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1713 Bedford Row  
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B3J 1T3  
Halifax  
Bid Fax: (902) 496-5016

**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**  
Atlantic Region Acquisitions/Région de l'Atlantique  
Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.E.)  
B3J 3C9  
Halifax  
Nova Scot

<b>Title - Sujet</b> Construction - BIO Energy Center	
<b>Solicitation No. - N° de l'invitation</b> EB144-170694/A	<b>Amendment No. - N° modif.</b> 005
<b>Client Reference No. - N° de référence du client</b> EB144-17-0694	<b>Date</b> 2016-10-03
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$PWA-110-5461	
<b>File No. - N° de dossier</b> PWA-6-76047 (110)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2016-10-11</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Daylight Saving Time ADT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Collier (PWA), Susan	<b>Buyer Id - Id de l'acheteur</b> pwa110
<b>Telephone No. - N° de téléphone</b> (902) 496-5350 ( )	<b>FAX No. - N° de FAX</b> (902) 496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

Amendment 005 is being raised to incorporate an addendum and to answer questions from potential bidders:

Due to the technical nature of this amendment all questions and answers will be posted in English only.

## **ADDENDUM**

### **ELECTRICAL SPECIFICATION:**

#### **1. Reference Electrical Design Specification Section 26 32 13:**

1. Add new item 1.7.2 to read the following:
  - Manufacturer shall have an established network of factory-direct service technicians capable of servicing the equipment.
2. Add new item 1.7.3 to read the following:
  - Manufacturer's field service representatives shall be on call and available for immediate dispatch 24 hours a day, 365 days a year. All field service personnel shall be factory trained, by the manufacturer, and certified in the maintenance and repair of the specified equipment.
3. Change item 2.1.1.5 to read the following:
  - This contractor shall review the site conditions for overall installation method(s).
4. Change item 2.1.1.6 to read the following:
  - The electrical contractor shall be responsible for removing the existing generator sets (complete existing assembly). Once removed, the generator sets become the property of this contractor and shall be stored off site immediately. The electrical contractor shall be responsible for all transportation costs.

#### **2. Reference Electrical Design Specification Section 26 36 23:**

1. Add new item 2.12 Warranty.
2. Add new item 2.12.1 to read the following:
  - Manufacturer shall warrant the equipment for a minimum of 24 months from date of shipment subject to terms and conditions of manufacturer's current warranty publication.
3. Add new item 2.12.2 to read the following:

- Manufacturer's field service representatives shall be on call and available for immediate dispatch 24 hours a day, 365 days a year. All field service personnel shall be factory trained, by the manufacturer, and certified in the maintenance and repair of the specified equipment.

**ELECTRICAL DRAWINGS:**

**3. Reference Electrical Drawing E-101:**

5. Add wording to electrical note #18:

"Allow for 25m distance for redundant circuitry to be removed."

**4. Reference Electrical Drawing E-103:**

1. Add wording to electrical notes #9, #10, #11 & #12:

"Allow for 25m distance for redundant circuitry to be removed."

**5. Reference Electrical Drawing E-105:**

1. Add wording to electrical note #4:

"Allow for 25m distance for redundant circuitry to be removed."

**6. Reference Electrical Drawing E-106:**

1. Add wording to electrical notes #2, #4 & #5:

"Allow for 25m distance for redundant circuitry to be removed."

**7. Reference Electrical Drawing E-108:**

1. Add wording to electrical notes #3, #4, #5 & #8:

"Allow for 25m distance for redundant circuitry to be removed."

**8. Reference Electrical Drawing E-109:**

1. Add wording to electrical notes #1, #2, #3 & #4:

“Allow for 25m distance for redundant circuitry to be removed.”

## **END OF ADDENDUM**

### **Questions from potential bidders:**

#### Question 1:

In accordance with your response and the addendum # 2, I include the following clarifications and request again that Madsen Power Systems be added as an approved manufacturer for the diesel generator

1. CSA approval. The alternator, controller, circuit breaker and all of the components of the generator carry CSA or equivalent certifications. After the complete assembly is built QPS will certify that the complete assembly is compliant with appropriate CSA standards and apply a label accordingly.
2. QPS will also certify the generators power rating, stability, voltage and frequency regulation
3. The circuit breaker is compliant with section 26 32 13 item 2.3.2 (100% rated, LSIG trip device, auxiliary position contacts, 24Vdc shunt trip, lockout kit, and 18KA interrupting capacity (actually 25kA level which exceeds specification) attached is a catalogue sheet with the appropriate accessories identified.
4. The control panel is fully compatible with the specified paralleling switchgear. The unit mounted control panel on our units are Woodward EasyGen's. The ASCO 4000 series switchgear uses Woodward DSLC II synchronizer and load sharing equipment and being from the same manufacturer ensures compatibility.
5. Maximum fuel consumption for each generator under 100% meets and exceed specifications with a value of only 240 L/hr. See the generator catalogue sheet attached with the fuel consumption highlighted.
6. Maximum dimensions of the Madsen Power Systems unit is less than the maximum dimensions as specified. See the attached specification sheet as confirmation as well as cad drawings

7. Generator main circuit breaker is installed on the generator on the right hand side when looking at the rear of the generator which is in compliance with the location as detailed on drawing E101 new power layout. See the attached top view as confirmation
8. When I submitted my request for approval I had indicated that I was working with MAN and a radiator manufacturer to be able to provide a radiator/fan combination that could comply with the air flow that was specified. I had requested that my request for approval be conditional on my ability to meet this required air flow as I felt it would take a few days to confirm whether I had a solution or not. If I could not find a solution then I would be compliant and unable to bid.

I am pleased to say that I can provide a radiator/fan combination that will allow me to stay within the allowable cooling air flow. In fact the cooling air flow that I require is only 27,000 cfm so this is now no longer a concern. I am still able to stay within the fuel consumption limits and the dimension limits with this alternative radiator/fan combination.

9. The wiring diagram submitted with my request for approval for the paralleling switchgear details the cabling requirements from the diesel generator to the switchgear which will be the same regardless of whether the paralleling switchgear is Madsen Power Systems or ASCO or other. I've attached it here again for clarity. With respect to the AC output from the generator to the switchgear likewise this will be the same regardless of the generator or the switchgear
10. With respect to the warranty the original specification did not specify that the warranty had to include parts and labour for the 5 years. The warranty details I submitted is a basic 5 year extended warranty and this is in keeping with the same warranty policies as other generator manufacturers in the industry (Kohler and MTU Onsite Energy in particular) the addendum has provided clarification to this detail so I can offer a 5 year comprehensive warranty which does extend parts and labour for the full 5 years. I've attached a copy of the comprehensive warranty to illustrate this compliance.

**Answer 1:**

The alternate product submitted does not appear to be a factory assembled and certified product and would therefore not be in compliance with the specification.

The generator assembly (as a complete unit) shall bear a CSA Certificate of Compliance from the factory. The official CSA Certificate of Compliance including Certificate Number shall be submitted before tender question closing. The CSA Certificate of Compliance shall be for the generator assembly with the alternate radiator/fan combination proposed by this supplier.

Furthermore, the Madsen product cannot be considered unless a factory Prototype Test Supported Certification can be provided before tender question closing indicating that the generator assembly, as proposed with the 27,000 CFM fan, has been tested at the factory and is capable of providing the type

of reliability and performance expected of an emergency system responsible for supporting life safety systems.

The Departmental Representative cannot approve this alternate product.

Question 2:

I've attached some additional information as required for the review and approval for the paralleling switchgear.

1. CSA approval – The switchgear is from GE and is CSA and/or cUL approved. The paralleling controls including the Woodward EasyGens, the GE PLC the Advantech HMI and all other components each carry their own CSA, cUL or equivalent designation. The entire assembly once completed will be inspected by QPS and labelled indicating CSA compliance prior to shipment to site.
2. The entire paralleling switchgear will carry an 18 month warranty in compliance with specification section 26 24 13 item 1.5.1. This warranty will be executed by Madsen Power Systems and supported by the manufacturers of the components installed in the complete assembly.
3. Madsen Power Systems has field service representatives located in several locations throughout Eastern Canada including Ontario, Nova Scotia, and Newfoundland. These technicians are factory trained and continually undergo regular update training related to product development and improvements. These technicians are available 24 hours a day 365 days a year and are dispatched regularly throughout Eastern Canada
4. The paralleling switchgear will be one complete electrical equipment consisting of section 1 and 2 for master controls, generator 1 and 2 paralleling and unit controls and generator 1 and 2 electrically operated breakers. Section 3 will be for power distribution and metering and section 4 will be a space for future distribution. See the attached elevation drawing submitted for this project.
5. The paralleling switchgear is compatible with any and all generator manufacturer control panel and generator combinations. These would include Caterpillar, Cummins, Kohler, MTU Onsite Energy, Generac, Madsen Power Systems, Himoina, AKSA, and any other manufacturer that you can think of. The Woodward EasyGen 3000 at the heart of the paralleling system controls for the Madsen Power Systems paralleling switchgear is very open architecture and is designed and intended to be compatible with any engine manufacturer. Madsen has completed several projects where we have supplied paralleling switchgear that have integrated with Caterpillar, Kohler and MTU generator controls successfully.

6. With respect to section 3 for power distribution our intention is to supply and install NEW GE circuit breakers than attempt to reuse the existing Eaton/Cutler Hammer circuit breakers. We think there would be an overall cost savings of supplying new breakers installed and tested in a factory setting of the same manufacturer of the manufacturer of the switchgear cabinetry than trying to fit competitive circuit breakers that are existing and would have to be fitted in the field. New circuit breakers fitted in the factory then ensures warranty covers these new breakers and the entire assembly is CSA certified with field inspections. I can't imagine supplying new breakers in lieu of reusing the old ones would be something that would not be acceptable to the owner and engineer.
7. The circuit breakers for section 7 will be installed in the same order as shown on drawing E102 detail 3 to permit reusing of existing cables without having to splice.
8. The elevation drawing is attached detailing the various sections including the master controls, generator 1 and 2 controls, generator 1 and 2 breakers, the distribution breakers, and the spare cell for future.
9. A single line and controls diagrams are also attached. The single line would be the same as that prepared by the engineer for tender and the single line is in fact dictated to us by the engineer rather than the other way around and as such we need to follow the single line that the engineer has designed . The control wiring is pretty much the same as that prepared and submitted by the engineer. There are some minor changes that only simplify the installation and should reduce costs. In particular the redundant battery chargers will be unit mounted on the generator sets. The alarm outputs from the battery chargers would be wired to the generator control panel. The 24Vdc to the generator control panel will be wired from the starting batteries which would also be unit mounted. The 24Vdc output from the battery chargers to the starting batteries would be internally wired on the generator set including the battery selector switch. Likewise the Bacnet convertors for the digital meter and switchgear control we propose to install inside the switchgear master control section rather than in a separately mounted cabinet. This to us only makes sense. The Bacnet convertor for ATS # 6 will be the responsibility of ASCO and if they cannot supply and install it mounted inside the ATS then it could be in a separate panel but either option will be suitable to us.

If Madsen Power Systems are successful in securing the order to supply the diesel generators AND the paralleling switchgear then the interconnecting wiring between the generator control panels and the generator sections in the paralleling switchgear could be even further simplified as the diesel generator control panels will be using Woodward EasyGen control panels and the paralleling switchgear would likewise be using Woodward EasyGen control panels which include synchronizing. This means that the Woodward panels can talk to each other very easily with no conversion of communication protocols and minimal individual contact inputs/outputs. This is something to be reviewed during shop drawing preparation and review and can be discussed in further detail then. For the purposes of tendering it is best to leave the control wiring as

designed by the engineer as it could only possibly get simpler and lower cost rather than any additional cost.

Answer 2:

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The following information wasn't confirmed/submitted by the paralleling switchgear manufacture:

1. Confirmation and submission of official manufacturer's documentation illustrating that the digital paralleling control system is capable to provide load management up to 12 ATS as stated in specification section 26 24 13 item 2.8.3.8.
2. Confirmation and submission of official manufacturer's documentation illustrating that the switchgear touch screen panel is capable to display one-line diagram (single line diagram) representing power flow and sources and emergency power system elements as stated in specification section 26 24 13 item 2.6.3.
3. Confirmation and submission of official manufacturer's documentation illustrating that the switchgear touch screen panel is capable to display all existing and new ATS(s) present states and positions (normal mode, emergency mode, etc.) as stated in specification section 26 24 13 item 2.6.4.5
4. Confirmation and submission of official manufacturer's documentation illustrating that a manual paralleling controls will be provided as stated in section 26 24 13 item 2.5.1.3.
5. Confirmation that a digital meter PowerLogic PM8000 series will be provided as sated in specification section 26 09 23.01 item 2.2.1. Existing metering at the BIO campus is PowerLogic technology.
6. Provision of official manufacturer documentation from the paralleling switchgear manufacturer illustrating the following: A chart of compatibility with engine generator control compatibility information. Please refer to specification section 26 32 13 Appendix A.
7. Confirmation that the switchgear Bussing interrupting capacity is 50 Kaic and copper as per SLD on dwg E-102 and section 26 24 13 item 2.2.2.

The Departmental Representative cannot approve this alternate product.

Question 3:

Drawing E-101, Note 18 - Provide location of existing Panel(s) feeding heaters.

Drawing E-103 , Note 9 - Provide location of existing Panel(s) feeding heaters.

Note 10 - Provide location of existing Panel feeding 2nd Level VAV Control Panel.

Note 11 - Provide location of existing Panel(s) feeding heaters.

Note 12 - Provide location of existing Panel feeding 4th Level VAV Control Panel.

Drawing E-105 , Note 4 - Provide location of existing Panel(s) feeding heaters.

Drawing E-106 , Note 2 - Provide location of existing Panel feeding BAS Control Panel.

Note 4 - Provide location of existing Panel feeding BAS Control Panel.

Note 5 - Provide location of existing Panel feeding heater.

Drawing E-108 , Note 3 - Provide location of existing Panel feeding BAS Control Panel.

Note 4 - Provide location of existing Panel feeding BAS Control Panel.

Note 5 - Provide location of existing Panel feeding heater.

Note 8 - Provide location of existing Panel feeding heater.

Drawing E-109 , Note 1 - Provide location of existing Panel(s) feeding heaters.

Note 2 - Provide location of existing Panel feeding VAV Control Panel.

Note 3 - Provide location of existing Panel feeding heater.

Note 4 - Provide location of existing Panel feeding VAV Control Panel.

Answer 3:

Refer to the above addendum clarifications.

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Question 4:

Who owns the generators once they are removed?

If they are to be turned over to BIO where are they to be stored?

Who is responsible for transportation cost if required to be stored off site?

Answer 4:

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This contractor is responsible to remove the existing generator sets (complete existing assembly). Once removed, the generators sets become the property of this contractor and shall be stored off site immediately. This Contractor shall be responsible for all transportation cost.

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ALL TERMS AND CONDITIONS REMAIN THE SAME