



**ELECTRICITY SUPPLY FOR  
QUÉBEC NEEDS**

**Call for Tenders Document  
A/O 2009-02**

**WIND-GENERATED ELECTRICITY  
FOR A TOTAL OF 500 MW DIVIDED AS FOLLOWS:**

**BLOCK OF 250 MW FROM ABORIGINAL PROJECTS  
AND  
BLOCK OF 250 MW FROM COMMUNITY PROJECTS**

**ADDENDUM #2**

**Issue date : SEPTEMBER 11, 2009**

*Addendum #2 is issued in French and English. Some changes aimed at correcting typographical or translation errors may have been made in one version while not being required in the other version.*



<p style="text-align: center;"><b>ADDENDUM #1</b> <b>September 11, 2009</b> <b>CALL FOR TENDERS A/O 2009-02</b></p>
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This addendum #2 is an integral part of the A/O 2009-02 call for tenders document and modifies it as follows:

**1. Chapter 2 – Selection process**

Section 2.2.10 is now void and is replaced by Section 2.2.10 appearing on page 3 of this addendum.

Table 2.3.1 of Section 2.3 is now void and is replaced by Table 2.3.1 appearing on page 6 of this addendum.

**2. Chapter 3 – Instructions to bidders**

Section 3.9 is now void and is replaced by Section 3.9 appearing on page 7 of this addendum.

The modifications made in Addendum #2 are identified as “**R2**” (revision 2), which appears in the margin to indicate that a paragraph, table or section has been revised or added. Bidders must ensure that they have properly identified the changes made to the paragraph, table or section involved.

Bidders must indicate the number of addenda received in Section **1.1 – Certification** of the Bid Form (Appendix 12). This entry shall serve as acknowledgment of receipt.

### 2.2.10 Wind Measurements and Forecast Generation

The bidder must have wind measurements that originate from wind measurement instruments installed at the most 2 km from the wind farm offered in the bid for at least eight months, including the period beginning from December 1 in a given year and ending on March 31 the following year. If the bidder has measurements over more than one year, it can use these data even if the data covering the period from December 1 to March 31 have not been recorded in a consecutive manner.

The wind conditions must be evaluated using at least one meteorological mast for each wind farm being proposed. The mast must be equipped with anemometers and wind vanes operating simultaneously in order to extrapolate meteorological data with a high confidence level to the location of each wind turbine.

For bids using wind turbines with hub heights of less than 90 metres, wind measurements at the highest point of each meteorological mast must be taken at a height that is greater than or equal to 50% of the height of the hub. In the case of wind turbines with hub heights greater than or equal to 90 metres, wind measurements at the highest point of each meteorological mast must be taken at a height of at least 45 metres.

The total data recovery rate at the site shall be at least 75% during the mandatory eight months measurement period at the site. For any given meteorological mast, the recovery rate is defined as the average of the recovery rates calculated for each measured parameter (wind speed and direction) at each level above the minimum height. For a given parameter, the recovery rate is calculated by obtaining the ratio of the number of valid observations measured by the appropriate instrument over the total number of potential observations over the affected period. The total data recovery rate is the average of the recovery rates of each meteorological mast.

For purposes of establishing the total data recovery rate, the reconstitution of missing data from a calibrated instrument based on data from another instrument (calibrated or uncalibrated) is acceptable provided that a correlation coefficient equal to or greater than 0.95 is established between the two wind measurement instruments. The instruments used for the reconstitution must be located at a height of at least 30 metres.

In addition, the bidder must submit in section 3.6 of the Bid Form an expert's report corroborating the validity of the results obtained, including the estimated electricity generation of the wind farm expressed as average net energy generated over the long term on a monthly and annual basis ( $P_{50}$ ). This report must specify among others, the method chosen, the correlation model used, and the level of uncertainty regarding the estimated wind resources, and confirm that the above requirements have been met. The report shall be signed by an expert with at least five years pertinent experience in the assessment of wind energy potential and expected electricity generation.

A bidder must show that it has used one of the following software programs in evaluating the potential of its wind farm:

- MS-Micro (Zephyr North Ltd./Environment Canada);
- WAsP (Risoe National Laboratory);

- Site Wind (AWS Truwind);
- Meteodyn WT (Meteodyn);
- WindLogics (WindLogics);
- Software application with CFD model and Phoenix 3.4 software (DEWI).

For the micro siting and evaluation of the forecasted generation of its wind farm, a bidder must demonstrate that it has used one of the following software programs:

- WindPro (Energy & Environmental Data) with WAsP module;
- GH Wind Farmer (Garrad Hassan) with WAsP module;
- WindFarm (ReSoft);
- WAsP (Risoe National Laboratory);
- Site Wind (AWS Truwind);
- WindLogics (Windlogics).

During the selection process, Hydro-Québec Distribution reserves the right to require additional clarifications. Failure to provide the information within the allotted time shall result in the bid being rejected. Thus, in addition to the information required in Section 3.6 of the Bid Form, Hydro-Québec Distribution may require that the bidder submit, within five days, the detailed studies that were used to prepare the information requested in the above-mentioned section, including:

- The detailed wind study: description of measurement campaign, installation specifications and characteristics of measurement instruments, all of the meteorological data gathered on site, the reference data, including the analyses of variances and correlations with the data available over the long term and, when justified, the description of historical corrections applied to on-site measurements and the quality assurance program, including certification of measurement instrument calibration;
- The detailed study of the methodology used to evaluate the wind energy potential and forecast generation: a description of the detailed method used, name of specialized software used, all of the parameters used for modeling based on the characteristics of the proposed site, including topography, elevation, temperature, vegetation cover, and obstacles;
- The hypotheses and corrective methods applied when the model's limits have been reached, such as when complex topography is present;
- The hypotheses regarding losses such as those resulting from the wake, blade soiling, rime/freezing rain and other specific environmental constraints as well as turbine availability and anticipated electrical losses;
- The estimated wind farm self-consumption, including turbine auxiliary services;
- All data, parameters and results in digitized and hard copy form.

In addition, Hydro-Québec Distribution may request the opinion of an independent expert regarding the data, methods, studies and results submitted, or have the expert prepare his own

report based on the data supplied by the bidder. If there are any major discrepancies between the reports supplied by the bidder, the expert's report and the report produced by Hydro-Québec Distribution's independent expert, the bid may be rejected.

## **R2 Use of a SODAR or LIDAR device**

A project provided with a meteorological tower located at a distance no farther than 4 km of the nearest wind turbine is acceptable if a verification is made by SODAR or LIDAR at a maximal distance of 2 km of the closest wind turbine.

However, this verification must include two (2) periods of concomitant measures of winds made on both the meteorological tower and the SODAR/ LIDAR:

- a first validation period during which the measurement of wind SODAR/ LIDAR must be made near the meteorological tower (the distance separating the tower of the SODAR/LIDAR should not exceed the height of the tower) and,
- a second period during which measurement of wind SODAR/LIDAR while the SODAR/LIDAR is located less than 2 km of the nearest wind turbine.

The global rates of data recovery for each of these two (2) periods have to be at least 75%. The duration of the periods of SODAR/LIDAR wind measurement must conform with the practices generally recognized by firms specialized in this field.

As required above, the validity of the results obtained must be approved and signed by an expert with at least five years of pertinent experience in the assessment of wind energy potential and expected electricity generation.

**2.3 Ranking of bids (Step 2)**

**TABLE 2.3.1  
EVALUATION CRITERIA**

	<b>Criteria</b>	<b>Weighting</b>
	Cost of electricity	30
	Regional content beyond the minimum requirements	15
	Quebec content beyond the minimum requirements	10
	Sustainable development	25
<b>R2</b>	Financial capability	7
	Project feasibility	7
	Relevant experience	6
	<b>Total</b>	<b>100</b>

### **3.9 Variants**

**R2** Bidders may, in any given bid, submit up to four variants in addition to their main offer and simultaneously with it. The main offer of a bid can not be conditional on the acceptance of another project or more.

A bid may thus contain up to five separate and mutually exclusive offers. However, as stated in Section 3.12, additional evaluation fees will be charged for the third and fourth variants.

A variant may involve differences pertaining to the following:

- R2**
- Installed capacity of the wind farm;
  - Price, among others if the bidder wishes to vary it based on the voltage level at which its project could be connected to Hydro-Québec' system or if he the bidder or if his project share the same delivery point with another (or several) wind farm(s);
  - The localisation of the delivery point;
  - Designated wind turbine manufacturer;
  - Wind turbine model.

A site other than the one proposed in the main offer cannot be considered as a variant and must be presented in a separate bid.

All variants shall include a description that meets the requirements of Section 6 of the Bid Form along with a justification. Hydro-Québec Distribution may select the main offer or any of the variants being offered.