

**Invitation to Qualify  
for the Procurement Process for  
Energy System Operational Data**

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# Invitation to Qualify for the Procurement Process for Grid-Connected Energy System Operational Data

## 1. General Information

### 1.1. Definitions

The following definitions apply for the purpose of this Invitation to Qualify (ITQ):

- a) **“Device”** refers to the following single or aggregated energy device(s):
  - photovoltaic module,
  - wind turbine,
  - energy storage system,
  - hydroelectric dam,
  - river hydrokinetic generator,
  - marine tidal generator,
  - geothermal electric generator,
  - controllable/flexible electric load:
    - electric vehicle chargers,
    - electric water heater,
    - baseboard electric heater thermostat.
- b) **“Grid Services”** refer to ancillary services or essential reliability services as defined by the North American Electric Reliability Corporation <sup>1</sup> such as, but not limited to:
  - Reactive power / voltage control,
  - Inertia emulation / fast frequency response,
  - Primary frequency response,
  - Automatic generator control (regulation up/down)
- c) **“Energy System”** refers to a system composed of one or more devices that have the potential to provide, or are providing, one or more grid services.
- d) **“Performance data”** refers to time-series based data generated by analog sensors, digital sensors and instrumentations. For example: temperature, pressure, flow rate, power, component state.
- e) **“Contextual data”** refers to data and information related to the energy system, the devices, their operating settings, specifications, and event logs. For example: single line diagram, device model, device ratings, operating modes.
- f) **“Parameter”** refers to performance and contextual data relevant to a particular device.
- g) **“Energy System Operator”** refers to the direct operator or owner of the energy system or services at the ITQ submission date.

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<sup>1</sup> North American Electric Reliability Corporation, “Essential Reliability Services Whitepaper on Sufficiency Guidelines”, 2016.

[https://www.nerc.com/comm/Other/essntlrbltysvcstskfrcl/ERSWG\\_Sufficiency\\_Guideline\\_Report.pdf](https://www.nerc.com/comm/Other/essntlrbltysvcstskfrcl/ERSWG_Sufficiency_Guideline_Report.pdf)

- h) **“Qualified Supplier”** is a Respondent that successfully meets all the mandatory requirements of the ITQ. Only Qualified Suppliers will be invited to participate in any subsequent phases of this procurement process.
- i) **“Respondent”** refers to the organization completing the ITQ and is limited to Energy System Operators for facilities located in Canada.

## 1.2. Introduction

- a) **Purpose of this ITQ:** The purpose of Phase 1 - ITQ is to identify Qualified Suppliers that will be invited to participate in the subsequent Grid-Connected Energy System Operational Data procurement process.
- b) **Phase 1 of Procurement Process:** This ITQ is the first phase of a procurement process led by the National Research Council Canada (NRC) for the Grid-Connected Energy System Operational Data requirement. Respondents are invited to pre-qualify in accordance with the terms and conditions of this ITQ. Only Qualified Suppliers will be permitted to participate and bid on any subsequent solicitation issued as part of this procurement process.
- c) **Further Evaluation of Qualified Suppliers:** Even though certain Respondents may be pre-qualified by Canada as a result of this ITQ, Canada reserves the right to re-evaluate an aspect of the qualification of any Qualified Supplier at any time during the procurement process.
- d) **Additional Qualified Suppliers:** Canada may, at its sole discretion, re-open Phase 1 – ITQ.
- e) **ITQ is not a Bid Solicitation:** This ITQ process is not a solicitation of bids or tenders. No contract will be awarded as a result of the activities during the ITQ Phase. Canada reserves the right to cancel any of the qualification requirements included as part of the Project at any time during the ITQ Phase. The ITQ process may be partially or completely cancelled by Canada and it may not result in any of the subsequent procurement processes described in this document. Respondents and Qualified Suppliers may withdraw from the procurement process at any time. Therefore, Qualified Suppliers can choose not to bid on any subsequent solicitation

## 1.3. Overview of the Project

- a) The requirement consists of providing performance and contextual data for Energy Systems operating in Canada.
- b) Canada will use the data collected to support research, inform programs and policies, build and validate energy system models, publish aggregated results in government reports and publicly available literature, and conduct and publish case studies.
- c) Generally, the objectives of this effort include the following:
  - i. Collect, aggregate and anonymize operational data of Canadian energy systems to address various technical and economic questions from stakeholders including policy makers, regulators, industry, investors, and the general public;
  - ii. Identify challenges related to system design and implementation within national and regional contexts, based on project experiences and/or data and engagement with project proponents;
  - iii. Assess overall cost-benefits of technologies through case studies and analysis, including of
    - a. grid impact of large-scale deployment on the grid;

- b. the potential for, and value of electrical grid services;
  - c. greenhouse gas emission reductions;
  - d. capacity upgrade deferral and infrastructure savings;
  - e. required supports to infrastructure and systems (e.g., new needs for communications services);
  - f. reliability and resiliency changes; and
  - g. levelized cost of energy and/or cost effectiveness.
- iv. develop a better understanding of the capabilities of inverter-based resources and flexible loads in the grid modernization space. Detailed analysis of the operational profiles of such technologies will be instrumental to evaluate both their ability to provide grid services, and the quality of those services, under a wide range of operating scenarios.
  - v. Identify potential technological barriers related to grid services;
  - vi. Identify focus areas/ideas for further research and development to drive innovation;
  - vii. Identify key infrastructure investment areas to achieve grid modernization and net-zero objectives;
  - viii. Estimate regional technology deployment capacity;
  - ix. Establish an advisory committee on data analytics of energy systems which selected qualified suppliers will be invited to join.

#### 1.4. Overview of Anticipated Procurement Process

- a) This ITQ is the first phase in this procurement process. Although the procurement process remains subject to change, Canada currently anticipates that the procurement process will be conducted in the following phases:

**Phase 1 - Invitation to Qualify (ITQ) Phase:** This ITQ will be used to qualify Respondents to participate in any subsequent phases of the procurement process. Canada will publish the list of Qualified Suppliers, including all entities, after the ITQ Phase.

**Phase 2 – Request for Standing Offer (RSO) Phase:** Canada will release RSOs to those Qualified Suppliers who remain qualified at the time RSOs are released. Canada does not guarantee that a Standing Offer will be issued as a result of the pre-qualification process. A Standing Offer will only come into effect with the issuance of a valid call up to the Standing Offer. Canada reserves the right to negotiate directly with a pre-qualified supplier should only one Energy System Operator be capable of providing the services.

- b) Canada will normally make its procurement documents available for download through the Government Electronic Tendering Service (GETS) on <https://canadabuys.canada.ca/>. However, after establishing a list of Qualified Suppliers, Canada will make the procurement documents only available to those Qualified Suppliers, rather than making them available through <https://canadabuys.canada.ca/>.
- c) The estimated timeline for each phase is as follows:

Phase 1 - Invitation to Qualify (ITQ): January 30<sup>th</sup>, 2023 to March 26<sup>th</sup>, 2023

## 2. Instructions for Respondents

### 2.1. Standard Instructions, Clauses and Conditions

The 2003 (2022-03-29) Standard Instructions – Goods or Services – Competitive Requirements, (as amended by this Section 2.1) are incorporated by reference into and form part of the ITQ as though they were expressly set out here in full. If there is a conflict between the provisions of the 2003 Standard Instructions and this document, this document prevails. The 2003 Standard Instructions can be found at:

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/1/2003/26>

- a) The "Invitation to Qualify" is a solicitation of interest, not a request for bids or tenders. There is no bid validity period, since an Invitation to Qualify invites Respondents simply to qualify. Canada will assume that all Respondents wish to qualify unless they withdraw in writing.
- b) Section 01 (2016-04-04) Integrity provisions – bid in the 2003 Standard Instructions is deleted.
- c) Section 04 (2007-11-30) Definition of Bidder in the 2003 Standard Instructions is deleted.
- d) Terminology for Invitation to Qualify:
  - i. the word "*bidder(s)*" in the 2003 Standard Instructions is replaced with the word "*Respondent(s)*";
  - ii. the word "*bid(s)*" in the 2003 Standard Instructions is replaced with the word "*response(s)*";
  - iii. the phrase "*solicitation closing*" in the 2003 Standard Instructions is replaced with the phrase "*ITQ closing*"; and
  - iv. the phrase "*bid solicitation*" in the 2003 Standard Instructions is replaced with the phrase "*Invitation to Qualify*".
- e) Section 05 (2018-05-22), Submission of bids, Subsection 2.d, is deleted and replaced with the following: It is the Respondent's responsibilities to:

*send its response only to the National Research Council Canada receiving the responses as specified on section 2.3 of this ITQ;*
- f) Section 06 (2018-05-22), Late Bids, is deleted in its entirety.
- g) Section 07 (2018-05-22), Delayed Bids, is deleted and replaced with the following:

*It is the Respondent's responsibility to ensure that the National Research Council Canada has received the entire submission. Misrouting or other electronic delivery issues resulting in late submission of responses will not be accepted.*
- h) Section 08 (2019-03-04), Transmission by facsimile or by epost Connect, is deleted in its entirety.
- i) Subsection 2 of Section 20 (2017-04-27), Further Information, is deleted.
- j) Section 21 (2016-04-04) Code of Conduct for Procurement—bid in the 2003 Standard Instructions is deleted and replaced with the following:

*"21 Code of Conduct for Procurement The procurement process is subject to the Code of Conduct for Procurement (<https://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/cca-ccp-eng.html>)."*

## 2.2. Questions, Comments and Communications

- a) **Single Point of Contact:** To ensure the integrity of the competitive procurement process, questions and other communications regarding this ITQ must be directed only to the Contracting Authority identified in the ITQ at: [Johnathon.Gillis@nrc-cnrc.gc.ca](mailto:Johnathon.Gillis@nrc-cnrc.gc.ca). Failure to comply with this requirement may result in the response being disqualified from further consideration.
- b) **Deadline for Asking Questions:** All questions and comments regarding this ITQ must be submitted by email to the Contracting Authority no later than three (3) business days before the ITQ closing date. Questions received after that time may not be answered.
- c) **Content of Questions:** Respondents should reference as accurately as possible the numbered item of the ITQ to which the question relates. Respondents should explain each question in sufficient detail in order to allow Canada to provide an accurate answer. Any questions that a Respondent believes include proprietary information must be clearly marked "proprietary" at each relevant item. Items identified as proprietary will be treated as such unless Canada determines that the question is not of a proprietary nature. Canada may edit the questions or may request that the Respondent do so, so that the proprietary nature of the question is eliminated, and the edited question and answer can be provided to all Respondents. Questions not submitted in a form that can be published on CanadaBuys may not be answered by Canada.
- d) **Publication of Answers:** To ensure the consistency and quality of information provided to suppliers, all questions (as per this Section) and the answers will be posted on <https://canadabuys.canada.ca/>

## 2.3. Submission of Responses

It is the Respondent's obligation to submit all required information requested by this ITQ.

Unless specified otherwise in this ITQ or otherwise directed by the Contracting Authority, responses must be submitted to the National Research Council Canada contracting Authority, Johnathon Gillis, by electronic mail by the date and time indicated on section 1.4 of the ITQ.

Electronic Submissions: Individual e-mails that may include certain scripts, formats, embedded macros and/or links, or those that exceed five (5) megabytes may be rejected by Canada's e-mail system and/or firewall(s) without notice to the respondent or Contracting Authority. Larger responses may be submitted through more than one e-mail. Canada will confirm receipt of documents. It is the Respondent's responsibility to ensure that their entire submission has been received. Respondents should not assume that all documents have been received unless Canada confirms receipt of each document. In order to minimize the potential for technical issues, respondents are requested to allow sufficient time before the closing date and time to confirm receipt. Response documents submitted after the closing time and date will not be accepted.

## 2.4. Improvement of Requirement during Solicitation Period

Should respondents consider that the specifications or Statement of Work contained in the response could be improved technically or technologically, respondents are invited to make suggestions, in writing, to the Contracting Authority. Respondents must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular respondent will be given consideration provided they are submitted to the Contracting Authority at least ten days before the ITQ closing date. Canada will have the right to accept or reject any or all suggestions.

## 2.5. Applicable Laws

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

## 2.6. Rights of Canada

In addition to any other rights that Canada has as described in this ITQ, including those incorporated by reference, Canada reserves the right, at its sole discretion, to:

- a) cancel this ITQ at any time;
- b) reissue this ITQ; and
- c) at any time during Phase 2 – Request for Standing Offer (RSO), suspend Phase 2 and reopen Phase 1 – ITQ.

## 3. Preparing and Submitting a Response

### 3.1. Language for Future Communications

Each Respondent is requested to identify, in Form 1 - Response Submission Form, which of Canada's two official languages the Respondent chooses to use for future communications with Canada regarding this ITQ and any subsequent phases of the procurement process.

### 3.2. Content of Response

A complete response to this ITQ consists of the following:

- a) **Response Submission Form Annex A (Requested at ITQ Closing):** Respondents are requested to include the Response Submission Form with their responses. It provides a common form in which Respondents can provide information required for evaluation, such as a contact name, the Respondent's Procurement Business Number, the language for future communications with Canada about this procurement process, etc. Using the form to provide this information is not mandatory, but it is recommended. If Canada determines that the information requested by the Response Submission Form is incomplete or requires correction, Canada will provide the Respondent with an opportunity to provide the additional information or make the correction. Providing the information when requested during the evaluation period is mandatory.
- b) **Specific Responses to the Qualification Requirements at Annex B (mandatory at ITQ closing):** The response must include all the information required by Annex B.
- c) **Standard Costing at Annex D (Mandatory at ITQ closing):** Respondents must submit their standard hourly rates and number of hours required to provide the data in accordance with the requirements identified in the scope of work, including both the initial time frame as well as potential future "call up" years. Respondents must complete the pricing table in **Annex D**.
- d) **Certifications (Requested at ITQ Closing):** No certifications are required at the ITQ stage for this Project.
  - i. If the table below indicates that a certification is required, the Respondent is required to provide the following certifications. Although all these certifications are requested at ITQ closing, if Canada determines that any certification is missing, incomplete or requires

correction, Canada will provide the Respondent with an opportunity to provide the required information. Providing the certification when requested during the evaluation period is mandatory.

Federal Contractors Program for Employment Equity Certification	Required – please provide the information in the Response Submission Form
Former Public Servants Certification	Required – please provide the information in the Response Submission Form

- ii. Respondents should note that certain certifications that are not required at the ITQ stage may be required at a later stage of the procurement process.

## 4. Process for Evaluating Responses

### 4.1. Evaluation of Respondent Qualifications

- a) Responses will be assessed in accordance with the entire requirement of the ITQ including the evaluation criteria.
- b) An evaluation team composed of representatives of Canada will evaluate the responses. Canada may hire any independent consultant, or use any Government resources, to evaluate any response. Not all members of the evaluation team will necessarily participate in all aspects of the evaluation.
- c) In addition to any other time periods established in the ITQ:
  - i. **Requests for Clarifications:** If Canada seeks clarification or verification from the Respondent about its response, including certifications, the Respondent will have 2 working days (or a longer period if specified in writing by the Contracting Authority) to provide the necessary information to Canada. Failure to meet this deadline will result in the response being declared non-responsive.
  - ii. **Extension of Time:** If additional time is required by the Respondent, the Contracting Authority may grant an extension in his or her sole discretion.

### 4.2. Technical Evaluation

- a) **Mandatory Technical Criteria:**

Each response will be reviewed to determine whether it meets the mandatory requirements of the ITQ. Any element of the ITQ identified with the words “must” or “mandatory” is a mandatory requirement. Responses that do not comply with each and every mandatory requirement will be declared non-responsive and be disqualified.

The mandatory requirements are described in **Annex B – Qualification Requirements** and will be evaluated individually on a simple pass/fail basis.

- b) **Point Rated Criteria:**

Each response will be assessed in accordance with the technical evaluation criteria described in **Annex C - Point Rated Evaluation criteria**. Responses that do not comply with the minimum requirement specified in the evaluation criteria will be declared non-responsive and be disqualified.

### **4.3. Qualified Respondent:**

To be declared a Qualified Respondent, a Respondent must:

- comply with all the requirements of the ITQ; and
- meet all mandatory technical evaluation criteria at any time during the solicitation process.

### **4.4. Basis of Qualification**

- a) Each Respondent whose response meets all the requirements of this ITQ will become a Qualified Respondent for the next stage of the procurement process.
- b) Canada reserves the right to re-evaluate the qualification of any Qualified Respondent at any time during the procurement process. For example, if a particular security clearance is a requirement of this ITQ and the Respondent's security clearance changes or lapses, so that the Respondent no longer meets the requirements of this ITQ, Canada may disqualify that Qualified Respondent. Similarly, if new information comes to the attention of Canada that calls into question any of the Qualified Respondent's qualifications under this ITQ, Canada may re-evaluate that Qualified Respondent. If Canada re-evaluates the qualification of any Qualified Respondent, Canada may request further information and, if the Qualified Respondent fails to provide it within 5 working days (or a longer period provided by the Contracting Authority), Canada may disqualify the Qualified Respondent.
- c) Unsuccessful Respondents will not be given another opportunity to participate or be re-evaluated for the subsequent phases of the procurement process, unless Canada determines in its sole discretion to conduct a second qualification round.
- d) All Respondents will be notified in writing regarding whether or not they have qualified.

### **4.5. ITQ Phase Second Qualification Round**

- a) Canada reserves the right, in its sole discretion, to conduct a second qualification round among the unsuccessful Respondents if, in Canada's opinion, the first qualification round results in an insufficient number of Qualified Respondents.
- b) If Canada determines that unsuccessful Respondents will be given a second opportunity to qualify, Canada will provide written information to all unsuccessful Respondents on the same day regarding the reasons they were unsuccessful during the first qualification round.
- c) Any Respondent who does not qualify as a result of any second qualification round conducted by Canada will not be given another opportunity to participate or be re-evaluated for any subsequent phases of this procurement process.

# Annex A - Response Submission Form

<b>Response Submission Form</b>	
<b>Respondent's full legal name</b> <i>[Note to Suppliers: Suppliers who are part of a responding group should take care to identify the correct corporation as the Respondent.]</i>	
Authorized Representative of Respondent for evaluation purposes (e.g., clarifications)	Name
	Title
	Address
	Telephone
	Fax
	Email
<b>Respondent's Procurement Business Number (PBN)</b> <i>[Note to Respondents: Please ensure that the PBN you provide matches the legal name under which you have submitted your response. If it does not, the Respondent will be determined based on the legal name provided, not based on the PBN, and the Respondent will be required to submit the PBN that matches the legal name of the Respondent.]</i>	
Preferred language for future communications	English: _____ Français : _____
<p>On behalf of the Respondent, by signing below, I confirm that I have read the entire ITQ including the documents incorporated by reference into the ITQ and I certify that:</p> <ul style="list-style-type: none"> <li>• The Respondent considers itself and its products able to meet all the mandatory requirements described in the ITQ and</li> <li>• All the information provided in the response is complete, true and accurate.</li> </ul>	
Signature of Authorized Representative of Respondent	

## Annex B - Qualification Requirements

Response form for Mandatory Requirements	
<b>Respondent</b>	
Respondent's name	
Respondent's address	
<b>Mandatory Requirement 1</b>	
<p>Respondent must have the right to share the data with Canada in accordance with supplemental terms and conditions, which apply to all call ups issued by the NRC, as indicated below.</p> <p>To review the terms and conditions use the link provided below (hold control and left click to access the hyperlinks)</p> <p><u>4006 (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information:</u></p> <p><a href="#">01 Interpretation;</a></p> <p><a href="#">02 Records and Disclosure of Foreground Information;</a></p> <p><a href="#">03 Ownership of Intellectual Property Rights in Foreground Information;</a></p> <p><a href="#">04 Licenses to Intellectual Property Rights in Foreground and Background Information;</a></p> <p><a href="#">05 Contractor's Right to Grant Licenses;</a></p> <p><a href="#">06 Waiver of Moral Rights;</a></p> <p><a href="#">07 License to Intellectual Property Rights in Canada's Information;</a></p> <p><a href="#">08 Transfer or License of Contractor's Rights;</a></p> <p><a href="#">09 Transfer of Intellectual Property Rights upon Termination of the Contract for Default;</a></p> <p><a href="#">10 Products Created Using the Foreground Information</a></p> <p>The respondent must initial that the terms and conditions as prescribed by Canada governs all applicable call ups.</p>	
<b>Response to Mandatory Requirement 1</b>	
<b>Mandatory Requirement 2</b>	
<p>The Respondent must be able to provide contextual and performance data of/from the system(s) using an Internet-based secure file transfer process in compliance with the data transfer guideline attached below. The data transfer schedule will be agreed as part of the Contract.</p>	

Data Provision Guideline Attachment	 Data Provision Guidelines.pdf
Response to Mandatory Requirement 2	
Mandatory Requirement 3	
The system(s) must be located in Canada, must either be connected to an electric distribution grid or a bulk power grid, or have the capability of providing grid services	
Response to Mandatory Requirement 3	
Mandatory Requirement 4	
The Respondent agrees to provide sufficient contextual data to conduct a basic energy balance (input/output) analysis of the system and must include at minimum the main component specifications, configurations, and settings including a single line diagram of the system.	
Response to Mandatory Requirement 4	
Mandatory Requirement 5	
The energy system must include at least one of the following components: <ol style="list-style-type: none"> <li>1. photovoltaic module,</li> <li>2. wind turbine,</li> <li>3. energy storage system,</li> <li>4. hydroelectric dam,</li> <li>5. river hydrokinetic generator,</li> <li>6. marine tidal generator,</li> <li>7. geothermal electric generator,</li> <li>8. controllable/flexible electric load: <ol style="list-style-type: none"> <li>a. electric vehicle chargers,</li> <li>b. electric water heater,</li> </ol> </li> </ol>	

c. baseboard electric heater thermostat.	
Response to Mandatory Requirement 5	
Mandatory Requirement 6	
The performance data must include, at minimum, basic metering data, the operational settings, and relevant operational conditions such as wind speed or solar irradiance as well as the event logs of each main system component. The respondent must use the data request attached below to identify this and additional data that will be supplied.	
Data Request Attachment	 Requested data.xlsx
Response to Mandatory Requirement 6	
Mandatory Requirement 7	
The Respondent must be the owner of the data or be granted explicit authorization from the owner of the data to disseminate the data to Canada for research purposes in accordance with the terms and conditions of the Standing Offer and Call ups. The respondent agrees that any call up issued by Canada shall not infringe on any intellectual property established by industry.	
Response to Mandatory Requirement 7	
Mandatory Requirement 8	
The energy system must have a minimum combined electrical generation capacity of 500 kW (exceptions: river hydrokinetic systems must have a minimum combined generation capacity of 50 kW, remote communities must have a minimum combined generation capacity of 25 kW), or combined electrical storage capacity of 250 kW, or combined thermal generation capacity of 5 TJ/year (exception: solar and heat pump systems must have a combined thermal capacity of 1 TJ/year), or a minimum grid-controlled demand capacity of 50 kW.	
Response to Mandatory Requirement 8	

## Annex C - Point Rated Evaluation Criteria

Item	Minimum Requirements and Criteria	Scoring Scale	Max Score
E1	<p><b>Criteria:</b> The temporal range of the performance data, from 1 to 7 years. This can be a combination up to 5 past years and up to 3 years into the future from the Contract start date.</p> <p><b>Minimum Requirement:</b> range of 1 year</p>	a) 1 point per year	10
E2	<p><b>Criteria:</b> The sampling period of each performance data matches what is specified in the <b>Mandatory Requirement 6 “Data Request”</b> Excel workbook.</p> <p><b>Minimum Requirement:</b> resolution of 1 hour</p>	<p>a) 0.5 points for each unique performance data matching that specified requiring resolution <math>\leq 1</math> min.</p> <p>b) 0.25 points for each unique performance data matching that specified requiring resolution <math>&gt; 1</math> min.</p>	10
E3	<p><b>Criteria:</b> The number of unique parameters to be provided.</p> <p><b>Minimum Requirement:</b> 20 or more unique performance data parameters. All related contextual data described in <b>Mandatory criteria 4.</b></p>	<p>a) 0.2 point per performance data parameter.</p> <p>b) 0.1 point per performance data parameter on subsequent devices of the same type.</p>	10 (max 5 each)
E4	<p><b>Criteria:</b> Under-represented system location and technology combination. Preference is given to systems that, at the time of application review, are of strategic interest to Canada; this is to maintain a diversity of systems representative of the technologies and their geographic locations.</p> <p><b>Minimum Requirement:</b> None</p>	<p>a) 10 points for location</p> <p>b) 10 points for device</p> <p>c) 10 points for system specifications</p>	30
E5	<p><b>Criteria:</b> The system has, or is required to provide, grid services.</p> <p><b>Minimum Requirement:</b> None</p>	a) 5 points each	10

## Annex D – Standard Costing

### a) Initial Requirement:

No	Description of Services	Hourly Rates Year 1	Hourly Rates Year 2	Hourly Rates Year 3
1	Point of common coupling	\$	\$	\$
2	Generator	\$	\$	\$
3	Photovoltaic module	\$	\$	\$
4	Wind turbine	\$	\$	\$
5	Energy storage system	\$	\$	\$
6	Controllable/flexible electric load	\$	\$	\$
7	Hydroelectric energy	\$	\$	\$
8	River hydrokinetic energy	\$	\$	\$
9	Marine tidal energy	\$	\$	\$
10	Electric vehicle charger	\$	\$	\$
11	Electric water heater	\$	\$	\$
12	Baseboard heater thermostat	\$	\$	\$

### b) Potential additional “call-up” years:

No	Description of Services	Hourly Rates Year 1	Hourly Rates Year 2	Hourly Rates Year 3
1	Point of common coupling	\$	\$	\$
2	Generator	\$	\$	\$
3	Photovoltaic module	\$	\$	\$
4	Wind turbine	\$	\$	\$
5	Energy storage system	\$	\$	\$
6	Controllable/flexible electric load	\$	\$	\$
7	Hydroelectric energy	\$	\$	\$
8	River hydrokinetic energy	\$	\$	\$
9	Marine tidal energy	\$	\$	\$
10	Electric vehicle charger	\$	\$	\$
11	Electric water heater	\$	\$	\$
12	Baseboard heater thermostat	\$	\$	\$

### c) Option Years (4-7) Maintenance:

No	Description of Services	Hourly Rates Year 1	Hourly Rates Year 2	Hourly Rates Year 3
1	Point of common coupling	\$	\$	\$
2	Generator	\$	\$	\$
3	Photovoltaic module	\$	\$	\$
4	Wind turbine	\$	\$	\$
5	Energy storage system	\$	\$	\$
6	Controllable/flexible electric load	\$	\$	\$
7	Hydroelectric energy	\$	\$	\$
8	River hydrokinetic energy	\$	\$	\$
9	Marine tidal energy	\$	\$	\$
10	Electric vehicle charger	\$	\$	\$
11	Electric water heater	\$	\$	\$
12	Baseboard heater thermostat	\$	\$	\$