuse ratings;
- Fuse melt / clear curves;
- Manuals and programming software;
- Data on lifting, lowering, jacking, hauling, rolling and skidding;
- Other technical data requested with bid;
- Manufacturer and manufacturing location;
- Complete nameplate data including serial number and order number;
- Local vendor, contact, phone, fax, e-mail; and
- Location and availability of service.

2.5 Serviceability

2.5.1 Bidder will provide a local contact capable of travelling to either site to perform service or maintenance support within 24 hours of receiving a request, during full length of provided warranty.

2.5.2 A contact located in either Canada or the United States shall be available to discuss any enquiries or issues related to the wind turbine.

2.6 Exceptions

2.6.1 Exceptions to the specification shall be stated with bid and a specific paragraph number identified to which exception is being taken.

2.6.2 Any deviation from this specification requires prior written acceptance from DFO.

3 PRODUCTS

3.1 Design Requirements

3.1.1 The wind turbine equipment shall be comprised of a wind turbine, weatherproof disconnect switch, tower, foundation design, stackable inverter, charge controller, and diversion load.

3.1.2 All equipment and towers shall be designed and built to meet the requirements of the National Building Code of Canada, 2010, environmental conditions:

- Importance – High
- Snow Loads –
- $S_s = 2.3$ kPa
- $S_r = 0.7$ kPa
- Seismic – Class A site;
- Wind –

- open terrain;
- $q = 1.05 \text{ kPa}$

3.1.3 Prescriptive wind turbine design details have been compiled based on the available information regarding the existing wind turbine at the sites as well as potential wind turbine replacement options. Recommended design details are presented in the following table:

SPECIFICATION	
Reliability	Minimum 5 year warranty
Compatibility	Off-grid, 48 V battery charging system
Power Rating (at 11m/s)	Approximately 10 kW total per site (Approximately 2 kW per wind turbine)
Monthly Power (at 11m/s)	Approximately 4,000 kWh total per site (Approximately 800 kWh per wind turbine)
Turbine Size	Rotor Diameter : Less than 4 m, preferably 1.5 to 3.8 m Weight: 100 Kg max Tower Height: 10 m
Maximum Survival Speed	Minimum 45 m/s, preferably 50 to 60 m/s
Structural Incorporation	Mount to guy supported Tilt-up Tower Pole

3.1.4 All equipment shall be capable of continuously operating with a temperature range of **-40°C to +40°C**.

3.1.5 The wind turbine electronics shall be completely assembled and wired in an enclosure.

3.2 Wind Turbine

3.2.1 Each turbine shall be able to provide a minimum rated power of 2 kW and a maximum power output of 3 kW

3.2.2 The turbine shall be grid feeding 120/240V split phase voltage regulated output. Voltage regulation shall be internal to the turbine.

3.2.3 The turbine shall have a non-mechanical braking system capable of preventing the turbine from spinning at wind speeds over 66 m/s.

3.3 Tower

3.3.1 The tower shall be (3-Section) monopole, guyed and approximately 10 meters in height.

3.3.2 The functionality of the tower shall allow for easy access to the wind turbine if maintenance or repairs are required.

3.3.3 Supplier to provide owner's manual detailing installation procedures which shall include, but not be limited to:

- Parts List;

- Tower, Base and Anchor Layouts;
- Tower Base & Guy Wire Anchor Assembly;
- Assembly of Pipe sections;
- Guy Wires attachment;
- Grounding; and
- Procedures for raising and lowering the Tower.

3.3.4 The tower shall have a minimum of 3 guy wires to provide support and to resist environmental conditions as provided.

3.4 Foundations

3.4.1 All foundations shall be designed to accommodate the use of anchors installed into solid bedrock. The site does not have sufficient soils to provide concrete anchor resistance.

3.4.2 Tower base and gin pole support shall be provided to accommodate a flat mounting surface for the tower section.

3.4.3 Guy support anchors shall be provided for installation into solid rock.

3.4.4 Foundation design shall be designed and sealed by a Professional Engineer, licenced to Practice in the Province of Newfoundland and Labrador.

3.5 Inverter

3.5.1 The system shall include dual stacking, solid state 120V inverters capable of backfeeding,

using H Bridge technology and producing a true sine wave.

3.5.2 The inverter shall provide a sinusoidal output regulated within 2% of rated rms voltage with a balanced load and with a total harmonic distortion (THD) of less than 5%.

3.5.3 The inverter will operate at 0.90 power factor for rated loads.

3.5.4 The inverter shall be capable of starting and operating from the AC source without the battery bank and also from the battery bank without an AC source.

3.5.5 The inverter shall be capable of withstanding overloads of 110% for 30 minutes and 125% for 5 seconds and shall be able to withstand an external fault without damage.

3.5.6 The inverter output shall be protected against overloads and internal short circuit currents by the use of circuit breakers or fast-acting fuses. The inverter shall recover to normal operation upon the removal of an external fault or overloaded condition following manual reset.

3.6 Manual Bypass Switches

3.6.1 A manual bypass switch shall be provided to permit safe off-line maintenance of the wind turbine without interrupting power to the load. The switch shall be

blocked from operation if the alternate source and wind turbine source are not in synchronism. The switch shall be lockable in the bypass position.

3.7 Protection, Alarms and Metering

3.7.1 The following protective devices shall be provided:

- AC disconnects at turbines
- AC output breakers at distribution panel
- Fused AC disconnects at inverters

3.7.2 The following indicators and alarm states shall be provided as status lights:

- Inverter/Power Status:
- Inverter ON
- Inverter OFF
- AC source is not connected
- No AC input present
- Fatal Error
- Critical Error
- Battery Bank Status:
- Battery Full (at 50V or higher)
- Battery OK (at 46V-49.6V)
- Battery Low (at 46V or lower)

3.7.3 The following metering shall be provided:

- Input AC voltage for each phase
- Input AC current for each phase
- Inverter output AC voltage
- Alternate source AC voltage
- DC voltage
- DC ammeter to measure battery current (charge and discharge)
- Load AC amps
- Inverter output frequency
- Load kVA, pf and kW

3.7.4 The following monitoring and diagnostics of the above information shall be provided:

- PC Communication software capable of sending and receiving real time performance data wirelessly.

3.8 Miscellaneous Design Requirements

- 3.8.1 All interior enclosures shall be NEMA/EEMAC Type 1.
- 3.8.2 All exterior enclosures shall be at least NEMA/EEMAC Type 3X.
- 3.8.3 All nameplates shall be screw-held lamicoid, black letters on white background.
- 3.8.4 Recommended spare part list shall be provided.

4 EXECUTION

4.1

4.1.1 General

The supplier shall provide a schedule to carry out the design and manufacture of the equipment to meet provided schedule, keeping DFO informed at regular intervals of the progress of the work, and of the nature of any changes to the schedule, or deviations from the design as described in the specification.

4.2 Testing

4.2.1 The supplier shall provide a list of standard production tests and shall state the standard factory tests applied.

4.2.2 Certified test results shall be forwarded to DFO. The test report shall include the following information, as per the AWEA standard:

- Summary Report, containing a power curve, an Annual Energy Production curve, and the measured sound pressure levels (Section 9.4 of IEC 61400-11ed.2).
- Power Performance Test Report
- Acoustic Test Report
- The AWEA Rated Annual Energy
- The AWEA Rated Sound Level
- The AWEA Rated Power
- Wind Turbine Strength and Safety Report
- The tower design requirements shall be reported
- Duration Test Report

4.2.3 DFO reserves the right to witness, or have a representative witness, final testing. The Seller will advise DFO two weeks in advance of the dates of significant tests.

4.2.4 All deficiencies observed during the testing process shall be documented and corrected prior to shipment.

4.3 Suppliers Response

4.3.1 The following tables indicate requirements for Wind turbine and associated equipment, including Inverter/Charge Controller. In general, Vendor shall provide "Yes/No" type answers, or provide detail information/data where "Yes/No" response would not be appropriate.

4.3.2 General Requirements

DESCRIPTION	REQUIREMENT	VENDOR RESPONSE
CSA approved	Components, Devices	
	Wiring	
	Testing	
Canadian Electrical Code (CSA 22.1-15)	Assembly / Fabrication / Method	
Underwriters Laboratories (UL)	Requirements / Testing	
*Refer also to Standards Section 2.2		

4.3.3 Wind Turbine Design Requirements

DESCRIPTION	REQUIREMENT	VENDOR RESPONSE
Wind Turbine System	Split phase turbine with integral voltage regulation, monopole tower and foundation template, vertical gin pole kit c/w hinge plate and rod set	
Operating Temperature Range	-40 °C to +50 °C	
Maximum Power Rating	3.0 kW	
Rated Power (@ 11m/s)	2.0 kW	
Maximum Rotor Diameter	3.8 m	
Maximum Weight	100 kg	
Maximum Tip Speed	66 m/s	
Cut-in Wind Speed	3.2 m/s	
Survival Wind Speed	63 m/s	
Battery Charging	Battery Charge Control kit available for battery charging systems	

Braking System	Electronic stall regulation with redundant relay switch control	
Monitor Software	User Monitoring 2-way interface (wireless)	

4.3.4 Inverter/Charger Design Requirements

DESCRIPTION	REQUIREMENT	VENDOR RESPONSE
Design-Inverter/Battery Charger	Modular Stackable System, Sine wave output, Intelligent battery charging, High Efficiency, weather-resistant, sealed chassis and corrosion resistant internal components, Field serviceable, Phase controlled, Solid State, Pulse-width modulation type, Operate with battery disconnected	
Operating Temperature Range	-40 °C to +60 °C	
Total Harmonic Distortion (THD)	Typical 2 %	
	Maximum 5 %	
	Maintenance Bypass Breaker	
Inverter Output Voltage regulation	± 2 %	
Continuous Battery Charge Output	45 Amps DC	
Maximum Output Current	RMS: 50 Amps AC	
	Peak: 70 Amps AC	
Continuous Power Rating	@ 25 °C : 3600 VA	
AC Overload Capability	Surge : 6000 VA	
	5 seconds : 4000 VA	
	30 minutes : 2500 VA	
Maximum AC Input Current	60 Amps AC	
AC Input Voltage Range	80 - 150 VAC	
AC Input Frequency Range	54 to 66 Hz	
Power Factor	0,90 pf minimum	

4.3.5 General Serviceability

DESCRIPTION	REQUIREMENT	VENDOR RESPONSE
Response Time	How long will it take to response to a service call?	
Technicians	Number of Technicians Employed	
Part Availability	Major Parts	
	Minor Parts	

4.4 Preparation for Shipment

4.4.1 The supplier shall be solely responsible for the provision of adequate shipping protection for the equipment to ensure safe and undamaged arrival to the equipment site.

4.4.2 Equipment shall be protected against vibration and shock damage during transportation, loading and unloading. Further suitable protection shall be provided against corrosion and contamination of any part during transportation and storage.

4.4.3 Parts and accessories shipped separately shall be similarly protected against damage and clearly identified as to end use, including DFO's P.O. number.

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F6879-155009/A
Client Ref. No. - N° de réf. du client
F6879-155009

Amd. No. - N° de la modif.
File No. - N° du dossier
OLZ-5-38114

Buyer ID - Id de l'acheteur
OLZ014
CCC No./N° CCC - FMS No./N° VME

ANNEX "C"

TRAVEL AND LIVING GUIDELINES

Travel Rates (Effective 01 April 2015)

MEALS:	Breakfast:	\$16.00	\$16.00	-
	Lunch:	\$16.60	\$16.60	\$16.60
	Dinner:	\$42.80	-	\$42.80
	TOTALS:	\$75.40	\$32.60	\$59.40

Daily Total (Meals and Incidentals): \$92.70

Incidental Expenses: \$17.30 per day Note: includes telephone calls home

If the first and/or last day on travel status is less than a full calendar day, and provided sleeping accommodation is used during the journey, you may claim \$17.30 for incidental expenses (private & commercial).

ACCOMMODATION: at direct cost.

You may claim actual and reasonable expenses incurred for commercial accommodation; luxury accommodation is not permitted. If private accommodation is provided by friends or relatives, etc., you may claim \$50.00 for each occasion this accommodation is used.

TRANSPORTATION:

Travel by air, bus and rail at direct cost. Only coach or economy class travel permitted.

For local transportation, use public transit, airport buses, etc. where practical.

Rent compact size vehicles, unless the number of passengers or load justifies a mid-sized vehicle.

KILOMETRIC RATE:

Newfoundland – 50.0 cents/km; Nova Scotia – 48.0 cents/km; Prince Edward Island – 47.0 cents/km; and New Brunswick – 47.0 cents/km.

Taxi Fare (without receipt): \$10.00

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OLZ014
CCC No./N° CCC - FMS No./N° VME

ANNEX "D"

INFORMATION FOR INTEGRITY PROVISIONS

MUST BE COMPLETED BY OFFEROR WITH BID SUBMISSION

Please provide list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors;

2. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual;

3. For a Joint Venture - the names of all current members of the Joint venture;

4. For an individual - the full name of the person;
