Implementation of MOF Recommendation Paper
Stakeholder Comment Form

Comments From: Nexen Inc.
Date: April 20, 2009
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1. WIND POWER FORECASTING – Centralized Forecasting Model	
The AESO recommends that a centralized forecasting model be implemented in Alberta. Reasons for Stakeholder Position:	√ Support ☐ Oppose ☐ Indifferent
2. WIND POWER FORECASTING – RFP ASAP	
The AESO recommends that solicitation (RFP), evaluation and selection of a centralized forecasting service provider should proceed as soon as practicable. Reasons for Stakeholder Position:	√ Support ☐ Oppose ☐ Indifferent
3. WIND POWER FORECASTING	
The AESO will commence consultation on rules, procedures, standards and technical requirements regarding submission of wind generator forecast data/information including; data requirement such as turbine availability and on-site meteorological data, communication protocols, and data quality required from wind generation facilities (or individual forecasters) to deliver forecasts to the AESO. Reasons for Stakeholder Position:	√ Support ☐ Oppose ☐ Indifferent

4. WIND POWER FORECASTING – Data Management	
As part of its forecasting research and development work, the AESO will continue work to determine the capability, resources, systems and time required to perform the data management	√ Support ☐ Oppose

function. In parallel, the AESO will include data management as an optional requirement in the wind forecasting RFP. Reasons for Stakeholder Position:	☐ Indifferent
5. FORECASTING ACCURACY	
The AESO will monitor forecasting, market and operational results and develop measures of forecasting accuracy. The AESO intends to leverage available data and forecasting resources toward this end. Reasons for Stakeholder Position:	√ Support ☐ Oppose ☐ Indifferent
6. FORECASTING - TRANSPARENCY	
The AESO considers that system or aggregate wind forecasts should be transparent and made available to all market participants, particularly near term to real time. Reasons for Stakeholder Position:	√ Support ☐ Oppose ☐ Indifferent
7. WIND POWER MANAGEMENT – Curtailment Protocol	
The AESO seeks stakeholder feedback on the work group recommendations to use a Potential MW Protocol and specifically would like input from stakeholders regarding practicality and risks associated with this option. 1. Pro rata allocation of the system wide wind curtailment among Wind Power Facilities (WPF) 2. Use of Potential MW Capability to allocate for each WPF 3. Curtailments should be re-assess and re-allocate every 20 minutes if the limit for any one WPF has changed by greater than 5MW Reasons for Stakeholder Position: Generally Nexen would like to see the AESO examine market solutions to manage any market issues rather than rely on directives and involuntary curtailments. For instance the AESO may introduce new products or ancillary services which could mange the ramping of wind generation.	☐ Support √ Oppose ☐ Indifferent

8. WIND POWER MANAGEMENT - Supply Surplus

The AESO solicits input from all stakeholders on the proposed supply surplus protocol and proposed modifications to OPP 103 provided below.

☐ Support
√ Oppose
☐ Indifferent

(1) Include wind power facilities and co-generation facilities in OPP 103 procedures with co-generation to be subject to Minimum Operating Level (MOL) requirements
(2) Establish a Minimum Operating Level (MOL) for each asset and, where possible, assets should not be dispatched below their MOL.
(3) Refine MOL definition to include new constraints not included in Minimum Stable Generation[1] (MSG) but that affect the asset's ability to operate at or below a threshold. MOL is a physical operating limit (not an economic limit) for an asset constrained by legal/regulatory, environmental, health and safety, equipment reliability, operating level required to serve dispatched ancillary services, or operating level required to prevent damages to third party equipment. Examples of physical operating constraints for types of generation and import/export are included in the WG paper (Appendix A).
(4) Develop a mechanism for pool participants to declare and submit the MOL. It is expected that the need for, approach and frequency of declaration may vary among generators and will need to be defined.
(5) Revise the current "inflexible block" definition. The definition of "inflexible block" will need to be amended as follows:

"inflexible block" means a block of energy that may be dispatched on or dispatched off, but not partially dispatched on, <u>except for a $0 offer block it may be dispatched to the asset's MOL.</u>

Definition of "flexible block" does not require any changes since it accommodates the proposed $0 SMP management protocol.

(6) Provide market indication of supply surplus conditions (similar to supply adequacy situations) to provide market participants an opportunity to take voluntary actions in the face of potential $0 SMP conditions and also become aware that an out-of-market dispatch to clear the energy imbalance could be forthcoming.

<u>Reasons for Stakeholder Position:</u>

This MOF paper suggests a major change to OPP 103, where the exemption for “generating units primarily serving load or steam process, including those supplying to industrial systems with industrial system designation” will be removed and replaced with a requirement to be directed to a Minimum Operating Level (MOL) in the event of a surplus of supply. Nexen submits that the unique characteristics and economics of non-dispatchable cogeneration facilities suggest that the original exemption should be preserved.

[1] ISO Rule definition for MSG is “minimum stable generation” which means the minimum generation level that an asset can be continuously operated at without becoming unstable.

The MOF paper suggests the objective of the proposed changes are intended to support fairness and efficiency between market participants while meeting the AESO's technical and operating requirements. While Nexen appreciates the proposed changes may provide some benefits to the AESO in the management of the AIES, the inclusion of ISD co-generation units does not support the intended fairness between market participants.

Nexen submits electric generating facilities and co-generation facilities are drastically different types of facilities which cannot be treated in the same manner. While similarities may exist in offer price, as some co-generation facilities that have surplus energy may offer that surplus into the market at $0, but that is where the similarity ends.

Generally the primary purpose of a cogeneration facility is to produce steam which is then used to produce another product. In the case of Nexen's Long Lake facility the steam is injected into the ground in order to extract bitumen. Electricity production is a by-product of the operation rather than the primary output. As steam production is a primary input into bitumen production, any curtailment in that production would have a serious negative impact on the organization.

The primary motivator of an electric generator is to generate the maximum amount of energy and corresponding revenues as sold through the power pool. Nexen acknowledges that curtailment of energy production for an electric generator may cause some economic harm. Curtailment of electricity and steam production for a co-generation facility on the other hand would be substantially greater and disproportionate to that of an electric generator. For instance:
- as noted above, the reduction or loss of the primary revenue generating output i.e. oil production, forestry products, petro-chemical production would be far greater than the loss of the energy sales to the AIES
- sudden curtailment in generation may also cause catastrophic failure to integrated equipment processes (which may include incremental costs associated with the recovery from an outage, replacement of equipment etc.)

Nexen submits this lopsided outcome does not support the MOF's intended objectives of advocating equity and fairness among all participants. The integrated nature of a cogeneration facility is such that steam and power cannot be made separately which further supports an argument in favour of a continued exemption for cogeneration facilities from any curtailment protocol and was, presumably, a critical factor in the initial decision to include the exemption in the original OPP 103.

Nexen is also concerned that the proposed policy shift is also unduly harmful to those participants that have or are about to make significant investment in co-generation technology. As discussed above cogeneration and accompanying processes are exceedingly integrated, which rely heavily on an extremely reliable source of steam production. The principles and exemptions outlined in OPP103 provided direction to participant's which in turn was used in the economic analysis, facility design and eventual investment of capital. The fundamental policy change as proposed for OPP 103 can have a significant impact on the operational and financial viability of the facility along with future investment decisions. Nexen submits implementing a policy with such a negative impact on stakeholders is not reasonable and strongly recommends that the exemption as outlined in the current OPP 103 be upheld.

Nexen appreciates that as a result of the anticipated increase in the amount of $0 offer energy on the AIES, the AESO felt is necessary to develop and update its processes and procedures to ensure compliance with its mandate. The rationale to now remove the exemption for co-generation facilities is not fair and equitable and Nexen submits that the circumstances and rationale which supported the original exemption continue to be valid.

Nexen appreciates the opportunity to comment on the AESO's MOF proposal and hopes that the AESO will continue to engage all stakeholders in developing a solution which satisfies the needs and concerns of all stakeholders.

9. SUPPLY SURPLUS – protocol

The Supply Surplus work group also developed the following protocol respecting OPP 103:

☐ Support
√ Oppose
☐ Indifferent

Step 1: Curtail opportunity services including import transactions.

Step 2: Take the following actions, taking into account the transmission system operating and reliability constraints and an objective of rotating the curtailments amongst market participants where possible:

a. Curtail flexible $0 blocks, by pro-rata assignment,

b. Where wind generation is required to be curtailed pursuant to (a), assign the curtailment amongst each individual wind power facility using the wind power management protocol,

c. Curtail inflexible $0 blocks to the asset's MOL.

Step 3: Curtail an asset to 0 MW (go off line), considering the asset's minimum off time.

Reasons for Stakeholder Position:

Please see the comments provided in Section 8 above.

10. Technical Requirements and Standards	
Given the expected difficulty and expense in modifying and/or retrofitting some existing wind power facilities, the WPFTR (s 1.2 g) provided an exemption from the 2004 requirements for any facilities that interconnected under the technical requirements that were in effect prior to November 15, 2004 but specified that these facilities would be required to comply with the WPFTR if the facilities underwent a refurbishment or major upgrade. The AESO considers that this approach is reasonable and prudent but expects that the issue of applicability should be discussed in the rules and standards development and consultation phase. This will include a discussion of the potential grandfathering of certain wind facilities based on the terms and conditions of interconnection agreements and other relevant information. Reasons for Stakeholder Position:	☐ Support ☐ Oppose √ Indifferent

11. ADDITIONAL COMMENTS

Please return this form with your comments by April 17, 2009 to:

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