

April 30, 2007

Dr. Neil Campbell  
Chair, Market Surveillance Panel  
Ontario Energy Board  
P.O. Box 2319, 2300 Yonge Street  
Toronto, Ontario M4P 1E4

**Re: Implementation Issues Associated with the Proposed Framework  
for Monitoring the Exercise of Market Power**

Dear Dr. Campbell,

In our March 30 submission in response to the proposed framework ("Framework") for monitoring the exercise of market power, OPG focused its comments on such broad and fundamental considerations as whether there is a need for the Framework, along with alternative ideas for how to enhance market monitoring within the province's regulatory and policy landscape.

This detailed submission is provided in response to a request by your staff and is meant to complement the March 30 submission by pointing out technical and implementation difficulties if the Framework is adopted, notwithstanding questions about its necessity and alternatives. It draws in part on some background discussions with Dr. Scott Harvey, a director of the consulting firm LECG, and Dr. William Hogan, a professor at Harvard University's Kennedy School of Government, although the views expressed in this submission are those of OPG alone.

The submission is organized into the following five areas: 1) inconsistencies and omissions in the Framework; 2) proposed tests for inferring the exercise of market power; 3) proposed application to non-energy limited generation; 4) proposed application to imports; and 5) proposed application to energy-limited generation.



## 1) Inconsistencies and Omissions

The Framework has some conspicuous omissions. First, while acknowledging that “dispatchable load has the ability to influence market prices,” and although the Framework is meant to give the Market Surveillance Panel (MSP) an improved understanding of the market and market prices, the paper nevertheless dismisses consideration of load on the basis that it requires a different type of analysis and is therefore “outside the scope of this framework.”<sup>1</sup> The omission of load influence has no clear justification in OPG’s submission.

Second, the paper does not adequately consider ancillary services or other non-energy revenues, even though it could be misleading to consider energy spot market pricing and participant behaviour without properly accounting for interactions and interdependence between the energy spot market and, as an example, the operating reserve market. Third, with respect to congestion at interties, important considerations like transmission rights are not considered.

Finally, the proposed Framework is considering the merits of excluding baseload hydroelectric plants, including Beck or Saunders, from the daily application of its conduct, profit and price impact tests.<sup>2</sup> It notes, however, that they would be excluded from testing only if further analysis shows that this is appropriate, and proposes to consider such factors as “the average WAERs at each plant, the reasons for any materially below average WAERs that are observed and whether reallocations of water in these instances led to meaningful schedules.”<sup>3</sup> In OPG’s view, Saunders should be excluded on the basis that its operational schedule is driven by regulatory requirements, and operators have very limited ability to time shift or peak the water usage. Similarly Beck’s base water availability is driven by regulatory requirements and therefore also should be excluded – or at least considered in a modified manner (we will discuss Beck further under section 5) below).

## 2) Proposed Tests for Inferring the Exercise of Market Power

### Necessary and Sufficient Conditions

Under the Framework, proposed necessary and sufficient conditions for inferring an exercise of market power have to do with the offer price (relative to market price and costs) and profits. These conditions are meant to establish a prima facie case that market power has been exercised. However, these conditions overlook the fact that there is an operating reserve market, which could alter participant incentives in the spot market.

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<sup>1</sup> *Market Power Framework for the IESO-Administered Electricity Market: Proposed Framework for the Identification of the Exercise of Market Power*, Discussion Paper prepared by the Market Surveillance Panel, November 2006, [Discussion Paper], p. 30.

<sup>2</sup> The Framework correctly notes that the “Saunders plant has almost no flexibility for scheduling its water while its scheduling by the IESO is complicated by occasional operation in segregated mode. The Beck plants have limited flexibility but are able to produce more during peak hours than off-peak. The operation is complicated by the existence of the pump-storage facility, the provision of AGC by Beck 2 units and reduced availability of water on-peak during the tourist season;” Discussion Paper, p. 65.

<sup>3</sup> *Ibid.*

### **Materiality screen**

Although the Framework claims that in developing market power criteria the MSP “has given priority to reducing the incidence of false positives,”<sup>4</sup> the materiality screen for the application of the conduct and market impact tests will apply to all hours in which the pre-dispatch price exceeds \$50/MWh. As we indicated in our March 30 submission, this threshold is too low, and will lead to a large number of false positives that require screening – especially considering current gas price levels. The Market Surveillance Panel would likely find itself reviewing supplier behaviour during most days of the year under such a threshold.

### **Market Price Impact and Profitability tests**

The price impact and profitability tests should account for the fact that a domestic supplier with a high price offer risks inviting imports as substitutes, and the domestic supplier is always aware of this risk. These tests would therefore be more accurate if they first considered the pre-dispatch impact on import volume as a disciplining factor on offers, and only then considered whether the participant’s potential withholding or pricing-up had a material impact on market-clearing prices, and whether the potential withholding or pricing-up was profitable to the participant. While imports are discussed later in the paper, their effects on bidding behaviour should be accounted for directly in these tests.

### **3) Proposed Application to Non-Energy Limited Generation**

The price impact test for non-energy limited resources states that the test “is devised to identify those situations in which a market participant’s conduct has raised the HOEP significantly above the competitive level.”<sup>5</sup> But how is the competitive price level to be defined during periods of reserve shortage? Since there do not appear to be any special provisions for application of the price impact test during such periods, it appears that the competitive price would be set based on the highest cost unit dispatched, even if Ontario were seriously reserve short and entered an emergency operating state. Indeed, it appears that the price in the Ontario market would not be able to rise above variable costs under this Framework without a supplier violating the conduct and impact tests – not even in a case where Ontario found itself in a severe reserve shortage.

With respect to Lennox in particular, the profitability test should give some recognition to the fact that only 5% of its revenues accrue to OPG. But the Framework proposes only to modify the profit test in cases where the market participant is paid either regulated or contract prices – it does not appear to anticipate an RMR-type scenario as in the case of Lennox.<sup>6</sup>

### **4) Proposed Application to Imports**

The Framework does not provide an economic rationale for the application of market power tests to import supply. As noted elsewhere in the Framework, the exercise of market power entails economically or physically withholding supply. The exercise of market power by import suppliers would therefore entail these suppliers offering less supply into Ontario than would be economically rational. Other than collusion among the many entities able to buy

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<sup>4</sup> Discussion Paper, p. 27.

<sup>5</sup> Discussion Paper, p. 46.

<sup>6</sup> See Discussion Paper, p. 49.

power in the NYISO or MISO and export that power to Ontario, it is not apparent how market power would be exercised by import suppliers.

The application of the Framework to import suppliers requires a theory of economic withholding by those suppliers. If the calculation of the reference offer price is correct, then instead of asking why some suppliers offered power at prices above that level, it might be more useful for the MSP to ask why many other import suppliers did not offer imports at the level of the reference offer price. Indeed, if the calculation of the reference offer price were correct, then there should be a very elastic supply of imports at the reference offer price, so the market price impact test would always find no effect. A contrary finding suggests a miscalculation of the reference offer price, rather than the exercise of market power by import suppliers.

In our March 30 submission, OPG briefly raised the point – in agreement with Trebilcock and Yatchew – that the Framework could have an adverse impact on market reliability by discouraging imports precisely when they are most needed. Here we can elaborate on this concern to illustrate an implementation difficulty of a major component of the proposed Framework. For one thing, the spectre of imposing the costs of potential investigations on import suppliers is unlikely to increase the amount of power they choose to sell into the Ontario market, and has the potential to reduce the import supply offered when Ontario prices are high. It also stands to reason that investigation costs imposed on import suppliers will predictably cause importers to raise the price at which imports are offered to the Ontario market. Finally, uncertainties regarding payments for imports arising from the application of the tests described in the Framework could potentially reduce import supply at any price, and particularly reduce import supply during high priced conditions when access to imports may be important for maintaining the reliability of the Ontario electric system.

Beyond the inappropriateness of applying a market power test to all imports in blanket terms, the proposed methodology also has several conceptual problems. First, it is not clear whether the price used to calculate the reference price is the export price in the adjacent regions or a price at a location internal to the region. Unless the reference price is the export price, including congestion charges, it will not reflect the actual cost of purchasing power from these markets. Second, it is unclear why the reference offer price and threshold would be calculated by “lamination” (offer size).<sup>7</sup> It is not clear why large quantities of power would be offered at lower prices than small quantities of power, especially considering that large offers could be broken up into smaller transactions to yield a higher price.<sup>8</sup> Third, the offer price for imports sourced in a particular market in a particular hour will appear high relative to the price in that market any time the real-time price in that market is lower than expected. In other words, inaccurate forecasting does not reflect an exercise of market power.

These concerns are not meant to suggest that economic analysis of import prices has no merit. On the contrary, substantial differences between prices in the Ontario market and adjacent dispatch regions ought to be analyzed to help identify inefficient rules or restrictions that may

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<sup>7</sup> Discussion Paper, p. 53.

<sup>8</sup> In Appendix B, on p. 96, the Discussion Paper discusses the results of statistical testing to aggregate import offers, but it does not provide an economic explanation for a lamination-based approach.

deter imports, as well as to identify opportunities for improved coordination with adjacent markets. This type of analysis, however, would not involve the kind of market power review proposed in the Framework. Moreover, it needs to be understood that the price at which power is offered into Ontario can differ from the price of power in the source control area for a variety of reasons unrelated to the exercise of market power.

## **5) Proposed Application to Energy-Limited Generation**

### **Conduct Test for ELG**

The crux of the proposed conduct test for energy-limited generation (ELG) is the comparison of a unit's actual market revenues based on its actual schedules to the maximum daily market revenues based on an after the fact optimization.

OPG has at least four concerns with the proposed conduct test for ELG, ranging from highly specific to more general. Our first and highly specific concern is that the proposed daily water allocation efficiency ratio involves ratios that appear arbitrary and without any justification.<sup>9</sup> Second, the conduct test does not consider the need for flexibility beyond a 24-hour renewal horizon. Water beyond a day is generally offered at a future opportunity cost (e.g. next week or next month depending on the reservoir volume), and given the potential value of the water at a future time, it should only be used if there is an emergency requirement in the system (where prices go beyond the future opportunity price). The Framework overlooks this issue.

Our third concern is more general, and has to do with the challenge of understanding operational details as will arise in the Framework's proposed comparison of hypothetical optimized revenues to actual revenues. Such a comparison runs a significant risk of overstating the hypothetical revenues as a result of a failure to consider some of the actual operating characteristics of the resources involved. Put differently, the hypothetical revenues may reflect operational assumptions that were not actually feasible at the time. The Framework suggests that this problem can be addressed by evaluating this measure relative to historic performance to identify days in which the actual dispatch is unusually less valuable than the hypothetical dispatch. While the use of the historic performance standard is helpful, it does not fully address the problem if the omitted constraints apply over some, but not all, of the historical period.

Our fourth concern with the proposed approach is its ex post focus, which raises problems for ELG any time the load forecast over the day turns out to be inaccurate. Any time the load forecast for a day is too low, energy-limited generators will likely be found to have offered energy at prices that were too low early in the day and not retained enough energy for the high-priced peak hours. Conversely, any time the load forecast for the day is too high, energy-limited generators will likely be found to have offered energy at prices that were too high early in the day and retained too much energy to meet the lower than expected peak. While the Framework suggests that a "materiality limit" would address the effects of this

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<sup>9</sup> The use of the word "say" underscores this arbitrary sense: "We propose that a WAER should be defined as being below its historical threshold if it is below most (say, 98 percent) of its past values and if it is also less than a specified percentage (say 85 percent) of its past average value;" see Discussion Paper, p. 64.

uncertainty, it is not apparent that the actual exercise of market power would necessarily result in conduct outside the materiality limit, nor that the considerations above would not cause competitive behaviour to violate the materiality limit.<sup>10</sup>

The simulation results reported suggest that the Framework will require the MSP to undertake a detailed examination of resource dispatch over many days, yet provide no suggestion that any of these days will necessarily reflect even a possible exercise of market power. In summary, the very nature of ELG requires prudent dispatch over the course of a day and over longer periods of time, where prudence must be understood in the same terms as applied by the operator on an ex ante basis. A market participant must take account of the range of possible outcomes that may unfold and offer accordingly. The ex post test proposed does not take account of this reality.

Lastly, and returning to Beck, the MSP framework faces a challenge of combining constantly evolving ELG and non-ELG considerations in a complex manner. As we have seen, Beck's base water availability is driven by regulatory requirements. At the same time, the Beck Pump Generating Station (PGS) allows OPG a significant amount of flexibility in scheduling Beck output. Yet 50% of PGS usage is driven by the need to operate in AGC mode at Beck II, a situation in which OPG has little control over the outcome. Moreover, the remaining PGS usage is highly complex: the sheer complexity of the entire Beck operation, comprising all three plants and their interdependence – would preclude the IESO from drawing meaningful conclusions from the proposed, and seemingly arbitrary, WAER calculations.

## Conclusion

In our first submission we argued that the Framework had an unclear rationale and unintended consequences, and that there were unexplored alternatives available to the MSP. In this second submission, we have demonstrated a number of technical and conceptual difficulties in the application of the Framework, should the MSP decide to implement it notwithstanding the objections of market participants.

If you would like to discuss our two submissions further, we would be happy to meet with you.

Yours truly,



for Andrew Barrett

cc: B. Boland  
J. Burpee  
J. Haffner

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<sup>10</sup> Discussion Paper, p. 71.