



INTERNATIONAL

November 22, 2005

Mr. Bruce Boland  
Senior Vice President – Corporate Affairs  
Ontario Power Generation  
700 University Avenue  
Toronto, Ontario M5G 1X6

Dear Mr. Boland:

We are writing in response to your request that we provide you with our views on the Independent Electricity System Operator's (IESO's) proposed Day Ahead commitment process, which features a limited day-ahead (DA) commitment for imports and some internal generators with reliability guarantees.

We and our firm have been involved in the Ontario electricity market design process since its inception. We have worked on market design issues in every market in North America and in many other markets in Europe, Latin America and Australia. We also have specific considerable experience with electricity markets in neighboring jurisdictions in the U.S., two of which have implemented measures similar to the IESO's proposals in the past.

By way of a general impression, a design principle that appears to be missing from the IESO's proposals is that economics and reliability do in fact go hand-in-hand. Sufficient generation from inside and outside the province can be made available if prices are not distorted. While we recognize that the IESO feels that it needs more short-term controls to guarantee short-term reliability, these should complement and not eliminate price signals, which are the only viable long-term method of protecting reliability in an electricity market.

IESO has proposed to create a DA commitment process for the purpose of enhancing reliability assurance by committing imports and non-quick-start generators on a day-ahead basis. The commitment will not constitute a financially-binding DA market, but will instead result in offer-based Import Offer Guarantees (DAIOG) and cost-based Generator Cost Guarantees (DAGCG). Imports and generators so scheduled will be committed to run out-of-merit in real time (RT) and will not be eligible to set RT prices. Although a

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generator may elect to decline the guarantee payment for a given day, this election will not limit the IESO's unilateral authority to commit and constrain the generator to operate. IESO has proposed running the DA commitment and providing the guarantees every day, irrespective of need.

We have a number of concerns regarding the proposal. While it may appear to benefit reliability in the short term, fundamentally we believe that such a system will ultimately prove unsuccessful, as have other similar proposals in other markets. In the meantime the IESO proposal could distort short-run prices, thus reducing both demand side and supply side response and endangering long-term reliability.

## CONCERNS WITH THE IESO PROPOSAL

**Combining DA commitment with a single (RT) settlement is fundamentally unworkable.** Most markets that started out with such a system, such as PJM and New England, have moved to multiple-settlement systems because of unmanageable problems resulting from not having binding market prices set in the DA commitment. We see two far-reaching aspects with the underlying structure of the proposal. First, significant price distortions can result when an excess of generation is unable to set the real-time price, eliminating the market signals that generator owners need to keep generation available, and that developers and investors need to bring new resources online. More recent and effective markets have multiple settlements built in. Second, the separation of commitment from pricing creates inevitable perverse incentives, creating incentives to influence RT prices. Although penalties can reduce these incentives, relying on a penalty system to regulate prices is inefficient, selecting appropriate penalty levels is difficult, and the administrative and monitoring costs are high. Market designs employing DA commitment with a single RT settlement, such as those initially employed by PJM and ISO-NE, have been highly problematic and as a result have been replaced with multiple-settlement systems.

If IESO believes that it must implement some form of reliability guarantee mechanism before next summer, and that it is not possible to implement a full DA market by then, prudence suggests that the mechanism should be limited in extent to hours where a reliability commitment intervention is truly needed to protect reliability. Without such a limitation, the unintended consequences of the IESO's proposals, such as incentives to game, reduced demand response, reduced generator availability, and poor investment signals could rapidly increase.

**Unspecified manual commitment procedures give IESO too much leeway to over-commit generation:** The IESO's proposed rules would allow IESO to commit generation and imports, and pay these suppliers their costs (for the generators) or their offers (for the imports). This poses a significant problem for suppliers in the auction if they believe the IESO has an interest in lower spot prices. If the IESO over-commits against actual load, for example, this results in excess energy being produced in an hour that cannot set the clearing price, but which will be paid "on the side" and outside of the auction. This over-commitment will result in an artificially depressed peak prices in the real-time market—as well as depressed prices at other steep portions

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of the supply curve, e.g., the transition from coal to gas—while at the same time increasing uplift costs which are unhedgeable.<sup>1</sup>

The distorted prices that can result should be of concern to the IESO. It should also be worried about the eventual reliability impacts. Over-commitment and suppressed peak prices send the very strong signal to the market that 1) peaking capacity is not needed or valued and 2) the Province is not serious about load management. Given the capacity situation in Ontario, neither of these messages is the right one.

**The IESO proposal is likely to increase the quantity of supply (internal or import) ineligible to set price in real-time:** The Ontario electricity market was originally conceived around the core concept of a single price auction, in which all suppliers would be paid the clearing market price, set by the bid of the highest cost unit of supply needed to meet demand. This auction format is simple, transparent, and efficient. Unfortunately, this concept has been undermined by rules that exclude imports from setting price, as well other adjustments. The IESO DA commitment proposal has the potential to further undermine the fundamental economics of the auction and with it the integrity of the market by creating large quantities of price-taking imports and non-price setting internal generation. Furthermore, this mechanism could send counterintuitive price signals to the market during periods of tight supply as a result of the increase in non-price setting generation. Similar design flaws in other markets have suppressed investment in new capacity, potentially resulting in future reliability problems (surely a major problem for Ontario). These flaws have also resulted in inefficient commitment and dispatch and hence higher system costs, and higher emission levels as more plants are backed down to minimum levels where emissions are usually highest.

## EXPERIENCE IN A NEIGHBORING MARKET

The consequences of changes in the market design can be hard to predict. The use of a DA commitment with guarantees coupled with real-time pricing is strongly reminiscent of the operations of the ISO New England (ISO-NE) system before Standard Market Design (SMD) was implemented in New England. ISO-NE therefore provides a good case study of the sorts of problems that can be created by the type of system proposed by IESO.

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<sup>1</sup> We are familiar with the argument that depressed Ontario prices would be unlikely to persist because such a condition would invite marketers to export power in real time to more expensive markets such as New York. While that might be true if the export markets were extremely efficient, barriers to cross-border trade, such as the risks associated with the lack of price certainty and penalties for failed transactions, as well as differences in business rules between markets, generally prevent such arbitrage from being effective. Furthermore, exports during times of scarcity face the risk of being cut and therefore being unable to affect peak prices. Our own analysis of interface flows and RT price differences between Ontario and NYISO shows that trade at that boundary is highly inefficient. In our view these market inefficiencies will prevent increased exports from curing the pricing problems created by the IESO's proposals.

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Before SMD was implemented, ISO-NE had only a single real-time energy price. For reliability purposes, ISO-NE also had rules in place that allowed it to constrain on some generators for reliability purposes. ISO-NE, like IESO, lacked sufficient automated commitment tools. These factors, along with inefficient bidding by suppliers caused by the underlying incentives associated with combining DA commitment and real-time settlement, resulted in the commitment of substantial excess thermal capacity day-ahead, which was then often kept backed down to low operating levels where it could not set price. Clearing prices in the most extreme peak hours were often substantially understated (by over 50%).

ISO-NE's independent market adviser (David Patton) and other outside economists highlighted the problem and brought it to attention of FERC. ISO-NE initially fought implementation of the reforms recommended by Patton regarding ISO-NE's over-commitment decisions on the basis that doing so would further delay the start of its LMP-based DA market. ISO-NE finally came to support the reforms, and FERC, which had indicated a strong interest in ensuring that peak energy prices were undistorted, approved them. The reform measures instituted in ISO-NE were designed to limit the negative impacts of the reliability commitment on market prices. The reform measures included changes in pricing rules so that additional units could set price in hours when they were needed, an audit of ISO-NE operating and pricing practices in certain periods by an independent auditor with respect to the identified issues, and specific rules that broadened the criteria for eligibility to set prices under defined operating circumstances.

FERC's decisions with respect to reliability commitments in New England contain some valuable lessons for Ontario. They suggest that while short-term actions to protect reliability may be necessary, it is also important to ensure that market prices remain undistorted to the extent possible. The reform measures implemented in New England provide, at a minimum, examples of rules that IESO should consider in parallel with its reliability commitment proposals. Another applicable lesson is that in the case of New England, FERC decided against waiting for the "perfect solution," i.e., the implementation of SMD, and took immediate steps to limit distortions caused by the DA commitment and RT pricing problems. In the FERC's words,

*"The proposed changes will make the [energy clearing prices] and prices for reserves more reflective of market conditions, thus increasing the efficiency of the market by sending improved price signals to customers and generators."<sup>2</sup>*

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<sup>2</sup> Federal Energy Regulatory Commission, Order Accepting Amendments, Docket Nos. ER02-1149-000 et al., issued April 26, 2002.

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## MINIMIZING THE NEGATIVE IMPACTS OF THE IESO PROPOSALS

If the IESO continues to go forward with its proposals for reliability guarantees, stakeholders should consider complementary measures to minimize the negative potential impacts on market operations:

- Limiting application of import guarantees only to Ontario system scarcity situations, with clearly defined criteria, so that import guarantees are triggered if and only if this import capacity is needed to meet Ontario load;
- Explicitly define criteria for DA reliability commitment, to limit operator flexibility to a reasonable level. These criteria would prevent substantial over-commitment against expected load, for example;
- Design rules that allow IESO to make reliability commitments to imports and generators but that limit price impacts. These measures could be similar to the measures that were implemented in New England. By broadening the set of units able to set price when committed by the IESO outside of the clearing energy single price market, the impacts on market prices can be ameliorated;
- Provide written criteria, developed after discussions with stakeholders, for IESO to de-commit Ontario generating resources not needed in real-time, even if operating under a guarantee. A significant problem in PJM, for example, has been that once the ISO commits units for reliability it often requires these units to run for long past when they are needed. Extended reliability commitment by the ISO can create an inefficient dispatch and distorts prices for considerable periods of time; and
- Require that IESO track out-of-market generation, DA commitment of operating reserve, and import guarantees so that periodic audits can be performed. This will aid market transparency and give investors comfort that market prices are not being unduly biased by the operating decisions of the IESO.

In the best of worlds, the IESO would not be required to implement a system, such as its current proposal, that decouples commitment from pricing. Such a proposal, for the reasons we have highlighted, creates numerous problems. If the IESO goes forward with such a proposal it should do so with some trepidation.

In this instance, IESO should consider measures that limit the scope and applicability of the proposed reliability guarantees to hours and situations where they are truly needed to protect reliability, and institute pricing changes to control the pricing distortions. In so doing, IESO can avoid creating a solution to a short-term reliability problem that unintentionally threatens system reliability in the longer term.



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Sincerely yours,

CRA INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Seabron Adamson'.

Seabron Adamson

A handwritten signature in black ink that reads 'Scott Englander'.

Scott Englander