

Memorandum

To: IESO Stakeholder Advisory Committee
From: Bruce B. Campbell
Date: November 23, 2007
Re: SAC Agenda Item #4 - Day-Ahead Electricity Market

Throughout 2007 the IESO has been examining potential designs for day-ahead mechanisms for the Ontario electricity market. As stated in the Day-Ahead Stakeholder Engagement Plan SE-21 ([SE -21 DAM Evolution Plan-Revised](#)), the IESO will be providing a report on its progress on this initiative to the Board of Directors in December. Leading up to the Board meeting, a substantive discussion on the topic has been scheduled for the December 5th Stakeholder Advisory Committee meeting. In preparation for that discussion, this memorandum sets out both the background information on this matter and proposed management recommendations.

Background

On August 10, 2007, the IESO published a day-ahead discussion paper that outlined five options for improved day-ahead mechanisms ([IESO Staff Report](#)). The report was summarized in a presentation to the SAC on August 22, 2007 ([SAC August 22, 2007 DAM Presentation](#)). Since that SAC presentation, the IESO and a cross-section of stakeholders have met numerous times to discuss, explore and advance the understanding of the options, and in particular of the third option, an unconstrained DAM without day-ahead CMSC. The IESO published a Status Paper on the subject on November 5th ([DAM Status Report](#)) which was discussed with stakeholders at an open session on November 12th. In addition, the IESO has convened two technical support groups with stakeholders dedicated to exploring specific aspects; one to address the nature of potential cost guarantees to dispatchable participants in the market, and the other to assist the IESO in preparing a cost/benefit analysis of day-ahead alternatives.

The IESO appreciates the contribution made by stakeholders in advancing this matter – that work has been central to the progress made in exploring the potential design of effective day-ahead mechanisms for Ontario.

Based on that progress, the IESO continues to believe that Option 3 remains the most promising, and accordingly has, for the time being, put aside further investigation of three of the five options reviewed in the August discussion paper. Those three are:

- Option 2 – a voluntary energy forward market. There are markets already available for purely financial day-ahead hedging. However these markets are very thinly traded - frequently not producing trades for many hours - primarily because the current state of government and OPA contracts and regulations has greatly reduced the effectiveness of this type of market. An IESO-administered voluntary energy forward market would be unlikely to be more actively traded than the other financial market alternatives available at this time. As such, on its own, Option 2 would not afford significant opportunities for improvements in the efficiency of the industry. However, in the event Option 3 does not go forward, Option 2 could re-emerge as a viable model if it is seen as a necessary and complementary element to other emerging industry initiatives such as load serving entities.
- Option 4 – the DAM designed but not implemented in 2004. This complex and expensive DAM project, which included day-ahead CMSC payments, was completed up to the detailed design phase including market rules that were written but not approved. It is a design that maximized the potential for a uniform energy price-based day-ahead market to provide financial commitments that align with real-time physical operation. This design was not approved by the IESO Board in 2004 for two reasons – its cost and complexity, and the changing electricity environment at that time with the move to the hybrid market. The IESO believes that efforts at this time should be directed towards examining the possible efficiency improvements from a simpler DAM design.
- Option 5 – a comprehensive DAM with locational pricing, similar to that of NYISO. While there is some stakeholder support for the market efficiencies that would flow from a move to locational pricing (LMP), including from the Market Surveillance Panel, that support is not widespread. At the same time, the cost of this option and the associated changes to the real-time systems would be significant and time-consuming. In short, the efforts required to move Ontario from a uniform price methodology to locational pricing and construct a day-ahead market in the process, would not be welcome at this time. Rather, the IESO believes that efforts should be directed towards examining the efficiency improvements that could be achieved by a relatively simple DAM design under the current uniform energy price regime.

As illustrated by these alternatives, the various day-ahead market options represent points on a continuum of degrees to which the financial positions from the day-ahead market align with the physical operation of the system. In exploring Option 3, the IESO is attempting to strike the appropriate balance between complexity and effectiveness in achieving reasonable financial and physical alignment. The features proposed for Option 3 include:

- IESO nomination of default demand into the market to create as complete a market perspective as possible, and,
- A production cost guarantee design and other potential features that would serve to augment the current real-time congestion payments and therefore

address the potential risks of misalignment between the day-ahead physical world and the unconstrained pricing world.

Obviously features could be included or dropped which would move Option 3 either in the direction of Option 2, likely reducing the effectiveness of the design, or towards a more complex Option 4 design with higher costs. The IESO believes it has struck an appropriate balance in the current Option 3 proposal, and as such is proceeding with analysis of the benefits such a design would yield.

To create an effective day-ahead mechanism, it will also be necessary to adjust current industry arrangements such as existing centrally-held contracts and regulations on OPG assets that would otherwise be an impediment to day-ahead market participation. If market incentives for participation do not exist, and if the terms of existing contracts or regulations are not adjusted appropriately¹, then contracted and regulated supply is unlikely to appear in a day-ahead market. Without that supply, and with the IESO forecasting the default demand for inclusion in the day-ahead market, the potential exists for a significant mismatch between supply and demand. This concern was raised in the IESO's November 5th discussion paper, and is a particular issue on which the views of the SAC will be sought. This challenge is not unique to the Option 3 design, but would apply to any day-ahead market design that attempts to achieve alignment between day-ahead financial positions and the outcomes of the next day's operation.

Attached as Appendix 1 is a description of the cost-benefit analysis (CBA) the IESO is undertaking for the day-ahead mechanisms. As stated in the appendix, the benefits are largely expected to materialize in three domains; the benefits of more efficient generator commitment decisions in the market, the benefits of more price-responsive demand from greater day-ahead price transparency, and the benefits of improved alignment of electricity market activities with the day-ahead gas nomination cycle. While the stepping-off point for the CBA is the Option 3 design, with the benefits being attributable to specific features of the day-ahead market, the CBA results should also provide a solid basis for evaluating the worth of various components of the design. For example, the benefits attributable to more efficient generator commitment would be applicable to performing that function without the other market features, provided the process could be run as effectively in isolation.

The remaining Option 1 is simply a forecast of price day-ahead without any associated financial commitments. Some investigation of this option has been undertaken. Various stakeholders have expressed an interest in this option as an interim measure until a DAM is in place or possibly even as a permanent feature. Other stakeholders have expressed reservations with the IESO forecasting price in the market it operates.

While stakeholders have engaged in the discussions on day-ahead mechanisms over the fall, there are at this time very few strongly held views on the Option 3 DAM, either for or against. The written comments received in October indicated that there is some support, and overall a willingness to continue work on the design and evaluation of this DAM. Attached in Appendix

¹ Note that the OPA contracts contemplate such adjustments being made in the event of the implementation of a DAM.

2 is a summary of comments we have received from stakeholders throughout this process as well as a brief responses from the IESO on this input.

Work is continuing on several fronts. However it has required some extension of the original timeline to address two areas:

- First, many stakeholders have indicated to us that more time is required for them to determine the effects of this DAM on their businesses, in particular around the production cost guarantee, and that to adequately assess the proposal they need to understand the design in greater detail than the IESO was originally intending for the initial high-level decision anticipated for December.
- Second, the work on quantification of the benefits of this DAM, necessary to support the cost/benefit analysis, has been more challenging than originally anticipated.

Recommendations

IESO management is proposing to recommend to the IESO Board that the Option 3 DAM continue to be investigated. The design will continue to be discussed and firmed up, the expected benefits will continue to be evaluated and quantified, and the estimates of costs to the IESO and participants of implementing this option will be further explored and refined. This will lead to a recommendation to the IESO Board by June 2008. At that time, if the review of Option 3 supports its implementation, the Board would be provided with a business case and asked to approve implementation.

In parallel with the DAM efforts, IESO management will be initiating a separate Stakeholder Engagement Plan regarding possible implementation of Option 1 (the day-ahead forecast of real-time prices). Three areas require additional stakeholder input:

1. Whether it is appropriate for the IESO to produce a price forecast in the market that it operates;
2. The expected benefits - to participants, consumers and the market – of a price forecast; and
3. The forecast methodology and performance.

These investigations would get underway in January 2008, with a target of bringing a recommendation to the IESO Board in April 2008.

Bruce B. Campbell

Attach.