Market Surveillance Panel Report: Key Messages and Q&As

November 8, 2016

Issue: The Market Surveillance Panel's (MSP) 27th Monitoring Report recommends the IESO make two changes to the Generator Cost Guarantee (GCG) program that would result in $40M in annual savings. The first is to eliminate generator operating & maintenance (O&M) cost recovery and the second is to expand the generator revenue used to offset amounts a generator is eligible to recover through the GCG program.

Audience: The following key messages and Q&As are primarily to respond to media inquiries.

Key Messages

- The IESO welcomes the report and will discuss with the MSP their proposed changes. The IESO is currently working with stakeholders to design and implement broader, more fundamental and enduring changes to Ontario's electricity market that will address the report's findings.

- As the MSP report acknowledges, the IESO has to manage changing conditions between day-ahead and real-time. To do this, the IESO may call on generators to start up on short notice, requiring them to incur additional costs they may not be able to recover through the electricity market.

- The RT-GCG offers the incentives needed to ensure sufficient generation is available to balance supply and demand as conditions change closer to real-time. It is also a key component of meeting mandatory continent-wide operation planning standards.

- Substantially reducing generator incentives, as recommended by the MSP, could result in insufficient generation being available to reliably meet electricity demand. This could impact reliability and impair the IESO's ability to meet continent-wide planning requirements.

    - Eliminating the RT-GCG program altogether would likewise threaten reliability and impair the IESO's ability to meet continent-wide planning requirements.

- The IESO is in the process of assessing the benefits of making broader and more fundamental changes to the current electricity market design which would drive a more efficient market overall, including more efficient real-time commitments.

    - These proposed changes are aligned with many of the current and previous recommendations of the MSP.

- Earlier versions of the RT-GCG program relied heavily on more flexible generation, which provided 80% of the starts under the program at that time, the majority of which were from coal units. By 2009, coal-fired generation was being replaced by natural gas-fired generation, which has different operating characteristics and incur more costs when starting up compared to coal-fired generation.

- As the IESO began to rely less on coal-fired generation, there became an increasing need to make changes to the program parameters and incentives to ensure that resources were available when needed. In 2009, the IESO addressed this need by introducing more stringent eligibility criteria to make better use of existing assets while allowing the recovery of incremental operating and maintenance costs to ensure that resources still were incented sufficiently and that the program continued to meet its reliability objectives.

- The IESO has worked with stakeholders on proposed changes that will limit the operating and maintenance payments referenced in the MSP report by introducing pre-approved cost values that will ensure greater clarity and transparency in the recovery of eligible costs, and reduce the need for after-the-fact audits and recovery of ineligible costs. To date, these recoveries have amounted to about 25% of the initial amounts claimed under the program.

Q&As

1. **What is the GCG program and what is it intended to do?**

The Real-Time Generation Cost Guarantee program ensures sufficient generation is available to balance supply and demand as conditions change closer to real-time and is a key component of meeting mandatory continent-wide operation planning standards. It does this by guaranteeing certain incremental start-up costs to participants who otherwise might not commit their units when they were not certain they would be able to recover these costs.

Additional background information: The IESO-administered markets schedule resources to ensure energy and operating reserve demands are met at any given time. If there is a disturbance on the electricity system or market demand increases, resources need to be ready to be dispatched to meet such changes in system conditions. Not having enough resources online to meet changing conditions can have significant impacts on reliability.

Some resources can take several hours to reach the point at which they are available for dispatch, called the minimum loading point (MLP). During the period between initiating a start to reaching MLP, a resource will incur costs as a result of starting up. Without assurance that the resource will recover the incremental costs of starting and ramping to MLP, some resources may be less likely to offer into the

market when the IESO may need them to be available. To address this concern, the IESO introduced the Spare Generation On-Line (SGOL) program in 2003, now called the Real-Time Generation Cost Guarantee (RT-GCG) program.

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As the IESO began to rely less on coal-fired generation, there became an increasing need to make changes to the program parameters and incentives to ensure that resources were available when needed. In 2009, the IESO addressed this need by introducing more stringent eligibility criteria to make better use of existing assets while allowing the recovery of incremental operating and maintenance costs to ensure that resources still were incented sufficiently and that the program continued to meet its reliability objectives.

The IESO relies on this and other mechanisms such as the Day-Ahead Production Cost Guarantee (DA-PCG) program to incent participants to be available to offer generation facility resources to the market in real-time.

2. **Why has the RT-GCG program paid out $400M since 2010, including more than $280M for O&M costs? What is the value of the RT-GCG program?**

The Real-Time Generation Cost Guarantee program ensures sufficient generation is available to balance supply and demand as conditions change closer to real-time and is a key component of meeting mandatory continent-wide operation planning standards. Not having enough resources online to meet changing conditions can have significant impacts on reliability.

Earlier versions of the RT-GCG program relied heavily on more flexible generation, which provided 80% of the starts under the program at that time, the majority of which were from coal units. By 2009, coal-fired generation was being replaced by natural gas-fired generation, which has different operating characteristics and incur more costs when starting up compared to coal-fired generation.

As the IESO began to rely less on coal-fired generation, there became an increasing need to make changes to the program parameters and incentives to ensure that resources were available when needed. In 2009, the IESO addressed this need by introducing more stringent eligibility criteria to make better use of existing assets while allowing the recovery of incremental operating and maintenance costs to ensure that resources still were incented sufficiently and that the program continued to meet its reliability objectives.

3. **When will the IESO implement broader, more fundamental and enduring changes?**

The IESO will work with stakeholders to implement broader, more fundamental and enduring changes through its Market Renewal project, which is expected to be completed in 4-5 years.

4. **Will the IESO expand the generator revenues used to offset the guaranteed costs as the MSP recommends, saving $10M per year?**

Substantially reducing generator incentives, as recommended by the MSP, could result in insufficient generation being available to reliably meet electricity demand. This would negatively impact reliability and impair the IESO's ability to meet continent-wide planning requirements.

However, the IESO is currently working with stakeholders to design and implement fundamental and enduring changes to Ontario's electricity market that will address the report's findings by introducing a more efficient real-time commitment program.

5. **Will the IESO discontinue the recovery of operating and maintenance costs as the MSP recommends, saving $30M per year?**

Substantially reducing generator incentives, as recommended by the MSP, could result in insufficient generation being available to reliably meet electricity demand. This would negatively impact reliability and impair the IESO's ability to meet continent-wide planning requirements. Therefore the IESO will continue to allow the recovery of operating and maintenance costs.

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As the IESO began to rely less on coal-fired generation, there became an increasing need to make changes to the program parameters and incentives to ensure that resources were available when needed. In 2009, the IESO addressed this need by introducing more stringent eligibility criteria to make better use of existing assets while allowing the recovery of incremental operating and maintenance costs to ensure that resources still were incented sufficiently and that the program continued to meet its reliability objectives.

However, the IESO is currently working with stakeholders to design and implement fundamental and enduring changes to Ontario's electricity market that will address the report's findings by introducing a more efficient real-time commitment program.

6. **What are the operating characteristics of natural-gas facilities that result in them incurring greater start-up costs than coal-fired generation?**

Compared to coal-fired generation, natural-gas fired generators have a higher minimum loading point, which is the minimum output of energy under stable conditions at which point a facility can be safely utilized the IESO. The minimum loading point for coal-fired generation is

only about 20% of its capacity, while natural-gas fired generation must reach a minimum loading point that is roughly three times the capacity (50-70%). This can result in greater costs compared to coal-fired generation.

The majority of Ontario's gas-fired generation are combined cycle technology, which means that there are steam turbines that use the exhaust heat from the gas turbines to produce additional electricity and ensure natural gas is being used in the most efficient manner. This means that during the start-up, they also have a need to manage the coupled operation of their gas turbines and the corresponding steam turbine, which results in higher costs compared to coal-fired generation.

7. **Why doesn't the IESO address the MSP recommendations sooner, prior to the implementation of Market Renewal?**

Substantially reducing generator incentives, as recommended by the MSP, could result in insufficient generation being available to reliably meet electricity demand. This would threaten reliability and impair the IESO's ability to meet continent-wide planning requirements.

However, the IESO will further discuss with the MSP their recommendations and is in the process of assessing the benefits of making broader and more fundamental changes to the current electricity market design which would drive a more efficient market overall, including more efficient real-time commitments. These proposed changes are aligned with many of the current and previous recommendations of the MSP.

8. **Operating and maintenance costs were not recoverable in the real-time program for six years. Why does the IESO now guarantee operating and maintenance costs? This has cost $280M since 2010.**

The inclusion of operating and maintenance costs in the Real-Time Generator Cost Guarantee program is necessary to ensure that there is sufficient generation available to balance supply and demand as conditions change closer to real-time and to meet mandatory continent-wide standards for operation planning.

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As the IESO began to rely less on coal-fired generation, there became an increasing need to make changes to the program parameters and incentives to ensure that resources were available when needed. In 2009, the IESO addressed this need by introducing more stringent eligibility criteria to make better use of existing assets while allowing the recovery of incremental operating and maintenance costs to ensure that resources still were incented sufficiently and that the program continued to meet its reliability objectives.

However, the IESO will further discuss with the MSP their recommendations and is in the process of assessing the benefits of making broader and more fundamental changes to the current electricity market design which would drive a more efficient market overall, including more efficient real-time commitments. These proposed changes are aligned with many of the current and previous recommendations of the MSP.

9. **Is Ontario losing $40M per year through this program? Could Ontario save $40M per year by making the MSP's recommended changes?**

As the MSP report acknowledges, the IESO has to manage changing conditions between day-ahead and real-time. To do this, the IESO may call on generators to start up on short notice, requiring them to incur significant costs they may not be able to recover through the electricity market.

The RT-GCG offers the incentives needed to ensure sufficient generation is available to balance supply and demand as conditions change closer to real-time. It is also a key component of meeting mandatory continent-wide operation planning standards.

Substantially reducing generator incentives, as recommended by the MSP, could result in insufficient generation being available to reliably meet electricity demand. This would threaten reliability and impair the IESO's ability to meet continent-wide planning requirements.

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However, the IESO is in the process of assessing the benefits of making broader and more fundamental changes to the current electricity market design which would drive a more efficient market overall, including more efficient real-time commitments. These proposed changes are aligned with many of the current and previous recommendations of the MSP.

In the absence of these broader, more fundamental and enduring changes, the program should remain as it is currently designed to ensure sufficient generation is available to balance supply and demand as conditions change closer to real-time and to meet mandatory continent-wide operation planning standards.

10. **Is it true that generators who received GCG payments were called on only 1% of the time? Is it true that the reliability benefits of the GCG program are not commensurate with the cost?**

The program acts as insurance by ensuring sufficient generation is available to balance supply and demand as conditions change closer to real-time and is a key component of meeting mandatory continent-wide operation planning standards. Like insurance, the value is in the ability to manage the risk of events that don't happen frequently, but can have serious consequences when they do. As such, usage of the RT-GCG program in past years is not an indication of its value.

As the MSP report acknowledges, the IESO has to manage changing conditions between day-ahead and real-time. The RT-GCG program meets this need.

Eliminating the RT-GCG program could result in insufficient generation being available to reliably meet Ontario electricity demand. This would negatively impact reliability and impair the IESO's ability to meet continent-wide planning requirements.

11. **Does the IESO have any analysis of the continued need for the program? The MSP report says it doesn't.**

The IESO and MSP agree that there is a need to manage changing system conditions from day-ahead and real-time. The IESO meets this need through the RT-GCG program and will continue to do so until broader, more fundamental and enduring changes can be made that will address the report's findings.

Eliminating the RT-GCG program would pose a significant reliability risk since the output from generators may not be offered to the market when needed by the IESO. In addition, the absence of a real-time commitment program would impair the IESO's ability to meet its continent-wide planning requirements and might lead to non-compliance with reliability standards.

The IESO will continue to engage with the MSP to discuss ways to improve the program until broader, more fundamental and enduring market design changes can be made.

12. **If the program served its intended function for six years and 6,000 unit commitments without guaranteeing O&M costs, why did the IESO decide to cover these costs?**

Earlier versions of the RT-GCG program relied heavily on more flexible generation, which provided 80% of the starts under the program at that time, the majority of which were from coal units. By 2009, coal-fired generation was being replaced by natural gas-fired generation, which has different operating characteristics and incurs more costs when starting up.

As the IESO began to rely less on coal-fired generation, there became an increasing need to make changes to the program parameters and incentives to ensure that resources were available when needed. As a result, in 2009, the Real-Time Generator Cost Guarantee program

introduced more stringent eligibility criteria to make better use of existing assets while allowing the recovery of operating and maintenance costs to ensure sufficient generation would continue to be available to balance supply and demand as conditions change closer to real-time, and to meet mandatory continent-wide standards for operation planning. At the same time, the IESO also changed the eligibility criteria for the RT-GCG program to make better use of existing assets.

13. Do other jurisdictions have a Real-Time Generator Cost Guarantee program?

Every North American jurisdiction has a need to ensure sufficient generation is available to balance supply and demand as conditions change closer to real-time and to meet mandatory continent-wide standards for operation planning. This need is met differently across jurisdictions. The IESO currently meets this need through the Real-Time Generation Cost Guarantee program and is also working with stakeholders through the Market Renewal initiative to design and implement changes to Ontario's electricity market that will create efficiencies in how this need is met.

14. How is the IESO working with stakeholders to design and implement fundamental and enduring changes to Ontario's electricity market?

The IESO is currently working with stakeholders through the Market Renewal project to design and implement fundamental and enduring changes to Ontario's electricity market. The Market Renewal project includes a variety of initiatives that are collectively expected to increase the efficiency of the electricity market, prepare us to manage future change, and allow IESO to adopt best practices from other jurisdictions and incorporate lessons learned here in Ontario.

More details about the stakeholder engagement can be found on the IESO's stakeholder engagement webpage: http://www.ieso.ca/Pages/Participate/Stakeholder-Engagement/Market-Renewal.aspx.