

February 17, 2011

Dear Market Participants and Other Interested Parties:

Re: Alberta Electric System Operator (“AESO”) Approach to Implementing Wind Power Management Limitations in Alberta and Related Amendments to ISO OPP 515 – “South Area Operations”

Introduction

Wind power generation has grown significantly around the world and in Alberta over the last few years. Considerable wind generation has been added to the Alberta interconnected electric system (“AIES”) since 2000.

Given the success of the wind generation industry in advancing both the technology and procurement of wind projects, the AESO has been working with wind generation developers and stakeholders to address AIES integration issues related to wind power. The AESO has conducted technical studies examining the operational impacts of wind generation given its unique technical characteristics and variable output.

As of January 2011, the total wind power generating capacity connected to the AIES is 777 MW. It is expected that this capacity will grow to over 1100 MW by September 2011.

AESO studies for this level of wind integration have determined that the reliable operation of the system necessitates certain wind power management requirements to be in place prior to connecting this level of wind capacity. The AESO, therefore, is proceeding with initiatives that will ensure these requirements are in effect by the end of the second quarter of 2011, to enable the addition of the significant growth in the wind power generation fleet to the AIES, in a manner that continues to ensure AIES reliability, integrity and fairness to the other generators operating in Alberta.

Background

Commencing in late 2009 and throughout 2010, the AESO has been in consultation with the industry for the implementation of new wind aggregated generating facilities interconnection rules. This consultation resulted in proposed new ISO rules Section 502.1 – “Wind Aggregated Generating Facilities Technical Requirements” (“Wind Technical Rules”), which set out the industry technical and facility requirements for connecting wind aggregated generating facilities to the AIES, while also addressing such specific matters as wind power forecasting capability, power limiting, ramp rate limiting and over frequency control. The Wind Technical Rules were filed with the Alberta Utilities Commission in August 2010.

The implementation of these new technical rules is a vital first step in ensuring that the facilities meet all wind power forecasting and data requirements so that the AESO can fully understand and appropriately manage wind volatility on an AIES-wide basis.

The next step is to implement measures to manage the real power output ramp up rates from all wind aggregated generating facilities operating in Alberta. In September 2010, the AESO published its *Short-Term Wind Integration Recommendation Paper* after significant and lengthy consultations with market participants. [Click here](#) or follow Market > Market Policy Implementation > Wind Power Integration > Short Term Wind Integration to view this Recommendation Paper, comments and responses.

The top three recommendations were:

1. The AESO must dispatch the energy market merit order (“EMMO”) to balance supply and demand on the basis that the dispatches are expected to be required to balance energy needs rather than ramp rate requirements;
2. When wind power ramps down more rapidly than can be handled via EMMO, the AESO must dispatch available contingency reserves to produce energy in order to replace the lost wind power. This will allow the AESO to manage the AIES for wind ramp down events in a manner that is consistent with how sudden reductions in generation from other resources are currently treated; and
3. When wind power ramps up more rapidly than can be handled via EMMO, the AESO then will utilize a wind power management approach to control the wind ramp up events.

Specifically, the wind power management approach means that the AESO will temporarily limit real power production from wind aggregated generating facilities when AIES conditions are such that the total amount of available wind real power cannot be accommodated. Wind power management is primarily a method to allow the AESO to control and manage rapid ramp ups from those facilities when all other control methods have been exhausted. The AESO proposes that this management and control must be effected by the implementation of new ISO rules.

Wind Power Management Rules Applicability

The new wind power management rules will apply to any **new** wind aggregated generating facilities and any ones **in existence and operating** under *Wind Power Facility Technical Requirements* dated November 15, 2004. This is consistent with the Wind Technical Rules.

The wind facilities built under the AESO’s *Technical Requirements for Connecting to the Alberta Interconnected Electric System (IES) Transmission System, Part 1: Technical Requirements for Connecting Generators* dated December 2, 1999 are exempt from the new wind power management rules.

Implementation through Regional ISO OPPs

Virtually all of the operational wind aggregated generating facilities in Alberta are connected in the South Alberta area, and ISO OPP 515 is already in place and addressing certain operational and system constraint matters as applicable in that area.

The AESO is proposing to amend ISO OPP 515 to include the provisions necessary to implement wind power management. The new provisions will describe and calculate the system wind power limit and how each wind aggregated generating facility subject to ISO OPP 515 will receive a pro rata share of the overall system wind power limit. Each facility’s pro rata limit will be recalculated on an interval basis and the limit will be removed when all wind energy can be accommodated.

The AESO also is currently developing a new ISO OPP 526 – “Anderson Area Operation”, to include the one wind aggregated generating facility that is currently outside the South Alberta area. The timing to initiate stakeholder consultation for ISO OPP 526 is in Q2 2011.

Should you have any questions with respect to this letter, please feel free to contact Jacques Duchesne at (403) 539-2518.

Sincerely,

<Original signed by>

Kelly Gunsch
Vice-President, Market Services