Ontario Energy Board

Commission de l'Énergie de l'Ontario

Ontario

**EB-2005-0249**

**IN THE MATTER OF** the *Ontario Energy Board Act, 1998,* S.O. 1998, c. 15, Schedule B;

**AND IN THE MATTER OF** an Application by Superior Wind Prince Power Inc. for an Order or Orders pursuant to section 92 of the *Ontario Energy Board Act, 1998* granting leave to construct a 230 kV transmission line and associated facilities to connect a proposed 99 MW wind farm to the transmission system of Great Lakes Power Ltd. near Sault Ste Marie.

**BEFORE:** Gordon Kaiser
Presiding Member

Bob Betts
Member

Paul Vlahos
Member

**DECISION AND ORDER**

July 28, 2005

## 1.0 THE APPLICATION

Superior Wind Prince Power Inc. (“Superior” or the “Applicant”) filed an Application dated March 24, 2005, with the Ontario Energy Board (the “Board"), seeking an Order of the Board granting leave to construct transmission facilities. The Application was made under section 92 of the *Ontario Energy Board Act, 1998* (the “Act”).

Superior was incorporated in 2004 for the specific purpose of undertaking the development and operation of a 99 MW wind generation facility (the “Wind Farm”) near Sault Ste. Marie. Superior is a wholly owned subsidiary of Brascan Power Wind Corporation / Corporation Energie Eolienne Brascan. (“BPWC”) (formerly Superior Wind Energy Inc.)[1] which, in turn, is a subsidiary of Brascan Corporation.

The Wind Farm will be located near the shores of Lake Superior in the Townships of Prince, Dennis, Pennefather and Awares, near Sault Ste. Marie.

The Application relates to the construction of the following transmission facilities that will connect the Wind Farm to the transmission system of Great Lakes Power Ltd. (“GLPL”) (collectively, the “Project”):

(a) a substation that will include a 34.5/230 kV transformer, a high voltage breaker, low voltage switchgear and a small building to house the protection and control equipment. The substation will be located in the Township of Dennis at the western end of the proposed 230 kV transmission line;
(b) a 230 kV transmission line that will run about 11.2 km northeast from the substation to GLPL’s 230 kV transmission line (under construction) about 10 km north of GLPL’s Third Line Transformer Station; and
(c) a switching station that will include a 230 kV breaker and related facilities, protection and control equipment and a terminating support structure to connect the 230 kV transmission line to GLPL’s 230kV transmission system.

[1] The name of the corporation was changed from Superior Wind Energy Inc. to BPWC on June 21, 2005. For convenience, this Decision and Order will refer to BPWC, but such references should be understood as references to Superior Wind Energy Inc. where applicable.

The Wind Farm and associated facilities described above are scheduled for completion by March 31, 2006.

To accommodate the Project, GLPL will construct a 0.1 km 230 kV tap from its 230 kV line to the terminating support structure referred to above.

The Application has been assigned Board File No. EB-2005-0249.

The Board issued a Notice of Application and Written Hearing on April 7, 2005 and Superior served and published the Notice as directed by the Board. The Independent Electricity System Operator (the "IESO") and PUC Distribution Inc. ("PUC"), an electricity distributor operating in Sault Ste Marie, have been granted intervenor status in this proceeding.

In the Notice of Application, the Board indicated that it would proceed with the Application by way of a written hearing unless any party satisfied the Board that there was a good reason for not proceeding by way of a written hearing. The Board received no submissions and has proceeded by way of a written hearing.

In accordance with Procedural Order No. 1 issued on May 16, 2005, Board staff interrogatories were issued on May 26, 2005 and responses were received during the period June 6-17, 2005.

## 2.0 EVIDENCE AND SUBMISSIONS

### 2.1 Evidence of the Applicant

On June 24, 2004, the Province of Ontario issued a request for proposals entitled "Request for Proposals for 300 MW of Renewable Energy". BPWC, the parent company of Superior, submitted a proposal to supply energy from the Wind Farm.

The Ministry of Energy accepted BPWC's proposal, and the Ontario Electricity Financial Corporation subsequently entered into a supply contract with Superior for the supply of electricity from the Wind Farm for a period of 20 years.

The Wind Farm includes 66 wind turbine generators providing a net output of 99 MW. A second phase is envisaged in the future which would add about 101 MW to the Wind Farm for a total of 200 MW. The Project is needed to connect the Wind Farm to the IESO-controlled grid.

Superior's evidence indicated that a number of different high voltage and low voltage configurations were examined on the basis of environmental and economic considerations and system reliability. The preferred system configuration was a 34.5 kV underground collector system and a 230 kV above ground transmission line.

Four alternative routes for the 230 kV transmission line were examined on the basis of environmental, technical and economic factors. According to the Applicant, option 4, the Project, was selected for the following reasons:

- it provides the shortest connection to the GLPL 230 kV line;
- it requires the least amount of vegetation removal;
- it impacts the least area of wetland;
- it has the lowest capital cost, is the least expensive to maintain and involves the lowest energy losses; and
- it creates the least amount of interference with roads and recreational activities.

Superior's evidence noted that the 10-year outlook report[2] of the IESO highlights the need for additional electrical supply in Ontario and that renewable technologies such as wind will play a significant role in addressing Ontario's energy demand.

According to the evidence, Superior will pay for the construction of the transmission line and associated facilities to be owned by it and has agreed to pay all costs related to the modification of GLPL's connection facilities in accordance with the Transmission System Code. On this basis, Superior states that the Project will have no impact on transmission rates in Ontario.

[2] Dated April 29, 2004, and covering the period January 2005 to December 2014.

As described in section 2.4 below, a Customer Impact Assessment ("CIA") was carried out by GLPL, and a copy of the CIA report was filed as part of the Applicant's pre-filed evidence. Superior noted that the CIA report identified an increase in short circuit levels which may require PUC to upgrade its own facilities.

Superior further stated that the issue of who should pay for such upgrades was addressed by the Board in section 6.11.1 of its Transmission System Code Phase 1 Decision issued in the context of proceeding RP-2002-0120 on June 8, 2004. Specifically, an excerpt from section 6.11.1 of that Decision states as follows: "The Board expects that the CIA studies prepared by transmitters will provide information to all affected customers regarding the fault levels before and after the new customer connection. The Board is of the view that existing transmission customers should be required to upgrade their own equipment, at their own cost, to handle increased short circuit levels which may result from connecting a new customer, provided that these levels do not exceed the allowable fault levels currently set out in Appendix 2 of the Code".

According to the evidence, the proposed transmission corridor is located on both private and Crown land. Specifically, six private landowners and the Crown are directly affected. The Applicant has indicated that its parent company BPWC has acquired all of the easement rights necessary for the transmission facilities. Specifically, the pre-filed evidence includes a form of easement agreement offered to all directly affected private landowners. All of the six directly affected private landowners signed the easement agreement offered. The Applicant has confirmed that the easement rights obtained by BPWC will be assigned to Superior prior to construction of the Project.

For the Crown land sections of the proposed corridor, the Ministry of Natural Resources signed an option agreement on October 21, 2003 to lease crown land to BPWC. This agreement, which the Applicant has confirmed will be assigned to Superior, is for approximately 2,000 hectares, which includes all of the Crown land required for the Project.

## 2.2 Evidence of PUC

The CIA report referred to above identified a potential short circuit capability problem at PUC.

Through the interrogatory process, PUC provided certain details regarding the extent of the potential inadequacy, the proposed solution and the cost and timing of implementation of the solution as summarized below.

PUC has eight 38 kV breakers at its substation TS2 that require upgrading due to inadequate short circuit capability. Short circuit values were provided for a number of operating conditions, including the substation bus-tie open or closed, as well as with and without the new generation associated with the Wind Farm. The results show that:

(i) connection of the Wind Farm would result in increases in short circuit levels ranging from about 2% to 4.3% at PUC's TS2 substation;
(ii) closing of the bus-tie would result in increases in short circuit levels ranging from about 53% to 66% at PUC's TS2 substation;
(iii) short circuit levels at PUC's TS2 substation would exceed the equipment ratings when the bus-tie is closed, with or without the new generation associated with the Wind Farm; and
(iv) short circuit levels at PUC's TS2 substation would remain within equipment ratings when the bus-tie is open, with or without the new generation associated with the Wind Farm.

PUC stated that that its historical operating procedure has been to operate the substation with the bus-tie normally in the open position and only closed for planned circuit switching. It also noted that GLPL has expressed concern with this practice in light of increasing short circuit levels and new system operations. As a result, PUC plans to upgrade the eight inadequate breakers at a total cost of about $65,000, tentatively scheduled for the spring of 2006.

## 2.3 System Impact Assessment

A System Impact Assessment ("SIA") report was issued by the IESO on April 14, 2005. The SIA report recommended that a "Notification of Approval for Connection" be issued subject to certain specified requirements which were listed in section 11.0 of the SIA report. The "Notification of Approval of Connection Proposal" was also issued by the IESO on April 14, 2005.

## 2.4 Customer Impact Assessment

A Customer Impact Assessment report was issued by GLPL on September 17, 2004. The CIA report provided an analysis of the impact of the Project on GLPL's customers from the perspectives of (i) short circuit levels; (ii) supply voltage levels; (iii) adequacy / capacity; and (iv) reliability of supply at customer connection points.

The CIA report states that the expected increase in local generation resulting from the Wind Farm will likely decrease power transfer requirements from the provincial network, enhance self-sustainability of the GLPL system and improve voltage stability in the area. The report further states that these factors will result in an increase in the overall reliability at the customer connection points.
As discussed in section 2.2 above, the CIA report also identified a potential short circuit capability problem at PUC.

## 2.5 Environmental Assessment

The Applicant's evidence indicates that the Project is subject to the *Electricity Projects Regulation*, O. Reg. 116/01, and falls within a category of project for which an individual environmental assessment is not normally required provided that: (a) the proponent undertakes an environmental screening process in accordance with the Ministry of the Environment's *Guide to Environmental Assessment Requirements for Electricity Projects*; and (b) no elevation requests are made within the prescribed period. The Applicant has stated that it has carried out the environmental screening process in accordance with the *Guide*.

The Applicant has also stated that the 30-day public review period has expired and that no elevation requests were filed with the Ministry of the Environment. Superior filed its Statement of Completion dated June 30, 2005 with the Ministry, and has filed a copy with the Board.

## 3.0 BOARD FINDINGS

Section 96(1) of the Act provides that if, after considering an application under section 92 of the Act, the Board is of the opinion that a proposed work is in the public interest, then the Board shall make an order granting leave to construct the work.

Section 96(2) of the Act provides that for an application under section 92 of the Act, the Board shall only consider the interests of consumers with respect to prices and reliability and quality of electricity service when determining if a proposed work is in the public interest.

In the context of this Application, the main issues for the Board are as follows:

1. Is the Project needed and is it the best alternative?
2. What impact will the Project have on transmission rates?
3. What impact will the Project have on reliability of supply?
4. Have the land-use matters been addressed?
5. If the Project is approved, what are the conditions of approval?

### 3.1 Is the Project needed and is it the best alternative?

The Board notes that the Wind Farm is the subject of a contract entered into following a request for proposals for 300 MW of renewable energy, and that the Project is required to connect the Wind Farm to the IESO-controlled grid. The Board accepts the Applicant's evidence that the Project is the preferred of the alternatives considered based on technical and economic factors.

### 3.2 What impact will the Project have on transmission rates?

The Board notes that the Applicant will pay all costs associated with construction of the Project, including any work required on GLPL's connection facilities (there are no modifications required on GLPL's network facilities). Therefore, the Project will have no impact on transmission rates in Ontario.

PUC has not made a request for compensation for any of the estimated $65,000 in costs associated with the upgrading of its equipment to resolve the potential short circuit capability problem described above. Based on the evidence, it does

not appear that this problem is directly related to the new generation associated with the Wind Farm. In any event, even if such costs were directly attributable to the Project, the Board's view is that responsibility for such costs is appropriately determined in accordance with the Board's Transmission System Code Phase 1 Decision cited above, which approach is now also reflected in the Board's revised Transmission System Code.

### 3.3 What impact will the Project have on reliability of supply?

The Board accepts the conclusion in GLPL's Customer Impact Assessment report that the expected increase in local generation resulting from the Wind Farm will likely decrease power transfer requirements from the provincial network, enhance self-sustainability of the GLPL system and improve voltage stability in the area. The Board accepts that these factors will result in an increase in the overall reliability at applicable customer connection points.

### 3.4 Have the land-use matters been addressed?

The Board notes that the Project will be located on both private and Crown land. The Board has reviewed the form of easement agreement offered to and signed by all six directly affected private landowners and finds it acceptable. The Board also notes that arrangements have been made with the Ministry of Natural Resources for the lease of the Crown lands in question.

The Board notes that all of the easement and other land-use rights necessary to accommodate the Project have been acquired by Superior's parent company BPWC, and that these rights will be assigned to Superior prior to the start of construction of the Project.

### 3.5 What are the conditions of approval?

The Board approves the Project, as described in Superior's Application, subject to the conditions of approval appended to this Decision and Order, which are in keeping with the Board's practice for establishing certain general conditions for projects of this type.

**THE BOARD THEREFORE ORDERS THAT:**

The Application by Superior Wind Prince Power Inc. for leave to construct a 230 kV transmission line and associated facilities to connect a proposed 99 MW wind farm is approved subject to the conditions attached as Appendix A to this Decision and Order.

Dated at Toronto, July 28, 2005

ONTARIO ENERGY BOARD

*Original Signed By*

John Zych
Board Secretary

**APPENDIX "A" TO**

**DECISION AND ORDER**

**BOARD FILE No. EB-2005-0249**

**DATED JULY 28, 2005**

# CONDITIONS OF APPROVAL

## 1.0 GENERAL REQUIREMENTS

**1.1** Superior Wind Prince Power Inc. (“Superior”) shall construct the transmission facilities and restore the land in accordance with its Application, evidence and undertakings, except as may be modified by the Board’s Decision and Order dated July 28, 2005 (the “Order”) and these Conditions of Approval.

**1.2** Unless otherwise ordered by the Board, leave to construct set out in the Order shall expire on December 31, 2006, unless construction has commenced prior to that date.

**1.3** Superior shall advise the Board's designated representative of any proposed material change in the project, including changes in: the proposed route; construction techniques; construction schedule; restoration procedures; or any other impacts of construction. Superior shall not make a material change without the prior approval of the Board or its designated representative.

## 2.0 PROJECT AND COMMUNICATIONS REQUIREMENTS

**2.1** The Board's designated representative for the purpose of these Conditions of Approval shall be the Manager, Facilities.

**2.2** Superior shall designate a person as project engineer and shall provide the name of the individual to the Board's designated representative. The project engineer will be responsible for the fulfillment of these Conditions of Approval on the construction site. Superior shall provide a copy of the Order and these Conditions of Approval to the project engineer, within seven days of the date of the Order or within seven days of the appointment of the project engineer, whichever is the later, and in any event prior to commencement of construction.

**2.3** Superior shall give the Board's designated representative no less than ten days’ written notice in advance of the commencement of construction.

**2.4** Superior shall furnish the Board's designated representative with all reasonable assistance for ascertaining whether the work is being or has been performed in accordance with the Order.

**2.5** Superior shall develop as soon as possible, and in any event prior to the start of construction, a detailed construction plan for the transmission facilities. The detailed construction plan shall cover all construction activities and associated outages and also include proposed outage management plans. These plans must be discussed with affected transmission customers before being finalized. Upon completion of the detailed plans, Superior shall provide five copies to the Board's designated representative.

**2.6** Superior shall furnish the Board's designated representative with five copies of written confirmation of the completion of construction of the transmission facilities. This written confirmation shall be provided within one month of the completion of construction.

## 3.0 MONITORING AND REPORTING REQUIREMENTS

**3.1** Both during and after construction of the transmission facilities, Superior shall monitor the impacts of construction, and shall file five copies of a monitoring report with the Board within fifteen months of the completion of construction. Superior shall attach to the monitoring report a log of all complaints related to construction that have been received. The log shall record the name of the person making the complaint, the time the complaint is received, the substance of the complaint, the actions taken in response, and the reasons underlying such actions.

**3.2** The monitoring report shall confirm Superior's adherence to these Conditions of Approval and shall include a description of the impacts noted during construction and the actions taken or to be taken to prevent or mitigate the long-term effects of the impacts of construction. This report shall describe any outstanding concerns identified during construction and the condition of the rehabilitated land and the effectiveness of the mitigation measures undertaken. The results of the monitoring programs and analysis shall be included and recommendations made as appropriate. Any deficiency in compliance with any of these Conditions of Approval shall be explained.

## 4.0 SYSTEM IMPACT ASSESSMENT

**4.1** Superior shall implement all of the recommendations of the Independent Electricity System Operator (“IESO”), as set out in the System Impact Assessment report dated April 14, 2005.

## 5.0 CUSTOMER IMPACT ASSESSMENT

No specific requirements

## 6.0 EASEMENT AGREEMENTS

**6.1** Superior shall not commence construction of the transmission facilities until such time as Superior holds the lease rights to the Crown land required for the transmission facilities.

**6.2** Superior shall not commence the construction of the transmission facilities until such time as the easement rights granted to BPWC by the affected private land owners have been assigned to Superior.

## 7.0 OTHER APPROVALS

**7.1** Superior shall obtain, prior to commencement of construction, all other approvals, permits, licenses, certificates and other authorizations required to construct the transmission facilities. Superior shall obtain all approvals, permits, licenses, certificates and other authorizations required to operate and maintain the transmission facilities on a timely basis as required to ensure compliance with all applicable law and regulatory requirements.