



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Réception des soumissions - TPSGC / Bid Receiving - PWGSC

Voir dans le document/

See herein

NA

Québec

NA

**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

TPSGC/PWGSC
601-1550, Avenue d'Estimauville
Québec
Québec
G1J 0C7

Title - Sujet North Warning System Hybrid Power North Warning System Hybrid Power System	
Solicitation No. - N° de l'invitation 23332-220150/A	Amendment No. - N° modif. 003
Client Reference No. - N° de référence du client 23332-22-0150	Date 2022-01-31
GETS Reference No. - N° de référence de SEAG PW-\$QCL-056-18266	
File No. - N° de dossier MTA-1-44079 (056)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Standard Time EST on - le 2022-03-04 Heure Normale du l'Est HNE	
F.O.B. - F.A.B.	
Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Mohammed-Azizi, Samia	Buyer Id - Id de l'acheteur qcl056
Telephone No. - N° de téléphone (418) 576-9803 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	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

AMENDMENT 003

The purpose of this amendment is to modify the basis of payment and answer industry questions.

AMENDMENTS:

DELETE:

Annex C – Basis of payment

INSERT:

Annex C – Basis of payment – Revised (2022-01-31) attached.

ANSWERS TO INDUSTRY QUESTIONS

Enquiries - Bid Solicitation

To ensure consistency and quality of information provided to bidders, significant enquiries received and the replies to such enquiries will be provided simultaneously to bidders to which the bid solicitation has been sent, without revealing the sources of the enquiries.

Here are the questions which we have received until now:

Question 1	5.4 A includes the generator set so based on this we presume that the two generator sets will be located in the building. Please confirm.
Answer 1	Correct. The two generator sets will be located inside a conditioned building at the CanmetENERGY-Varenes laboratory. It is not intended to deploy the generators to the North Bay site.
Question 2	5.4.A Also includes enclosures. Please verify what this enclosure is for.
Answer 2	Enclosure refers to any necessary electrical cabinets to make the system safe. It also includes steel skid bases to facilitate transport. Any required enclosures will not be installed outdoors.
Question 3.A	With the package being installed indoors please provide: A. Details of space where the equipment is to be located.
Answer 3.A	<i>CanmetENERGY-Varenes</i> - Containerized enclosure is being constructed. Space will be open. <i>North Bay Site</i> - Package will be installed in an open space which houses the diesel generators and switchgear. - Dimensions of the system were identified based on clearances to deliver the

	modules to the intended part in the building.
Question 3.B	B. Any access and space clearances.
Answer 3.B	<p><i>CanmetENERGY-Varenes</i></p> <ul style="list-style-type: none"> - No access issues. Enclosure will be at ground level. A paved access road is planned to facilitate the delivery and installation of the package. - Respecting the maximum component dimensions in the RFP will ensure the system can be installed in the containerized enclosure. <p><i>North Bay Site</i></p> <ul style="list-style-type: none"> - Access is through two 8 ft high x 4 ft wide doors. There is an elevator/lift to assist with bringing any heavy equipment from the ground level. - Components must then be transported through the building with two 7 ft high and 3 ft wide double doors being the largest restriction. - Additional details can be found during the eventual site visit and discussions with the onsite contractor and project team.
Question 3.C	C. Distance to the fuel bulk tank? Is there a fuel transfer system at site to fill in the generator day tank?
Answer 3.C	<p><i>CanmetENERGY-Varenes</i></p> <ul style="list-style-type: none"> - Bulk tank is located beside the containerized enclosure (less than 6m – 10 ft). It is a day tank and it is intended to be used to manually fill the diesel generators. If CanmetENERGY decides to connect the diesel generator directly to the bulk tank, it will be CanmetENERGY's responsibility. Generator must therefore have a feature to provide bulk tank connectivity instead of drawing from the integral or sub-base fuel tank. <p><i>North Bay Site</i></p> <ul style="list-style-type: none"> - There is a fuel transfer system at site to fill the generator day tank from the bulk fuel tank. Distance of the bulk fuel tank to the day tank is 50 m approximately. - It should be noted that it is not planned to use the diesel generators provided in the package at the North Bay site. It will be the responsibility of CanmetENERGY to install the diesel generators of the hybrid microgrid system if it decided to deploy the respective generators at the North Bay site.
Question 3.D	D. Distance and location to the existing switchgear at site
Answer 3.D	<p><i>CanmetENERGY-Varenes</i></p> <ul style="list-style-type: none"> - A programmable load bank will be located close to the containerized enclosure. The load bank will be connected to an electrical disconnect switch inside the containerized enclosure. The disconnect switch is to be connected to the low voltage power system to be included with the package. Electrical connection to the

	<p>disconnect switch is to be done by the Contractor. Maximum distance of the disconnect switch to the low voltage power system is approximately 6.0 m (20 ft).</p> <p><i>North Bay Site</i></p> <ul style="list-style-type: none"> - Switchgear is located close to the existing diesel generators. Approximate distance to the planned location of the BESS is approximately 15 m (50 ft). Exact distance would be confirmed during the site visit and discussions with the onsite contractor and project team.
Question 3.E	E. Space drawings and electrical single line diagram required.
Answer 3.E	<p><i>CanmetENERGY-Varenes</i></p> <ul style="list-style-type: none"> - Could be provided to the Contractor upon request, after contract award <p><i>North Bay Site</i></p> <ul style="list-style-type: none"> - Drawing packages and electrical single line diagram could be provided to the Contractor upon request and availability, after contract award.
Question 4	For option B2 a microgrid controller is to be provided. Please provide details on all the energy sources and load that the micro grid controller has to manage including their communication protocols and quantities make/model of any dc/inverters.
Answer 4	<p>Communication protocol of MODBUS TCP is being used.</p> <p>Distributed Energy Resources (DER) to be included are:</p> <ul style="list-style-type: none"> - One (1) 80 kW Variable Speed Generator - One (1) 10 kW Photo-voltaics - One (1) Battery Energy Storage System to be supplied by the vendor - Two (2) Manual Transfer switches with the flexibility to connect the main bus and/or the PV system to the grid - One (1) 125 kVA Programmable RLC Load Bank <p>Please note the following about the PV system</p> <ol style="list-style-type: none"> a. One central inverter is used for the new PV system (see attached schematic) b. The inverter is Fronius Symo inverter c. 1 kVA, circuit breaker of 40 Amps supplied by the PV Supplier <p>A draft copy of the power and control schematic could be provided to the Contractor upon request, if required.</p>
Question 5	<i>Solar PV Module DC/AC inverter (Supplied by others)</i>

Answer 5	Under footnote 6 we have indicated that the intention will be that CanmetENERGY will work with the Contractor to integrate the solar photo-voltaic panels to the system.
Question 5.A	A. Number of inverters used.
Answer 5.A	<p>We have indicated that we would like to integrate three or more renewable energy sources. At a minimum, three inverters should be assumed.</p> <p>For more flexibility and eventual reliability of the system when deployed, the use of microinverters for every two modules would be a best case scenario. This would result in 150 microinverters for a hypothetical 120 kW system with 400 W bi-facial PV panels.</p> <p>The vendor should describe the capability of the microgrid control platform to be flexible in adding additional inverter control signals beyond the minimum three (as required) in describing the key system components in C8.</p> <p>The RFP Basis of Payment has also been updated to include an option for additional device management point to increase the number of renewable energy sources the microgrid controller needs to manage.</p>
Question 5.B	B. Make and model of inverter.
Answer 5.B	Unknown at this point. The intention is to coordinate with the Contractor to determine which inverter or DC-AC converter is suitable for the microgrid controller.
Question 5.C	C. KA rating of the PV system for sizing the circuit breakers.
Answer 5.C	The KA rating should be calculated by the vendor for the anticipated 40 kW/50kVA power input. The PV system is comprised of one-hundred (100) 400 W bi-facial PV panels (Stace STADM G395B6-144HST).
Question 5.D	D. Communication protocol used by the inverter – Information is required as the microgrid controller will interphase with this.
Answer 5.D	Inverter is to be determined and selected with the Contractor to ensure it is compatible with the proposed microgrid controller.
Question 6.A	<p><i>Battery Energy Storage Systems</i></p> <p>A. Peak power of 180 kW is desired. Please indicate the duration when this peak power is required.</p>
Answer 6.A	Peak power of 180 kW for 30 minutes is desired.
Question 6.B	B. Please indicate number of times in a day when the peak power of 180 kW will be required.
Answer 6.B	This peak power draw is required only once a day.
Question 7.A	<p><i>Engine controller</i></p> <p>A. The specification states to use Deep Sea controller DSE 7310 MKII. This unit is capable of monitoring the engine performance and mains power failure. Is it the</p>

	<p>expectation that the Deep Sea controller be used for engine monitoring and for synchronizing the two 30 kW generator set requiring additional hardware and software to be used? please confirm.</p>
Answer 7.A	<p><i>CanmetENERGY-Varenes</i></p> <p>To replicate the North Bay Site, it has been requested to include the Deep Sea Controller 7310 MKII as an engine controller with the diesel generators to ensure that it can communicate with the microgrid controller. As we have not required the Controllogix Platform to replicate the plant controller, the DSE 8610 MKII can be used to synchronize the generators.</p> <p><i>North Bay Site</i></p> <p>The Deep Sea Controller DSE 7310 MKII is implemented to monitor engine performance and mains power failure. They are used as the engine controller. It is intended that the Controllogix platform, will ensure the generators can be synchronized operating as the plant controller. Additions to the Controllogix Platform would be identified during the engineering study and discussed with the onsite contractor and the project team. CanmetENERGY would be responsible for incorporating any necessary upgrades to ensure the generators can be synchronized for the hybrid power system deployment.</p> <p>The Controllogix platform must be maintained as it has been integrated to do the remote monitoring of the site.</p>
Question 7.B	<p>B. Deep Sea Controller 8610 MKII is capable of performing the engine monitoring and synchronizing the generator sets. Can this be considered in lieu of the DSE 7310 MKII? Please advise.</p>
Answer 7.B	<p>For the CanmetENERGY, the Deep Sea Controller 8610 MKII can be considered if it is to be used as the synchronization mechanism for the generators in the Hybrid Power System. It should be noted that the Hybrid Microgrid System must interface with the Controllogix platform the North Bay Site. Use of the Deep Sea Controller 8610 MKII should be indicated in the proposal ID C8 – System Concept, Design and Development.</p> <p>For the North Bay Site, the Deep Sea Controller 8610 MKII should not be required as it is only the engine controller. The Controllogix Platform is the plant controller, which should have the synchronization capability (for example the Combination Generator Control Module). Capability is to be confirmed during the engineering study and CanmetENERGY will be responsible for the upgrade if required.</p>
Question 8.A	<p><i>Distribution panel</i></p> <p>A. Please advise the KA rating of the distribution panel.</p>
Answer 8.A	<p>The KA rating of the circuit breakers in the distribution panel (section 4.6 low voltage power supply) should be calculated by the vendor.</p> <p>The circuit breaker for the grid connection at the North Bay Site has a KA rating of 25 @ 600 V.</p>

N° de l'invitation - Solicitation No.
23332-220150/A
N° de réf. du client - Client Ref. No.
23332-22-0150

N° de la modif - Amd. No.
003
File No. - N° du dossier
MTA-1-44079

Id de l'acheteur - Buyer ID
QCL056
N° CCC / CCC No./ N° VME - FMS

Question 8.B	B. Please advise the control power supply voltage and if it is already available at site and can be tapped into.
Answer 8.B	<p><i>North Bay Site and CanmetENERGY-Varennnes</i></p> <p>The hybrid microgrid system is standalone and not connected to the grid. Thus the control power supply voltage should be established at the low voltage distribution panel to facilitate installation.</p> <p>Alternative locations to tap the supply voltage at the North Bay site would be determined during the site visit and engineering study and agreed upon by the onsite contractor and project team.</p> <p><i>NRC Site (Option B)</i></p> <p>A dedicated power supply of 208V/120V will be supplied for all auxiliaries.</p>

****ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME****

ANNEX "B" - BASIS OF PAYMENT – REVISED (2022-01-31)

TABLE 1 : DELIVERABLE 5A: HYBRID POWER SYSTEM

Item #	Description	Quantity	Unit	Total Firm Price
5.1	Engineering and Transient Protection Study for North Bay SRD site	1	EA	_____ \$
5.2	Project Plan - Overall system design - Identification and description of key hybrid microgrid system components Work breakdown structure	1	EA	_____ \$
5.3	System Design and Engineering Drawings - Architectural - Mechanical - Electrical - Controls & Instrumentation	1	EA	_____ \$
5.4.a	Procurement of Main Hybrid Power System Components - Diesel generator - Battery energy storage system (BESS) - 4 Quadrant BESS inverter - Microgrid controller - Low voltage power supply/distribution - Enclosures	1	EA	_____ \$
5.4.b	Hybrid Power System Programming and Build	1	EA	_____ \$
5.5	Factory Acceptance Test	1	EA	_____ \$
5.6	Witness Test	1	EA	_____ \$
5.7	Recovery Response Test	1	EA	_____ \$
5.8	Delivery, Installation , Assembly and Commissioning of HMS at CanmetENERGY in Varennes, QC including onsite training for system operation DDP (Varennes, QC, Canada) including customs duties, handling and the delivery	1	EA	_____ \$
5.9	Manuals, software, parts list and critical maintenance	1	EA	_____ \$
5.10	Assembly, Installation and Commissioning of HMS at North Bay, SRD site including onsite training for system operation	1	EA	_____ \$
TOTAL Bid Evaluation Price for Table 1 in CAD excluding Applicable Sales Taxes				_____ \$

Solicitation No. - N° de l'invitation
23332-220150/A
Client Ref. No. - N° de réf. du client
23332-22-0150

Amd. No. - N° de la modif.
File No. - N° du dossier
MTA-1-44079

Buyer ID - Id de l'acheteur
QCL056
CCC No./N° CCC - FMS No./N° VME

TABLE 2: DELIVERABLE 5A - 5.11 TECHNICAL SUPPORT

Firm all-inclusive hourly rate (excluding applicable taxes and including profit and administration fees for each year of the contract period).

Estimated effort: 50 hours per year

Periods	Hourly Rates
Year 1 <i>Upon complete and certified delivery of deliverable 6.10 until March 31, 2023</i>	_____ \$
Year 2 <i>From April 1, 2023 to March, 31 2024</i>	_____ \$
Year 3 (option) <i>From April 1, 2024 to March, 31 2025</i>	_____ \$
Year 4 (option) <i>From April 1, 2025 to March, 31 2026</i>	_____ \$
Year 5 (option) <i>From April 1, 2026 until the end of the contract</i>	_____ \$
TOTAL Bid Evaluation Price for Table 2 in CAD excluding Applicable Sales Taxes:	_____ \$

TRAVEL AND LIVING EXPENSES – 5.11 TECHNICAL SUPPORT:

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, and private vehicle allowances specified in Appendices B, C and D of the [National Joint Council Travel Directive](#), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees". Canada will not pay the Contractor any incidental expense allowance for authorized travel.

All travel must have the prior authorization of the Project Authority.

All payments are subject to government audit.

LIMITATION OF EXPENDITURES FOR DELIVERABLE 5.11 TECHNICAL SUPPORT (excluding applicable sales taxes) : _____ \$ *(to be completed by PWSGC at contract award)*

TABLE 3: DELIVERABLE 5B: OPTIONAL GOODS

Item #	Description	Quantity	Unit	Firm Unit Price	Total Firm Price
B.1	System Design and Engineering Drawings - Architectural - Mechanical - Electrical - Controls & Instrumentation	1	EA	_____ \$	_____ \$
B.2	Procurement of Battery Energy Storage System and Microgrid Controller - Battery Energy Storage System - 4 Quadrant Inverter - Microgrid Controller	1	EA	_____ \$	_____ \$
B.3	BESS Programming and Build	1	EA	_____ \$	_____ \$
B.4	Factory acceptance test	1	EA	_____ \$	_____ \$
B.5	Witness Test	1	EA	_____ \$	_____ \$
B.6	Failure and recovery response tests	1	EA	_____ \$	_____ \$
B.7	Delivery, Assembly and Commissioning System at National Research Council in Vancouver including onsite training for system operation DDP (Vancouver, BC, Canada), including customs duties, handling and the delivery	1	EA	_____ \$	_____ \$
B.8	Manuals, software, parts list and critical maintenance	1	EA	_____ \$	_____ \$
TOTAL Bid Evaluation Price for Table 3 in CAD excluding Applicable Sales Taxes:					_____ \$

TABLE 4: OPTIONAL GOODS

Item #	Description	Quantity	Unit	Firm Unit Price	Total Firm Price
1	Additional device management point Additional number of renewable energy sources the microgrid controller needs to manage. Maximum of 400 sources.	1	EACH	_____ \$	_____ \$
TOTAL Bid Evaluation Price for Table 4 in CAD excluding Applicable Sales Taxes:					_____ \$