



# **AESO Consultation Summary**

## **Operating Reserve Market Redesign Concepts – for Discussion**

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July 30, 2008

## **Introduction**

### **Operating Reserves Market Redesign Project**

The AESO has been operating a market for the procurement of operating reserve products – specifically regulating, spinning and supplemental reserves – since 2001. While a number of features of this early market design have worked, there have been long standing issues including the impact of the AESO as the single buyer in the market as well as some contract terms. To evaluate the state of the OR market and commence discussions about how to improve the market framework, the AESO initiated a market redesign project. A number of discussion papers have been created for your reference. This brief provides an update regarding the project and is intended to solicit input and feedback prior to the AESO creating a comprehensive market design recommendation. Given that there are a number of design considerations for this project, an ongoing dialogue with participants will yield the best design product.

### **Market Issues**

In October, 2007 the AESO issued a Discussion Paper entitled Operating Reserve Market Improvements. This Discussion Paper outlined the existing market design and listed issues with the existing design that stakeholders have identified over the last number of years. These included the impact of the equilibrium pricing methodology, perverse contract terms, the AESO influence on process, market liquidity on competing platforms, transparency of Over the Counter (OTC) procurement, influence of Hydro PPA, and complexity of the market relative to its size.

### **Market Concepts and Opportunities**

In December, 2007 the AESO issued a follow-up Discussion Paper entitled Operating Reserve Market Redesign Concepts which provided details regarding a two phased approach to redesigning the operating reserve market. The discussion paper identified a two phase redesign project. Phase I contemplated more immediate and incremental changes to the existing design that could take place in 2008 while continuing to utilize the NGX platform, with procurement of OR continuing to take place on a day ahead basis. Phase II was a longer term initiative whereby the operating reserve market would be aligned with the energy market (T-2) and would require two to three years for consultation and implementation.

### **Market Design Working Group**

Between January and July 2008 the AESO met and consulted with stakeholders regarding the existing design, the list of identified issues, the redesign concepts, and possible design

changes to address market issues. During stakeholder consultations, the participants were focused on a Phase I option, with the Phase II option deferred for consideration later. Because the consultation yielded a number of specific component discussions, the AESO has attempted to summarize the discussions to date by component and in a total design framework.

The attached table represents a design summary for Phase I, and is not intended to represent a view of the working group. All industry participants, including those of the working group are welcome to provide comments on this summary as a whole or in part.

## **Phase I Update**

The summary table below provides an overview of the issues in the current design, proposed design options to address the issues and some comments that have arisen during the stakeholder meetings. The summary table is intended to provide an overview of progress thus far for consideration and feedback. In comparison, the table is not intended to replace a more comprehensive discussion or recommendation paper that will provide more details of the overall market design. However, the table provides an opportunity to review where the AESO, with assistance from the working group, has taken the design thus far and a summation of the design framework. The AESO will follow the standard rule change consultation process, but will also need to work with NGX for changes to the contract and trading terms and proposes to do so on the proposed timeline.

Based on the feedback received by the AESO on the Phase I summary, the AESO will commence work on a comprehensive recommendation paper. The next steps in the consultation process are industry review and comment on the recommendation paper, targeted for September, followed by a formal AESO response to recommendation paper comments, targeted for October, concluding with the AESO applying to the AUC for review and approval of operating reserve ISO Rules, targeted for January 2009.

The AESO will work with NGX to initiate the necessary information technology changes required to implement the new market design once the design specifications are completed. This should enable the new market design implementation date to be in the first or second quarter of 2009 shortly after the market design is finalized and ISO rules have been implemented. Prior to implementation the necessary contractual changes will also have to be made to the NGX Agreement.

The AESO is seeking comment on all aspects of the Phase I option to understand any issues with the framework, pricing, model or trading that have been discussed to date. In addition, the AESO would also like to pose the following questions to stakeholders:

- what should be the daily sequence for market closes on NGX as well as the timing between each of the market closes?;
- should the AESO use contracted standby providers to the extent the AESO is unable to secure all of its active reserve requirements, prior to conscripting active operating reserve providers?;

- to the extent sellers are unable or unwilling to satisfy established “selling logic” (as outlined in the summary table below) or to sell volumes in all hours that the AESO requires base load on and off peak volumes, should these sellers be permitted to transact volume on NGX and what criteria should be used in prioritizing these non standard offers?

## **Phase II Update**

During the consultation that has taken place in the first half of 2008, the majority of the operating reserve working group expressed concern with a T-2 (Phase II) operating reserve market and a strong preference towards incrementally changing the existing design. Items identified regarding a T-2 market included: complexity and logistical challenges associated with a T-2 operating reserve market acting as a barrier to entry for participants, the benefits for a generator establishing operating commitments a day in advance and therefore being able to position themselves accordingly, day ahead operating markets utilized effectively in other jurisdictions, and operational challenges associated with managing hydro systems. At this time the AESO has deferred a Phase II review given that Phase I is the near-term priority. The AESO’s considerations regarding the need for a Phase II review of the operating reserve market will include: results of a 6 month review of Phase I changes, progress made on the challenges associated with the interconnection of intermittent generation, introduction of frequency responsive reserves (FRR), and comments/feedback received from industry.

## **Consultation Process:**

The AESO is seeking comments on the attached Phase I summary design components and overall approach by August 22, 2008.

The AESO welcomes industry participants that require clarification on the any of the attached content to contact Paul Barry directly at 403 539 2737 ([paul.barry@aeso.ca](mailto:paul.barry@aeso.ca)).

**Table 1: Overview of Operating Reserves Market – Current and Proposed Design Summary Based on Working Group Input – For Discussion**

<b>Element</b>	<b>Current Design</b>	<b>Issues</b>	<b>Proposed Design</b>	<b>Comments</b>
<b>Framework</b>	<ul style="list-style-type: none"> <li>• Daily and term markets</li> <li>• Active and standby products</li> <li>• NGX platform supplemented by OTC</li> <li>• Equilibrium pricing/pick market on NGX</li> <li>• Pay as offered OTC</li> <li>• AESO single buyer</li> </ul>	<ul style="list-style-type: none"> <li>• AESO discretion used in procurement process</li> <li>• Complex</li> <li>• Not aligned with energy market</li> <li>• AESO as single buyer</li> <li>• Perverse incentives</li> </ul>	<ul style="list-style-type: none"> <li>• Single procurement platform</li> <li>• Auction format. All products including profile are traded through the NGX platform using a pro-forma contract</li> <li>• AESO submits volume bids, not prices</li> <li>• Single day trading with morning trading schedule and fixed daily close times for each product</li> </ul>	<ul style="list-style-type: none"> <li>• NGX creates trading indices for volumes</li> <li>• Create single framework for transactions (no OTC procurement)</li> <li>• Equitable conscription methodology/option necessary to ensure OR suppliers are treated fairly and volumes can be secured</li> <li>• “Market suspension” necessary for market failures</li> <li>• Eliminate AESO influence on prices</li> <li>• Facilitates participation by others (self procurement, smaller players)</li> <li>• AESO will enable third party asset substitution</li> <li>• OR markets open during the morning only</li> </ul>
<b>Products</b>	<ul style="list-style-type: none"> <li>• Day/s Ahead or Term Active, Standby</li> <li>• Reg, Spin, Sup</li> <li>• On/Off peak</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient Liquidated Damages (LD)</li> <li>• Liberal Force Majeure (FM) terms</li> </ul>	<ul style="list-style-type: none"> <li>• Continue with Active and Standby on/off peak products</li> <li>• Compliance on dispatch</li> </ul>	<ul style="list-style-type: none"> <li>• All products are traded on NGX only</li> <li>• Product types are the same as today</li> <li>• All products (active and standby) traded as block products - on/off peak</li> <li>• Profile requirements traded as on/off peak products, with selling logic to avoid cherry picking</li> <li>• Offers that are inconsistent with selling logic are considered last</li> <li>• No Virtual Unit trades</li> <li>• LDs and FMs discussed below under contract terms</li> </ul>

Element	Current Design	Issues	Proposed Design	Comments
<b>Pricing</b>	<ul style="list-style-type: none"> <li>Exchange-traded products entail equilibrium and a pick market</li> <li>OTC trades entail pay-as-offered pricing</li> </ul>	<ul style="list-style-type: none"> <li>Bids, cancelled trades distort the price</li> <li>OTC trades not included in market index</li> <li>Complexity of indexed and fixed price components</li> <li>Discretionary settlement cap at AESO bid</li> </ul>	<ul style="list-style-type: none"> <li>Active indexed to pool price</li> <li>Active non profile requirements cleared at marginal pricing for active</li> <li>Active profile requirements pay as offered</li> <li>Standby activation priced at Active clearing price</li> <li>Standby sellers compete by offering a premium. Premium to be pay as offered for standby</li> <li>Fixed daily close</li> <li>Hourly published price for indices</li> <li>OR settlement cap at \$999/MWh</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Hourly settlement price transparent</li> <li>Indexed to PP creates OR/energy synergies</li> <li>Marginal pricing leads to economically efficient results for homogeneous products (like active)</li> <li>Pay as offered proposed for standby premiums to reflect different products – i.e., different probabilities of activation. Priced as call option with activation indexed to pool price and fixed price premium</li> <li>Pay as offered for profile volumes to reflect different products</li> <li>OR settlement cap aligns with energy market cap</li> <li>Force Majeure incentives may be created without checks. See below</li> <li></li> </ul>
<b>Procurement</b>	<ul style="list-style-type: none"> <li>In advance by AESO</li> <li>5 clearing days (D-5 to D-1, plus OTC)</li> <li>Term Products</li> <li>Fixed Close for market followed by OTC</li> <li>Business practice re 5 MW minimum block size</li> </ul>	<ul style="list-style-type: none"> <li>Inefficiency due to forecast errors</li> <li>AESO is single buyer</li> <li>AESO bid becomes price cap in clearing market, with OTC option available</li> <li>Timing misalignment with movement of energy market to T-2.</li> <li>Discretionary decision making regarding &lt;5MW block size sales</li> </ul>	<ul style="list-style-type: none"> <li>Continue to buy product as required to meet WECC requirements</li> <li>AESO bids volumes not prices to determine market trade needs</li> <li>Single Day Ahead trading for all products including profile</li> <li>Fixed Close for markets</li> <li>Blind Offers</li> <li>Minimum 5 MW sales with 1 MW increment block size offers</li> <li>Marginal MW requirement rule</li> <li>Offer blocks can be flexible or in flexible</li> </ul>	<ul style="list-style-type: none"> <li>AESO influence removed</li> <li>No OTC procurement</li> <li>Hydro PPA submits offers as other generators would</li> <li>Self procurement facilitated through standing offers and financial trades</li> <li>AESO consider tariff matters; tariff structure and deferral a/c - Q4 08 and Q1 2009</li> <li>Profile sold as on/off peak blocks with selling logic</li> <li>Random close not required given intra day and daily price discovery and complexity of 18 to 54 product closes per day</li> <li>Create standing offer option</li> <li>Blind session should encourage standing offers without limiting price discovery on daily basis</li> <li>Transparent offers more consistent with random closes</li> <li>Article 11 used for compensating conscripted providers. Will conscript to ensure sufficient active. Also see market suspension below</li> <li>Forecast efficiencies for regulating reserve requirements diminish as integration of intermittent generation increases</li> </ul>

Element	Current Design	Issues	Proposed Design	Comments
<b>Dispatch</b>	<ul style="list-style-type: none"> <li>• All active dispatched</li> <li>• Standby on call as required</li> </ul>	<ul style="list-style-type: none"> <li>• Energy offers must reflect OR obligations in advance. Issues with asset substitution</li> </ul>	<ul style="list-style-type: none"> <li>• All active dispatched as today</li> <li>• Standby dispatched as required (as today)</li> <li>• Change dispatch merit order of standby providers - based on lowest premium dispatched first</li> </ul>	<ul style="list-style-type: none"> <li>• The lowest priced premium provider, by way of his offer, is stating a preference amongst the other standby providers to be an active operating reserve provider and is accordingly the first provider to be dispatched should the service be required</li> </ul>
<b>Other Contract Terms</b>	<ul style="list-style-type: none"> <li>• No Must Offer</li> <li>• LDs at 1 hour replacement costs</li> <li>• Price FM due to energy market incentives</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate incentives for delivery</li> <li>• Impact on standby and other providers</li> <li>• Considered bilateral contract</li> <li>• Bids, cancelled trades distort the price</li> </ul>	<ul style="list-style-type: none"> <li>• No must offer (as today)</li> <li>• OR to mimic Specified Penalties (Rule 019 - AUC)</li> <li>• Continue to utilize Force Majeure definition in NGX contract (not OTC definition)</li> </ul>	<ul style="list-style-type: none"> <li>• Design market failure or market suspension rules</li> <li>• Tighter job on compliance</li> <li>• Consider Rule 19 penalty matrix to prevent further perverse delivery incentives</li> <li>• OR terms and conditions reflected in NGX contract and ISO rules</li> </ul>