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Travaux publics et Services gouvernementaux
Canada
Voir dans le document/
See herein
NA
Québec
NA

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

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Oue
800, rue de La Gauchetière Ouest
7e étage, suite 7300
Montréal
Québec
H5A 1L6

Title - Sujet Electric power monitoring equipment	
Solicitation No. - N° de l'invitation 23332-210479/A	Date 2020-12-03
Client Reference No. - N° de référence du client 23332-210479	
GETS Reference No. - N° de référence de SEAG PW-\$MTA-280-15949	
File No. - N° de dossier MTA-0-43181 (280)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2021-01-06	Time Zone Fuseau horaire Heure Normale du l'Est HNE
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Blanchet, Annie	Buyer Id - Id de l'acheteur mta280
Telephone No. - N° de téléphone (514) 605-3664 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Ressources naturelles Canada 1615 Lionel-Boulet Boulevard Varenes, Qc, J3X 1P7	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée Voir doc.	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."

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: 120 days

2.1.1 SACC Manual Clauses

[B1000T](#) (2014-06-26), Condition of material – Bid

2.1.2 Best Delivery Date – Bid (to be filled by the bidder)

While delivery is requested as soon as possible, the best delivery that could be offered is _____.

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 Québec 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.RQReceptionSoumissions-QRSupplyTendersReception.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.

For more information on the use of Postel, please see the following link.

<https://buyandsell.gc.ca/steps-to-follow-for-the-bid-submission-to-bid-receiving-unit-bru-using-epost-connect>

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 ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

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 Quebec.

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 Buy and Sell website, 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
- Section IV: Additional Information

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.

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 Exchange Rate Fluctuation

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

3.1.2 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

The technical evaluation will be based on the mandatory technical criteria detailed in Annex C.

Bidders must demonstrate that the goods offered are compliant with each of these mandatory technical criteria with documents and/or technical drawings, which must be submitted with their proposal.

Bidders should complete the grid in Annex C in order to indicate where the technical criteria are demonstrated within their submitted documents and/or technical drawings and include it with their proposal.

4.1.1.1 Mandatory Technical Criteria

See Annex C "Mandatory technical evaluation criteria"

4.1.1.2 Point Rated Technical Criteria

See Annex D, Point Rated Technical Criteria.

The evaluation of the point-rated technical criteria will be based on the table of point rated criteria detailed in Annex D.

Bidders must demonstrate the point rated technical criteria using documents and/or brochures and/or technical drawings, which must be submitted with its proposal in order to obtain the points allocated.

Each rated criterion will be evaluated on a number of maximum point indicated in the column titled "maximum score" of the "table of point rated criteria".

Bidders should complete the grid in Annex D in order to indicate where point-rated technical criteria are demonstrated within their submitted documents and/or technical drawings and include it with their proposal.

4.1.2 Financial Evaluation

1. Bidders must submit firm prices, customs duties and excise taxes included, and Applicable Taxes excluded.
2. Unless the bid solicitation specifically requires bids to be submitted in Canadian currency, bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.
3. Bidders must provide prices Delivered Duty Paid (DDP) Varennes (Qc) Incoterms 2010 for shipments from a commercial contractor. Bids will be assessed on an DDP basis.

4.1.2.1 The total amount of the financial evaluation:

Sum of prices of items 1 to 3 listed in Appendix "B"- Basis of payment

4.2 Basis of Selection

4.2.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price

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

Exemple :

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

Basis of Selection – Highest Combined Rating Technical Merit (70%) and Price (30%)				
		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55 000.00	\$50 000.00	\$45 000.00
Calculations	Technical Merit Score	$115/135 \times 70 = 59.62$	$89/135 \times 70 = 46.15$	$92/135 \times 70 = 47.70$
	Pricing Score	$45/55 \times 30 = 24.55$	$45/50 \times 30 = 27$	$45/45 \times 30 = 30$
Combined Rating		84.17	73.15	77.70
Overall Rating		1st	3rd	2nd

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.

5.2 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/canada/esdc/labour's) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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

5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Electrical safety certification for Canada

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".

6.2.1 Optional Goods

The Contractor grants to Canada the irrevocable option to acquire the goods described at Annex "A" of the Contract under the same conditions and at the prices 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 within 12 months after contract award by sending a written notice to the Contractor.

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](#) (2020-05-28), General Conditions - Goods (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 Contract to _____ inclusive. (will be indicated at contract award)

(The end date will be calculated as follows: six (6) months after the date of delivery.)

6.4.2 Delivery Date

All the deliverables must be received on or before _____ (will be indicated at contract award).

6.4.5 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "A" of the Contract.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Annie Blanchet
Title: Supply specialist
Public Works and Government Services Canada
Acquisitions Branch
Telephone: 514 605 3664
E-mail address: annie.blanchet@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 Technical Authority

The Technical Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____
Telephone: ____-____-____
Facsimile: ____-____-____
E-mail: _____.

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

6.5.3 Contractor's Representative

Name: _____
Title: _____
Organization: _____
Address: _____
Telephone: ____-____-____
Facsimile: ____-____-____
E-mail: _____.

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 lot price, as specified in Annex "B" for a cost of \$ _____ (*will be indicated 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 Multiple payments

SACC Manual clause [H1001C](#) (2008-05-12) Multiple payments

6.6.3 SACC Manual Clauses

SACC Manual clause [C2000C](#) (2007-11-30) Taxes - Foreign-based Contractor

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.
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 _____.

6.10 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the general conditions [2010A](#) (2020-05-28), General Conditions - Goods (Medium Complexity),
- (c) Annex A, Requirement;
- (d) Annex B, Basis of payment
- (e) the Contractor's bid dated _____

6.11 SACC Manual Clauses

SACC Manual clause [A9062C](#) (2011-05-16) Canadian Forces Site Regulations

SACC Manual clause [G1005C](#) (2016-01-28) Insurance - No Specific Requirement

6.12 Dispute Resolution

(a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.

(b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.

(c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.

(d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "Dispute Resolution".

ANNEX "A"- REQUIREMENT

1-Context:

In the course of the Varennes Interactive Grid (VARIG) R&D project, the CanmetENERGY Research Centre in Varennes requires procuring electric power monitoring equipment for low voltage (LV) loads. These power meters will be deployed in the field at different sites in Varennes to monitor electrical quantities at regular intervals.

To effectively monitor the status of the Varennes distribution grid and test demand response (DR) events for some loads, 10 power meters rated for the LV loads will be required. Each unit must be capable of operating independently, log its historical measurements in an internal memory, record electrical waveforms based on transient events, and regularly transmit and display the logged data through an embedded web server.

If multiple systems fitting the requirements are available, please quote for each system.

2- Quantity:

10 electric power monitoring equipment for LV loads (residential, commercial, industrial) to be deployed across different sites of the Varennes distribution grid.

3- Criteria:

3.1- Mandatory technical requirements:

General Characteristics:

1. Off-the-shelf design (i.e. except minor variations, demonstration must be made that the equipment is already designed and used by other commercial clients).
2. Language of interface and documentation in either of the Canadian official languages (English or French).
3. Power supply must be compatible with North American voltage and frequency.
4. Electrical safety certification for Canada.
5. Operating temperature range:
 - a. Minimum $\leq -10^{\circ}\text{C}$
 - b. Maximum $\geq 30^{\circ}\text{C}$

Measurement and Power Quality:

6. Must include at least 3 voltage channels.
7. Must include at least 3 current channels.
8. Measures true RMS electrical quantities.
9. Measures the following single-phase and three-phase electrical quantities:
 - a. Line-neutral and line-line voltages (V)
 - b. Line current (A)
 - c. Active/reactive/apparent power (kW, kVAR, kVA)
 - d. Active/reactive/apparent energy (kWh, kVARh, kVAh)
 - e. Frequency (Hz)
 - f. Power factor
 - g. Total harmonic distortion (%)
10. Measurement range of line-neutral voltage:
 - a. Minimum ≤ 100 V
 - b. Maximum ≥ 347 V
11. Measurement range of line-line voltage:
 - a. Minimum ≤ 200 V
 - b. Maximum ≥ 600 V
12. Satisfies measurement category III or IV.
13. Energy accuracy meets Class 0.5, 0.5S, 0.2, 0.2S, 0.1 or 0.1S.
14. Includes at least 250 MB of memory size.
15. Programmable measurement and logging intervals in the range of minutes.
16. Captures at least 50 harmonics for voltage and current measurements.
17. Capability of recording waveforms of voltages and currents.
18. Capability of triggering waveform recording.
19. Includes at least 2 digital inputs.
20. Capability of time synchronization, for example GPS, NTP or SNTP.

Communication:

- 21. Physical interface: Includes Ethernet RJ45 port.
- 22. Protocol: Includes Ethernet TCP/IP.
- 23. Includes an embedded web server (HTTP or HTTPS).
- 24. Capability of retrieving measurement data remotely.

Support:

- 25. Supplied software (if applicable) must be compatible with the Windows Operating System 7 and above.

3.2 Point rated technical criteria:

The point rated technical criteria met according to the Annex D assessment will be added in this section at the contract award.

4-Delivery:

4.1 The equipment must be delivered to the following address:

Natural resources Canada
1615 Lionel-Boulet Boulevard
Varenes, Qc, J3X 1P7

5-Deliverables:

- 5.1 The supplier must provide a technical support by phone and/or email for at least one year after delivery.
- 5.2 The supplier must provide the user manuals, documentation, system interface and training material.

6. Optional Goods

Electric power monitoring equipment for LV loads (residential, commercial, industrial) to be deployed across different sites of the Varenes distribution grid as described in Appendix A – Requirement, section 3.

Quantity : up to 5

ANNEX "B"- BASIS OF PAYMENT

Item	Description	Quantity	Total price *
1.	Electric power monitoring equipment for low voltage (LV) loads as described in Appendix A –Requirement, section 3.	10	\$ _____/lot
2.	Delivery as described in Appendix A-Requirement, Section 4.1	Lot	\$ _____
	Total		\$ _____

*Applicable taxes extra

Optional Goods

Item	Description	Quantity	Unit price *
3.	Electric power monitoring equipment for low voltage (LV) loads as described in Appendix A –Requirement, section 3 . <u>Delivery included</u>	Up to 5	\$ _____/each

*The prices provided for optional goods must be valid for 12 months from the date of issuance of the contract and the applicable taxes are extra. Natural Resources Canada may acquire the optional goods one at a time.

ANNEX “C”- Mandatory technical evaluation criteria

#	Criteria	Reference/Description
		Please specify where these mandatory technical criteria are demonstrated within your technical bid (pages # and/or sections # and/or the document's title).
1	Off-the-shelf design (i.e. except minor variations, demonstration must be made that the equipment is already designed and used by other commercial clients).	
2	Language of interface and documentation in either of the Canadian official languages (English or French).	
3	Power supply must be compatible with North American voltage and frequency.	
5	Operating temperature range:	
	a. Minimum $\leq -10^{\circ}\text{C}$	
	b. Maximum $\geq 30^{\circ}\text{C}$	
6	Must include at least 3 voltage channels.	
7	Must include at least 3 current channels.	
8	Measures true RMS electrical quantities.	
9	Measures the following single-phase and three-phase electrical quantities:	
	a. Line-neutral and line-line voltages (V)	
	b. Line current (A)	
	c. Active/reactive/apparent power (kW, kVAR, kVA)	
	d. Active/reactive/apparent energy (kWh, kVARh, kVAh)	
	e. Frequency (Hz)	
	f. Power factor	
	g. Total harmonic distortion (%)	
10	Measurement range of line-neutral voltage:	
	a. Minimum $\leq 100\text{ V}$	
	b. Maximum $\geq 347\text{ V}$	
11	Measurement range of line-line voltage:	
	a. Minimum $\leq 200\text{ V}$	
	b. Maximum $\geq 600\text{ V}$	
12	Satisfies measurement category III or IV.	
13	Energy accuracy meets Class 0.5, 0.5S, 0.2, 0.2S, 0.1 or 0.1S.	
14	Includes at least 250 MB of memory size.	

Solicitation No. - N° de l'invitation
23332-210479/A
Client Ref. No. - N° de réf. du client
23332-210479

Amd. No. - N° de la modif.
File No. - N° du dossier
MTA-9-42302

Buyer ID - Id de l'acheteur
MTA 280
CCC No./N° CCC - FMS No./N° VME

15	Programmable measurement and logging intervals in the range of minutes.	
16	Captures at least 50 harmonics for voltage and current measurements.	
17	Capability of recording waveforms of voltages and currents.	
18	Capability of triggering waveform recording.	
19	Includes at least 2 digital inputs.	
20	Capability of time synchronization, for example GPS, NTP or SNTP.	
21	Physical interface: Includes Ethernet RJ45 port.	
22	Protocol: Includes Ethernet TCP/IP.	
23	Includes an embedded web server (HTTP or HTTPS).	
24	Capability of retrieving data remotely.	

ANNEX« D » POINT RATED TECHNICAL CRITERIA

General Characteristics and Measurements:

1. Logging memory size > 250 MB.
2. Measurement and logging intervals ≤ 2 minutes.
3. Capability of programmable potential transformer (PT) ratio.
4. Current input sensor compatibility:
 - a. 5 A current transformer (CT)
 - b. 333 mV CT
 - c. Rogowski coil
5. Includes a display panel on the power meter.

Power quality:

6. Measurement errors:
 - a. Line-to-neutral and line-to-line voltages $\leq 0.5\%$
 - b. Line current $\leq 0.5\%$
 - c. Active power or energy $\leq 0.5\%$
 - d. Reactive power or energy $\leq 0.5\%$
 - e. Apparent power or energy $\leq 0.5\%$
 - f. Power factor $\leq 0.5\%$
 - g. Frequency $\leq \pm 0.05$ Hz
 - h. Total harmonic distortion $\leq 1\%$
7. Detection of:
 - a. Voltage sags/swells.
 - b. Subcycle transients.
8. Calculation of:
 - a. Crest factor.
 - b. K (form) factor.
9. Measures more than 50 voltage and current harmonics.
10. Measurement sampling ≥ 128 samples per cycle.

Communication:

11. Includes physical interfaces:
 - a. RS 485 serial port
 - b. Wi-Fi capability
 - c. Fiber optic port
 - d. Cellular interface
12. Includes protocols:
 - a. Modbus serial
 - b. Modbus Ethernet
 - c. IEC 61850
 - d. DNP 3.0
13. Satisfies TLS 1.0 or higher version.

Inputs and Outputs:

14. Capability to trigger waveform recording using digital inputs.
15. Includes the following ports:
 - a. Digital outputs ≥ 2 ports
 - b. Analog input ≥ 1 port
 - c. Analog output ≥ 1 port
 - d. Relay output ≥ 1 port

Software Drivers:

16. Includes software drivers for:
 - a. Schneider EcoStruxure Platform
 - b. PcVue HMI/SCADA
 - c. OSIsoft PI System

Table of point rated criteria

#	Criteria	Evaluation Method	Reference Please specify where these point rated technical criteria are demonstrated within your technical bid (pages # and/or sections # and/or the document's title).	Points / Max
General Characteristics and Measurements				/20
1	Logging memory size in MB	1 pt: 250 < memory ≤ 750 2 pts: 750 < memory ≤ 1250 3 pts: 1250 < memory ≤ 2000 4 pts: 2000 < memory		/4
2	Measurement and logging intervals in minutes.	1 pt: 1 < interval ≤ 2 2 pts: 0.5 < interval ≤ 1 3 pts: interval ≤ 0.5		/3
3	Capability of programmable PT ratio.	2 pts: programmable PT ratio		/2
4	Current input sensor compatibility:	The sum of: a. 2 pts: 5 A CT b. 2 pts: 333 mV CT c. 2 pts: Rogowski coil		/6
5	Includes a display panel on the power meter.	5 pts: display panel		/5
Power Quality				/20
6	Measurement errors:			
	a. Line-to-neutral and line-to-line voltages	0.5 pts: 0.2% < error ≤ 0.5% 1.0 pts: 0.1% < error ≤ 0.2% 1.5 pts: error ≤ 0.1%		/1.5
	b. Line current	0.5 pts: 0.2% < error ≤ 0.5% 1.0 pts: 0.1% < error ≤ 0.2% 1.5 pts: error ≤ 0.1%		/1.5
	c. Active power or energy	0.5 pts: 0.2% < error ≤ 0.5% 1.0 pts: 0.1% < error ≤ 0.2% 1.5 pts: error ≤ 0.1%		/1.5

	d. Reactive power or energy	0.5 pts: $0.2\% < \text{error} \leq 0.5\%$ 1.0 pts: $0.1\% < \text{error} \leq 0.2\%$ 1.5 pts: $\text{error} \leq 0.1\%$		/1.5
	e. Apparent power or energy	0.5 pts: $0.2\% < \text{error} \leq 0.5\%$ 1.0 pts: $0.1\% < \text{error} \leq 0.2\%$ 1.5 pts: $\text{error} \leq 0.1\%$		/1.5
	f. Power factor	0.5 pts: $0.2\% < \text{error} \leq 0.5\%$ 1.0 pts: $0.1\% < \text{error} \leq 0.2\%$ 1.5 pts: $\text{error} \leq 0.1\%$		/1.5
	g. Frequency in Hz	0.5 pts: $\pm 0.025 < \text{error} \leq \pm 0.05$ 1.0 pts: $\pm 0.01 < \text{error} \leq \pm 0.025$ 1.5 pts: $\text{error} \leq \pm 0.01$		/1.5
	h. Total harmonic distortion	0.5 pts: $0.5\% < \text{error} \leq 1.0\%$ 1.0 pts: $0.2\% < \text{error} \leq 0.5\%$ 1.5 pts: $\text{error} \leq 0.2\%$		/1.5
7	Detection of:	The sum of: a. 1 pt: voltage sags/swells b. 1 pt: subcycle transients		/2
8	Calculation of:	The sum of: a. 1 pt: crest factor b. 1 pt: K (form) factor		/2
9	Number of voltage and current harmonics.	1.0 pts: $50 \leq \text{harmonics} < 100$ 1.5 pts: $100 \leq \text{harmonics} < 200$ 2.0 pts: $\text{harmonics} \geq 200$		/2
10	Measurement sampling in samples per cycle.	1.0 pts: $128 \leq \text{sampling} < 256$ 1.5 pts: $256 \leq \text{sampling} < 512$ 2.0 pts: $\text{sampling} \geq 512$		/2
Communication				/15
11	Includes physical interface:	The sum of: a. 2 pts: RS 485 serial port b. 2 pts: Wi-Fi capability c. 1 pt: Fiber optic port d. 1 pt: Cellular interface		/6

12	Includes protocols:	The sum of: a. 1 pt: Modbus serial b. 1 pt: Modbus Ethernet c. 1 pt: IEC 61850 d. 1 pt: DNP 3.0		/4
13	Satisfies TLS 1.0 or higher version.	1 pt: Version 1.0 • 3 pts: Version 1.1 • 4 pts: Version 1.2 • 5 pts: Version 1.3 •		/5
Inputs and Outputs				/10
14	Can trigger waveform recording using digital inputs	• 4 pts: trigger capability		/4
15	Includes the following ports:	The sum of: a. 1.5 pts: Digital outputs ≥ 2 b. 1.5 pts: Analog inputs ≥ 1 c. 1.5 pts: Analog outputs ≥ 1 d. 1.5 pts: Relay outputs ≥ 1		/6
Software Drivers				/5
16	Includes software drivers for:	The sum of: a. 2 pts: Schneider EcoStruxure b. 2 pts: PcVue HMI/SCADA c. 1 pt: OSIsoft PI System		/5
Total Points				/70