



Update on Renewed Market Performance and Operations

AUGUST 21, 2025

Welcome and Introduction

- Today's session will be recorded and available for viewing online
- The recording and presentation for this engagement can be found on the [Renewed Market Operations page](#)

Participation

- For questions and comments click on the “raise hand” icon (hand symbol) at the top of the application window. This will indicate to the host you would like to speak.
- To unmute audio, click on the microphone icon at the top of the application window.
- Audio should be muted when not asking a question.

Territory Acknowledgement

The IESO acknowledges the land we are delivering today's webinar from is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples. We also acknowledge that Toronto is covered by Treaty 13 with the Mississaugas of the Credit First Nation.

As we have attendees from across Ontario, the IESO would also like to acknowledge all of the traditional territories across the province, which includes those of the Algonquin, Anishnawbe, Cree, Oji-Cree, Huron-Wendat, Haudenosaunee and Métis peoples.

Agenda

Today's engagement will cover the following topics:

- Transitioning to steady state
- Summer operations in the renewed market
- Observations on market performance
- Common questions and answers
- Next Steps



Transition to Steady State for the Renewed Market

Transition to Steady State

- Following the successful launch of the renewed market on May 1, the IESO and participants have been learning the new processes and tools, adjusting strategies as they build an understanding of the new market dynamics and managing the issues and defects that are to be expected with such a large and complex change.
- All indicators show that at this relatively early stage the market systems and processes are nearing a steady state of operations where focus can begin to shift from addressing day-to-day flaws in the implementation to monitoring results for potential improvements or areas where the design may not be fully realizing the objectives.

Transition - Registration

- A small number of organizations have taken advantage of optional participation types introduced through MRP to provide new options for managing price risk.
- After some initial challenges setting up these new participation types there are now nearly 30 Virtual Traders transacting in the market, and one large consumer is now operating as a Price Responsive Load.
- More organizations are in the process of registering for both new participation types.

Transition – Market Power Mitigation

- All required participants have registered reference levels (required for the market power mitigation framework) with some now refining these values based on early market experience.
- A few participants continue to use the default values for some of their reference levels.
- The Market Power Mitigation Working Group has been having productive discussions and has reduced the meeting frequency to monthly as no significant issues have been brought forward at this point, and minor issues are being addressed.

Transition - Settlements and Invoicing 1/3

- Settlements statements and invoices have been consistently issued within the required timelines; although invoices have been issued later in the day than preferred by participants due to increased processing times. IESO is working to improve system performance.
- A new [Settlements Notifications](#) webpage is now available on the IESO website to help participants stay informed of key settlement updates. Participants can enable RSS Feeds in Microsoft Outlook to directly receive emails whenever the Settlements Notifications webpage is updated.

Transition - Settlements and Invoicing 2/3

- Notices of Disagreement have increased as expected. One-third of resolved disagreements are related to defects that are now corrected, and IESO has confirmed the calculation was correct for the remaining two-thirds.
- IESO is working through a backlog of disagreements, some related to defect fixes that are pending. The disagreement closure will identify if an error is related to a defect.
- Most defects have impacted smaller subsets of participants (e.g. Price Responsive Loads or Generator Offer Guarantee eligible resources). IESO prioritized addressing defects with larger impacts and is now working through the remaining defects.

Transition - Settlements and Invoicing 3/3

- One defect was found to have a widespread impact as it was related to a calculation error in the residual uplifts. The two-settlement energy settlement amounts were calculated correctly, however the day-ahead and real-time residual uplifts from the energy settlement amounts were incorrectly calculated and distributed to loads and exporters resulting in adjustments to four uplift charge types.
- A notice was issued to all participants on August 12 identifying the issue, the impacted charge types and how resettlement will be completed.

Transition - Support

- Inquiry volumes have increased but the number has been manageable. IESO Customer Relations has answered 80% of inquiries within two business days.
- Most have been simple inquiries that can be addressed quickly, more complex questions requiring further assessment have been taking much longer.
- Participants have had questions on non-intuitive or unusual results they have seen - some of which have led to an identification of a defect, while others required an explanation of how the renewed market functions or how extreme weather conditions have led to very high demand and different outcomes than participants are familiar with. See the Common Questions section for more information.

Transition – Participant Readiness

- A final readiness survey was completed by participant organizations impacted by the changes to the market. The IESO received responses from 40% of market participants, with all participation types represented.
- 63% of respondents reported that they are “generally comfortable operating”, while 35% noted that non-critical parts of their business are still incorporating the changes or are working through some challenges.
- Only a few organizations reported that they are “struggling to operate effectively”.
- Commentary noted that many have experienced fewer issues than expected.

Transition – Participant Readiness Continued

- Survey responses also indicated 80% of respondents typically turn to IESO resources for assistance, while 20% turn to a range of sources or consultants
 - Nearly 90% found assistance through IESO Customer Relations or Marketplace Training to be generally effective ("very" to "somewhat")
- Respondents noted a number of topics for more assistance: Day-ahead scheduling engine, Economic Operating Point and Make-Whole Payments, Pseudo-unit scheduling, Market Power Mitigation, downloading settlement files, understanding new participation types and charge types
 - See the Common Questions section for more information on these topics

Transition – Market Systems 1/6

- The renewed market is operating as expected where early observations and operations through both the low spring demands and high summer demands have been consistent with the goals of the Market Renewal Program which were to increase market efficiency, transparency, and competition.
- Early indicators are discussed in the Market Performance section.
- The rate of new defects occurring in the market systems has slowed from a peak in the first few weeks post-launch. Most have been addressed quickly with workarounds to avoid impact on participants.

Transition – Market Systems 2/6

Defects identified in the market systems fall into three broad categories:

- **No Impact:** workaround implemented before the defect impacted prices, schedules, or did not impact settlement variables
- **Market Remediation Required:** defect impacted market outcomes for a brief period and required IESO to administer prices* and/or correct schedules* where there was a material impact that could be corrected before settlement
- **Assessment Required:** nature and/or duration of defect required extensive assessment to determine if there was a material impact, and this could not be completed prior to settlement*

*see Market Rules 0.7 sections 7.6 and 8.4A and Market Manual 0.4.3 section 7 for more information

Transition – Market Systems 3/6

Most defects had **no impact** or were corrected before settlement through **market remediation**. These include:

- The Adequacy Report, which reports totals after the fact, was missing certain types of gas supply secured in the DAM. This had no impact on market results and was fixed and reporting correctly starting July 26.
- IESO notified impacted generators of interim procedures to address issues scheduling pseudo-units and is working on permanent fixes. Any impacts on schedules or prices were addressed through the market remediation processes. A reference card on these interim procedures is available here: [Training Materials](#).

Transition – Market Systems 4/6

Continued:

- 5-minute interval Ontario Demand* values reported in real-time were overstated in certain limited circumstances. The IESO implemented an interim workaround and completed a thorough review of the issue. The workaround effectively adjusted forecast demand to largely mitigate this defect. The hourly forecast demand values used to identify peak demand for the Industrial Conservation Initiative were not materially impacted, and the [Peak Tracker](#) is reporting the correct peak hours and days. A permanent resolution is under development.

*The 5-minute Ontario Demand values reported in real-time are an approximate calculation using a number of variables obtained through market dispatches and/or real-time system conditions.

Transition – Market Systems 5/6

A small number of defects or issues **required extensive assessment**. The IESO has found that two of those assessed to date had material impacts constituting a dispatch scheduling error (DSE). A notice was issued on August 15 noting that affected market participants will see corrective amendments related to the following errors on their settlement statements:

- Based on a review of real-time market results, for select intervals of trade dates May 1, 2025 through May 4, 2025, a DSE has been declared due to an incorrect calculation of the External Congestion and Net Interchange Scheduling Limit (NISL) price components. The DSE for May 1 and 2 did not result in any settlement adjustments.
- Based on a review of day-ahead market results, for all hours of trade date May 6 a DSE has been declared due to an incorrect limit considered in the DAM for the ONT-PQAT interface.

Transition – Market Systems 6/6

Continued:

- There are currently another five issues requiring extensive assessment.
- It will likely take another three to six months to assess these and determine if there was a material impact that constitutes a dispatch scheduling error*

*Note: as per market rules chapter 0.7, section 7.6.2 in the event of a dispatch scheduling error the IESO does not adjust market prices, only market participants harmed by the error are compensated.



Summer Operations in the Renewed Market

First Tests of the Renewed Market

As the conditions shifted from spring to summer, the market performed well, providing greater operational certainty and continuing to maintain reliability as we transitioned from periods with low demands to sustained high demands

Spring Freshet

- The abundance of must-run hydro supply from snow melt and rainfall during season of lower demands

Hot Weather

- Placed high demands on the system with resources already operating at/near full capacity making system more vulnerable to forced outages; unexpected losses to supply can be safeguarded by advanced scheduling of standby and flexible resources that can quickly respond to system contingencies

Summer Heatwaves and Peaks

- 2024 peak demand was 23,852 MW and occurred on June 19, hour ending 17
- 2025 has had 7 peaks well above this, from 24,006 - 24,862 MW
- Ontario generation and transmission performed generally well over multiple heatwaves, including newer resource types (e.g. energy storage)
- Challenging conditions were reflected in multiple periods of sustained high demands with day-to-day changes to manage:
 - June 22-24: Ontario shifted from a net exporter over peak due to strong wind contributions to a net importer the next day as those contributions dropped
 - July 14-16: net importer to a net exporter due to economics
 - July 27-29: net importer on all days with two large generators forced offline

Post-launch Summer Operations

Based on early experience with the renewed market:

- Day-Ahead Market has improved the IESO's ability to ensure adequate generation is committed to meet demand with a firmer view of next day's commitments
- Earlier insight into tight conditions for Ontario suppliers and other jurisdictions is allowing better preparation; for example, some Level 1 Emergency Energy Alerts (indicates that all available generation resources are committed) have been identified based on day-ahead results
- Pre-dispatch schedules are a better indicator than prior to the renewed market and improvement opportunities can likely be identified with more experience
- Pseudo-unit configurations have proven to be challenging, requiring a number of temporary workarounds until permanent solutions can be developed

Post-launch Summer Operations

Continued:

- A majority of Non-quick Start resources are being scheduled in the Day-Ahead Market most days, providing IESO and participants a clearer view and financial certainty for the next day's operations while also leaving room to adjust to forecast uncertainty and outages in real-time
- On average, eighty to ninety percent of non-quick start generation that is dispatched in real-time was scheduled in the day-ahead market, over the first three months



Initial Observations on Market Performance

Observations on Market Performance

- Results from the first three months of renewed market operations are consistent with the goals of Market Renewal - to increase market efficiency, transparency, and competition.
- The ability to draw conclusions at this point is still limited due to:
 - Short duration the renewed market has been in operation;
 - Participants learning how the renewed market works and adjusting their strategies;
 - Experience in only two seasons - a full year, covering all four seasons, will provide more complete information.

Market Performance

The renewed market continued to produce intuitive prices reflective of system conditions, and efficient resource schedules for reliable operations of the grid

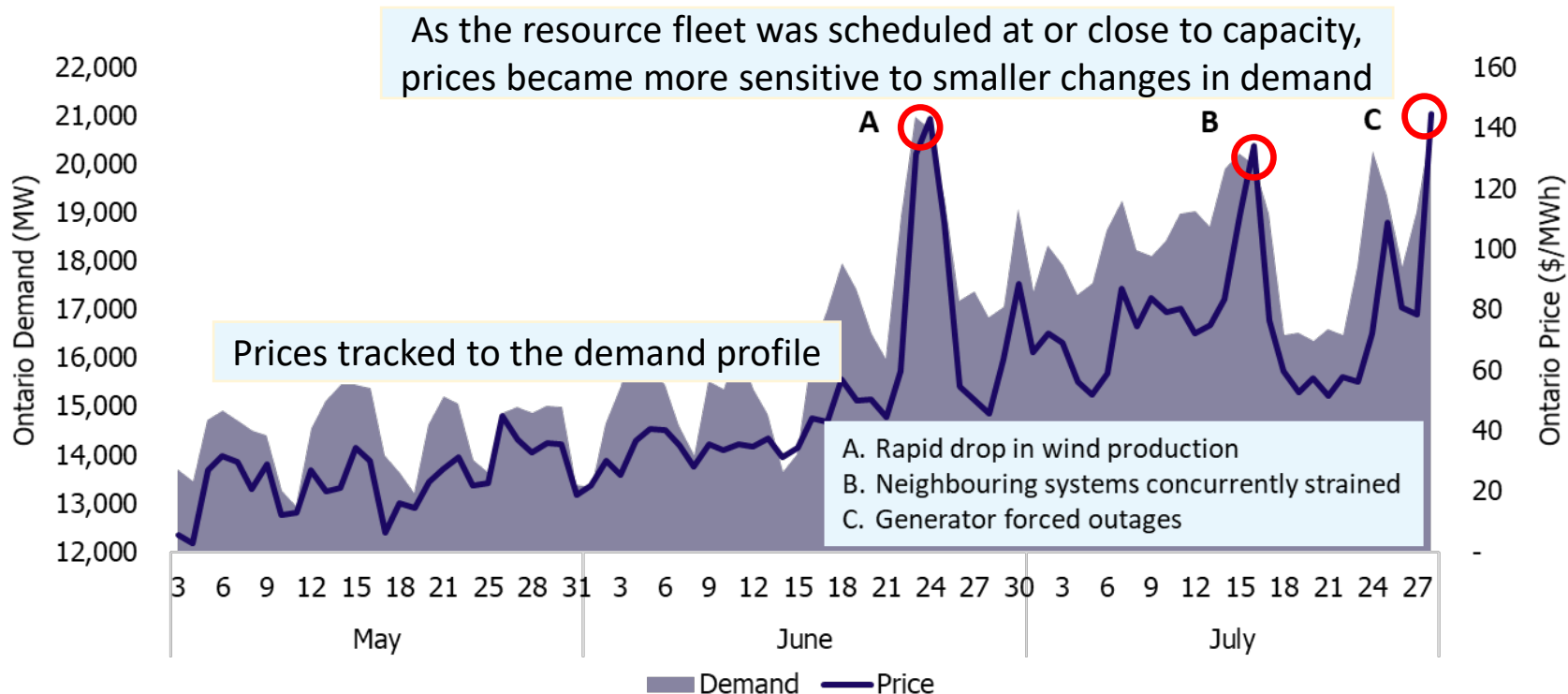
The market performed especially well under hot weather conditions

- Pricing outcomes clearly aligned with resource schedules and system needs
- Financial and operational certainty provided in day-ahead for most resources

Intuitive Price Formation

- Real-time and day-ahead prices converged when actual conditions matched forecasts, and varied accordingly to deviations in real-time
- Prices rose in areas with increasing demand/congestion and lowered for the opposite

Prices Clearly Aligned With System Conditions

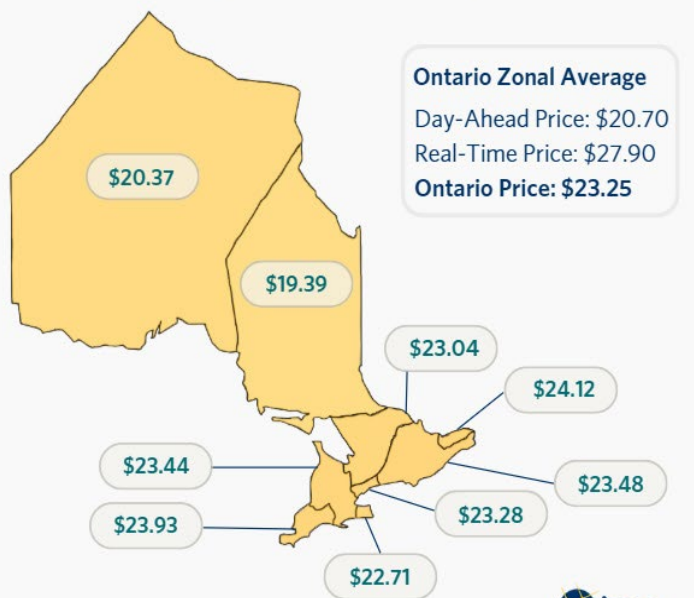


Price Separation Corresponding to Locational Conditions

- Hydro supply can be bottled in the North resulting in lower prices compared to Southern Ontario where there is higher concentration of load
- Power flow to the South can be transmission constrained, adding congestion costs to Southern Ontario locational prices
- These local conditions have produced generally consistent price separation over different demands seen to date (average prices in different zones under lower spring demands and higher summer demands are shown on next slide)

Generally Consistent Price Separation from Local Conditions

Ontario Zonal Day-Ahead Prices - May 2025



Arithmetic Average of LMPs for each zone (\$/MWh)



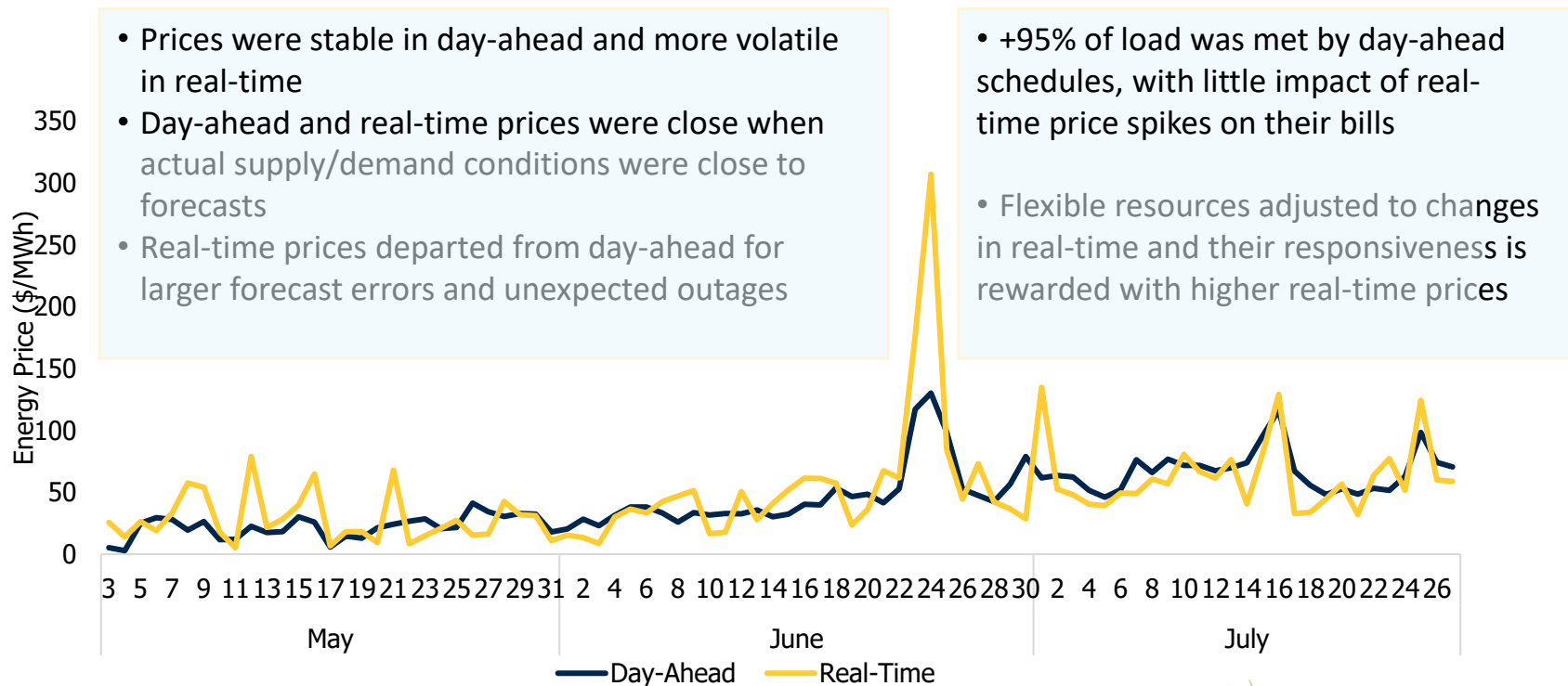
Ontario Zonal Day-Ahead Prices - June 2025



Arithmetic Average of LMPs for each zone (\$/MWh)



Day-Ahead Price Certainty



Ongoing Performance Monitoring

- In addition to accurate price formation, the transparency, efficiency, and competitiveness of the market is enabled through new features including Market Power Mitigation, Virtual Trading and Make-Whole Payment designs
- Locational pricing-based markets have these features and the Ontario designs were informed by the benefits and lessons learned from other ISOs
- Initial observations indicate proper function; on-going monitoring will inform the scope of potential design improvements, if necessary



Common Questions

Common Questions

Q: My offer price was uneconomic when compared to the price. Why was it scheduled?

A: LMP prices do not tell the whole story and cannot always be used to determine if an offer/bid should or should not have cleared the market at their submitted prices.

The IESO implemented scheduling processes based on multi-interval optimization (MIO) as the most efficient and cost-effective way to maximize the gains from trade, respect resource operating restrictions and to maintain the security of the IESO-controlled grid. MIO looks across its entire look-ahead period and finds the most economical overall solution. For pricing, the IESO incorporated the fundamental principle that the marginal price at each location should be set by an offer or bid from a resource that can serve the next increment of demand at that location during the interval being priced.

Suppliers can meet that demand when they can be scheduled without restriction due to a system or operational constraints. Examples of operational constraints include minimum output, maximum output, ability to ramp up or down and constraints related to safety or regulatory concerns.

Resources not able to meet incremental demand in the current interval are excluded from price-setting. This has the effect of occasionally creating mismatches between settlement prices and resource schedules, especially for those with transactions priced near the margin. As a result, scheduled resources offered or bid near the margin can appear uneconomic when compared to the settlement price. Dispatchable Ontario-based resources will receive a make-whole payment (MWP) if they are affected, as will intertie transactions in most cases.

IESO can review specific results to confirm that a transaction was scheduled correctly by the algorithm.

Common Questions

Q: I have noticed Ontario demand changing suddenly from one interval to the next by hundreds of megawatts in the IESO's Realtime Totals Report. What is causing this?

A: This report provides an approximate calculation of Ontario demand in near real-time using a number of variables obtained through market dispatches and/or real-time system conditions. Given the unpredictable nature of some of these variables there can be significant changes in demand from one interval to the next attributed to one or many different variables. These can include:

- External factors (e.g. system conditions of neighbouring jurisdictions etc.)
- Extreme weather driven events (e.g. disruptions in supply, sudden increased heating/cooling demand, etc.)
- Control actions to address reliability/adequacy needs in real-time (e.g. simultaneous activation of reserve due to contingencies in Ontario or neighboring regions, emergency energy acquisitions)
- Control Room Operators reacting to the system's state (e.g. conservative operating state)

Additionally, tool or software defects or failures can occasionally result in erroneous spikes in demand, which may be responded to through workarounds, manual control actions or long-term fixes.

To mitigate the impact of erroneous demand spikes, the IESO takes real-time actions to adjust demand values accordingly to ensure correct dispatching and a reliable electricity grid. However, due to complexity and unpredictability of the root causes, as well as additional tool issues experienced recently, the impact of the demand spikes may not be fully mitigated in every circumstance.

The actual Ontario demand is reported 10 business days after the trade date to allow time for revenue meter data to be collected and verified.

Common Questions

Q: I have noticed an increased number of price administration events after the launch of the renewed market. Is there a reason for this increased frequency? Can the IESO administer prices for events that occurred in May or June?

A: The triggers for price administration remain as follows:

- Tool Issues – The IESO is unable to publish prices or publishes incorrect prices due to a forced or planned outage to the hardware, software or communications systems that support the dispatch algorithm.
- Incorrect Prices - The published prices are incorrect due to incorrect inputs to the market algorithm or the formation of an electrical island in real-time.
- Market suspension – No prices are published.

Since the launch of the renewed market on May 1, 2025, the IESO is closely monitoring its systems and market outcomes to quickly address issues that impact prices and schedules in the Production environment. Once the market stabilizes, less manual intervention may be required, and these price administration events are expected to decrease.

The IESO has only four business days after the dispatch day to decide on the need for administrative prices and to implement them. Beyond this window, the published prices become the prices used for settlement.

More information on this topic can be found on the updated quick-take: [Administrative Pricing](#).

Common Questions

Q: Some public and confidential reports are missing data in them. Is this an error?

A: The IESO would like to thank market participants for their cooperation in helping us to identify missing data or missing reports. This has led to an early identification of tool defects that were uncovered after the launch of the renewed market. If participants observe missing data or reports, these issues should continue to be reported to IESO Customer Relations.

The IESO also observed an increased number of enquiries related to why resources or data may be missing, as well as clarification on what specific values or fields mean in these reports. Participants are encouraged to use the following materials to help them understand the processes and inputs that drive the outputs of these files:

- report help files,
- various Market Manuals under [Renewed Market Rules & Manuals Library](#) (particularly MM4: Market Operations and MM 14: Market Power Mitigation), and
- [Training Materials](#) under the IESO Marketplace Training.

If further clarification is required, participants are also encouraged to submit their questions to IESO Customer Relations.

Common Questions

Q: I have noticed high real-time prices. How will this impact my bill if I pay the Ontario Energy Market Price?

A: The Ontario Energy Market Price, or Ontario Price, is a uniform hourly price that used to settle consumers across the province that are not actively participating in the market. It's calculated a day ahead – with small adjustments made after the fact to reflect any differences in real-time. The Day-Ahead Ontario Zonal Price is the hourly, load-weighted average of day-ahead Locational Prices and reflects the total day-ahead cost of serving all non-dispatchable load. Most energy supply will be scheduled in the Day-Ahead Market, meaning that the largest proportion of costs to the market will be accumulated in the day ahead. The adjustment is called the Load Forecast Deviation Adjustment and reflects the difference in the cost incurred in real-time compared to the day ahead. This adjustment can be an increase or decrease to the price and is a function of the changes in the amount and price of supply occurring between the day-ahead and real-time. The Day-Ahead Ontario Zonal Price (OZP) - and will be close to the final price on your bill. The Ontario Price is similar to the day-ahead price, but finetuned to adjust for real-time outcomes.

Consumers can see the day ahead price and the adjustment on their daily settlement statement. In response to requests to make the Ontario Price more accessible on the website IESO will be implementing enhancements to the [Power Data](#) page in the coming weeks.

The "Guide to Prices in the Renewed Market" provides a detailed explanation and is available here: [Market Renewal Program - Training Materials](#).

Common Questions

Q: External stakeholders have requested additional training and assistance to better understand the following topics: day-ahead scheduling engine, pseudo-unit scheduling, market power mitigation (MPM), price responsive loads and virtual transactions, economic operating Point (EOP) and make-whole payment (MWP), changes to settlement charge types, and the IESO's settlement process and files.

A: The IESO is committed to supporting training needs for participants. Below is a list of current training materials that are available on the IESO website:

Day-Ahead Scheduling Engine:

- [MRP - eLearning Modules](#) for Intertie Transactions and Transmission Rights, Virtual Transactions Price Responsive Load, Non-Dispatchable Load, Dispatchable Load Non-Quick Start (NQS) Generator Offer Guarantee eligible resources, Pseudo Units (PSU), Hydroelectric resources, and Energy Storage resources.
- [Day-Ahead Market](#)

Pseudo-Unit Scheduling:

- [MRP - eLearning Modules](#) for Pseudo Units
- [PSU Resources Interim Workarounds](#)

Market Power Mitigation:

- [IESO Academy - eLearning Module](#) for Market Power Mitigation (MPM) Framework
- [MRP - eLearning Modules](#) which are tailored for different participant type

Common Questions

A (cont.):

New participation and resource types:

- [Price Responsive Loads](#)
- [Introduction to Virtual Trading](#)
- [MRP - eLearning Modules](#) for Virtual Transaction and Price Responsive Load
- [Guide to Submitting New Registration Parameters and Forms for Online IESO](#) (Details PRL registration)

Economic Operating Point and Make-Whole Payment:

- [Interjurisdictional Energy Trading](#)
- [Price Responsive Loads](#)

Changes to settlement charge types:

- [MRP Mapping Summary of Charge Types for all MPs](#)
- MRP Mapping Summary of Charge Types and Variance Accounts for LDCs (available upon request to IESO Customer Relations)
- [Introduction to the IESO Settlement Process](#) is also helpful for users that are new to the settlement process

IESO's instructor-led courses:

- [Instructor-Led Courses](#) new dates for the Intro to Markets, Settlement Process and Invoice Reconciliation and Interjurisdictional Trading will be announced soon

Common Questions

A (cont.):

IESO will also be issuing new training material in the coming weeks.

Training Documents:

- Guide to Operating Reserve
- Guide to the Day-Ahead Market
- Guide to IESO Market Calculation Engines
- Guide to Energy Storage Participation

eLearning Courses:

- Introduction to the IESO and Ontario's Physical Markets
 - Part 1 – Getting to know the IESO and Sector Overview
 - Part 2 – Market Participation Overview for Energy and Operating Reserve Markets
 - Part 3 – Overview of Settling the Physical Markets



Next Steps

Next Steps

- The IESO will continue to offer quarterly engagement webinars to provide stakeholders ongoing insight into performance of the renewed market
- In Q4 2025, IESO will also establish a forum to discuss opportunities for enhancements to the market
- The recording and presentation for this engagement can be found on the [Renewed Market Operations page](#)
- If you have any questions on the information shared today, please contact IESOCustomerRelations@ieso.ca

Annual Stakeholder and Community Survey

We want your feedback!

Our Annual Stakeholder and Community Survey is a key opportunity to provide feedback that can help ensure the IESO is effectively engaging stakeholders and communities in our decision-making processes.



Thank You

ieso.ca

1.888.448.7777

IESOCustomerRelations@ieso.ca

engagement@ieso.ca



[@IESO_Tweets](https://twitter.com/IESO_Tweets)



facebook.com/OntarioIESO



linkedin.com/company/IESO