

October 28, 2024

Gabriel Weekes, Senior Policy Advisor
Ontario Ministry of Energy,
Conservation and Renewable Energy Division
77 Grenville Street
Toronto, ON
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Re: ERO # 019-9235; Comments from Ecobee and Generac Power Systems on the Ministry of Energy's Proposal for the 2025–2036 Electricity Energy Efficiency Framework.

Dear Mr. Weekes,

ecobee and Generac are pleased to comment on the Ministry of Energy's Proposal for the 2025–2036 Electricity Energy Efficiency Framework - also known as conservation and demand management (CDM) framework, or electricity demand-side management (eDSM) framework. ecobee and Generac previously submitted more detailed comments during the early development of this proposal as part of the Environmental Registry of Ontario's post-2024 Electricity Energy Efficiency Programming review (ERO # 019-7401).

ecobee Technologies ULC, headquartered in Toronto, Ontario, was founded in 2007 with a mission to improve everyday life while creating a more sustainable world. Since launching the world's first smart thermostat, ecobee has helped customers across North America save more than 31 TWh of energy, which is the equivalent of taking all the homes in Los Angeles and Chicago off the grid for a year. It is estimated that ecobee customers save up to 26% on their heating and cooling costs. In 2024, ecobee was recognized ENERGY STAR Partner of the Year for the fourth consecutive year for its leadership, innovation and commitment to environmental protection through energy efficiency. Today, ecobee continues to innovate with smart home solutions that solve everyday problems with comfort, security, and conservation in mind. ecobee is a part of Generac Holdings Inc. (NYSE: GNRC).

Generac Power Systems (Generac) is a leading energy technology company headquartered in Wisconsin, whose purpose is to lead the evolution toward more resilient, efficient, and sustainable energy solutions around the world. In addition to providing conventional backup generation systems for residential and commercial & industrial applications, Generac provides solar + battery storage solutions, clean energy management devices and controls, solar microinverters, advanced power grid software platforms & services, smart thermostats, EV chargers, virtual power plant platforms, and battery-powered tools and equipment. Through ecobee smart thermostats, Generac is enabling the creation of residential energy ecosystems, with multiple hardware devices interconnected to optimize the consumption and generation of energy within a home.

1. Consider overall grid efficiency including demand flexibility.

ecobee and Generac have been strong proponents of a **demand flexibility target** issued by any jurisdiction that wishes to align incentives for utilities, demand management technology manufacturers and customers to participate in programs at sufficient scale to realize the full potential of this resource. Research shows that demand flexibility can unlock billions annually in avoided grid investments and 10-40% savings on customers' bills when implemented¹. California's Load Management Standards² and the Massachusetts Clean Peak Standard³ are examples of targets that promote and leverage the value of demand flexibility. The California Market Access Program⁴ offers a "total system benefits" approach that encompass avoided costs, GHG emissions and the value tied to specific times when demand-side resources support the grid.

Demand flexibility influences energy consumption up or down to reduce grid strain, consume clean energy and save money for customers and grid operators. It depends on smart technology like software and AI to manage energy continuously, rather than in response to single events. It can be facilitated by not only establishing time-varying customer electricity rates such as the default **time of use (TOU) rates** currently effect in Ontario, but also encouraging automated response to grid conditions at scale through **load management agreements in which consumers are compensated for the grid value of their response**. Such agreements are necessary to align utility and customer incentives and attract the investment of vendors so that market aware grid responses can scale sufficiently to leverage the full potential of the resource.

Ontario has default TOU but no visibility into the actions that energy customers in the Province are taking to shift their usage away from peak hours. Creating programs with market incentives to scale automation around default TOU that incentivizes additional participation will further scale the impact of the resource and provide greater visibility and predictability for grid operating and forecasting purposes. Ontario, which is one of ecobee's largest markets, has over a hundred thousand smart thermostats currently optimizing residential HVAC usage around the peak hours. **This represents approximately 25 MW of load shift daily from ecobee devices alone**, but this impact on the load profile is unknown to the grid operator and left out of planning exercises.

The Ministry of Energy should also consider adopting targets designed to increase the penetration of distributed energy resources among low and moderate income (LMI) customer classes. Automation

¹ Conservative estimates of the economic potential of demand flexibility indicate it can help avoid billions of dollars' worth of traditional grid investments annually, while preserving customer home comfort and reducing their energy bills.
<https://rmi.org/insight/the-economics-of-demand-flexibility/>

² https://www.energy.ca.gov/sites/default/files/2022-10/Load_Management_Fact_Sheet_ADA.pdf

³ <https://www.mass.gov/clean-peak-energy-standard>

⁴ <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/market-access-program>

technology that optimizes consumption around TOU, premise occupancy, and other variables can help these customers achieve persistent, incremental savings of 7-23% on home cooling⁵. Setting and achieving such a target would represent a win-win for the Province and the LMI segment, preserving grid reliability and avoiding additional costs, which would fall most heavily on the customers least able to pay.

2. Adjust Electricity Energy Efficiency programming definition and architecture to appropriately capture Distributed Energy Resources (DERs), Demand Response, and other opportunities arising from new technologies.

To enable greater customer choice to achieve more electricity savings, the Electricity Energy Efficiency programming definition should distinguish “energy efficiency,” “demand response” and “demand flexibility” to emphasize the different capabilities of these resources to serve customers and the grid, and to encourage programs that stack them to realize the full potential of demand-side management.

The definition considers “beneficial electrification” and highlights the need for distributed energy resource (DER) management to help shift and shave electricity demand as beneficial electrification grows, reducing the strain on grid infrastructure while avoiding the need for new or continued reliance on fossil baseload generation. Because beneficial electrification contemplates so many types of connected devices that can be aggregated to provide significant reliable capacity in the form of virtual power plants (VPPs), or that can interact bidirectionally with the grid, defining the various types of DERs, VPPs and DER management and setting targets and standards related to them is equally important. Program architectures should be built around technology-specific approaches designed to maximize the capabilities of the devices in question, and a unique definition and use cases for each asset type is an important starting point.

A good definition of the Electricity Energy Efficiency programming would be:

“The IESO shall consider Electricity Energy Efficiency programming to be inclusive of activities aimed at reducing or shifting peak electricity demand, improving load flexibility, reducing greenhouse gas emissions and reducing economy-wide energy consumption.

Examples include energy efficiency replacements whereby similar output is achieved with less electricity, behind-the-meter consumer generation, load flexibility measures like virtual power plants (VPPs), and demand-side management tools such as demand response, time-varying rates, and emergency grid resiliency programs.”

Additionally, it is critical to ensure that a portfolio of rates and programs are stackable and allow demand-side technology to maximize the customer’s value creation for the grid.

⁵ Customers on time-of-use rates who were most at risk of experiencing higher bills were able to save 7-23% on cooling costs in 2020 by enabling the eco+ suite of software on their ecobee smart thermostat.

<https://www.ecobee.com/en-us/newsroom/press-releases/new-evaluation-report-proves-ecobee-smart-thermostats-save/>

3. **Encourage participation and improve customer engagement in Electricity Energy Efficiency programming.**

Even the most sophisticated energy consumers will not be able to manually optimize their usage in response to constantly changing grid conditions or generation mix proportions. Enabling automation technology vendors to enroll their customers easily and seamlessly in programs such as time of use, demand response, grid resiliency, or real-time pricing will maximize participation in these programs and drive significantly greater load reduction impacts from automating responses rather than relying on behavioral responses⁶.

Customers should not be required to provide a utility account number, scan a QR code or navigate the cumbersome Green Button Connect program to securely and seamlessly enroll in the rates and programs described here. Experience has shown that the customer enrollment funnel collapses at the point at which a customer is distracted from the enrollment flow by having to collect a data point they do not have memorized or fill out a separate form. The California Energy Commission issued a report describing how EnergyHub enrolled just 3% of the eligible customers it targeted for a demand response auction mechanism – due exclusively to the fact that customers experienced barriers to enrollment such as those described here.

The Smart Meter Texas Program is a model for effective customer enrollment. It maintains a database of customer rate identifiers that allow ecobee to identify eligible rates for its device owners by using their residential premise address, which is collected during device setup, to locate their applicable utility rates and programs in the SMT database. Customers can easily enroll with a single click, eliminating the enrollment- based barriers to program scale described above

Finally, device runtime data should be used to inform and manage programs. The telemetry data from ecobee and Generac products has very high resolution and quality, and, importantly, available in near-real time for measurement, verification and settlement purposes. Device owners' consent to terms and conditions that allow ecobee and Generac to share certain information with their load-serving entity, allowing vendors to share valuable insights with grid operators as well.

Sincerely,

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⁶ <https://www.ecobee.com/en-ca/ecoplusemv/>