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Policy Coordination and Outreach Branch
Ministry of Energy and Electrification
77 Grenville Street
Toronto, ON
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Re: ERO # 019-9285; Comments from Ecobee and Generac Power Systems on the Ministry of Energy's Integrated Energy Resource Plan Consultation

ecobee and Generac are pleased to comment on the Ministry of Energy's **Integrated Energy Resource Plan Consultation**. 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.

What policy options and actions should the government consider in the integrated energy resource plan to achieve Ontario's vision for meeting growing energy needs, keeping energy affordable and reliable, ensuring customer choice, and positioning us to be an energy superpower?

ecobee/Generac's comments to the consultation will primarily focus on the role of DERs and leverage our experience from various U.S. states to provide relevant use cases and examples. We believe that the integrated energy resource plan should consider policy actions that empower customers to make informed decisions about their energy use, such as expanding access to innovative technologies like solar, storage, smart thermostats, and electric vehicle charging.

According to the IESO's 2021 Distributed Energy Resources Potential Study[1], DERs have the capability to meet a significant portion of Ontario's future energy needs cost-effectively. Over the 10-year period from 2023 to 2032, DER capacity could address all incremental system requirements. Even when factoring in realistic customer adoption and participation rates, DERs could meet between 1.3 GW and 4.3 GW of Ontario's peak summer demand by 2032, demonstrating their essential role in the province's energy future. The U.S. Department of Energy's VPP Liftoff[2] report further emphasizes the importance that DERs and VPPs can have on the grid from a reliability and cost perspective.

We echo the assessment of the electrification and energy transition panel in their Report Ontario's clean energy opportunity that there is a need to advance the regulatory environment to enable effective participation of DERs and eliminate barriers.

1. **Empowering Customer Adoption of DERs through Upfront Incentives, Coupled with Ongoing Incentives.**

The first step to empowering customers to install innovative technologies that generate, or store energy on-site is providing upfront incentives for the installation. Upfront incentives for technologies like solar panels, energy storage systems, or electric vehicle (EV) chargers are essential to cover installation costs and encourage adoption. Once customers are enrolled, these assets can be utilized for ongoing cycling incentives, where customers are compensated for allowing their DERs, such as batteries, to discharge and support grid stability during peak demand periods.

California's **AB 205**[3], which outlines priorities for the Distributed Electricity Backup Assets (DEBA) and **Demand-Side Grid Support (DSGS**)[4] programs, offers valuable insights. AB 205 emphasizes prioritizing "feasible, cost-effective demand response and efficiency resources, followed by renewable, zero-emission resources, and finally, conventional resources." The Demand-Side Grid Support Program (GSGS) in California incentivizes participants who install energy-efficient technologies, such as battery storage, by compensating them for their participation in grid events throughout the year.

To further encourage DER adoption in Ontario, the province should couple upfront incentives with ongoing incentives that align with evolving rate structures. Another example includes the implementation of **Time-of-Use (TOU) rates for electric vehicle (EV) charging,** which incentivize off-peak usage and help optimize grid demand. Ontario should also continue and **expand its net metering program**, ensuring that customers receive fair compensation for the energy they generate and feed back into the grid.

In addition to financial incentives, **faster interconnection** processes are vital to ensure the timely deployment of DER systems. The Interstate Renewable Energy Council (IREC)[5] has provided recommendations for

[1] https://www.dunsky.com/wp-content/uploads/DER-potential-study-IESO-Dunsky-Vol1.pdf
[2] https://liftoff.energy.gov/vpp/
[3] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB205
[4] https://www.energy.ca.gov/programs-and-topics/programs/demand-side-grid-support-program
[5] https://irecusa.org/resources/

streamlining interconnection procedures, aiming to reduce delays and promote faster deployment of clean energy technologies. By implementing similar measures, Ontario could expedite the growth of residential energy systems and enhance the overall success of its DER initiatives.

2. **Facilitating Integration of Distributed Energy Resources (DERs) into Wholesale Energy Markets.**

ecobee and Generac support **FERC Order 2222**[6]'s recommendations, particularly regarding participation aggregations and flexibility in aggregation models. Allowing DERs to **participate in wholesale markets—either individually or through aggregation**—is crucial for enabling smaller resources to meet market participation thresholds. As identified in the Independent Electricity System Operator (IESO)'s Distributed Energy Resources Market Vision and Design Project (MVP)[7], enhancing the flexibility of aggregated demand-side resources has been a key strategy in U.S. jurisdictions to implement more effective wholesale participation models for DERs, in line with FERC Order 2222. More generally, when designing its Integrated Energy Resource Plan, we recommend that the Ministry of Energy and Electrification conduct a comprehensive assessment of FERC Order 2222 and its broader implications, to identify potential policy options that may be applicable to Ontario's energy landscape.

We recommend that IESO continue to develop market rules that accommodate various DER aggregation models, promoting resource diversity and expanding participation. Additionally, operational standards should be established for DER aggregators, ensuring reliability and facilitating coordination and data-sharing between Local Distribution Companies (LDCs) and the wholesale market.

Furthermore, Ontario should continue projects like the York Region Non-Wires Alternatives Demonstration, which tests ways to **remove barriers hindering DER market participation**. This includes eliminating restrictive minimum size thresholds and aligning market rules with the diverse capabilities of DERs. The IESO should officially **recognize DER aggregations as a distinct resource type** within its wholesale market framework, ensuring they are integrated and appropriately accounted for in market operations.

The IESO's DER Roadmap should also prioritize **transparent pricing** and equitable treatment of DERs, ensuring their contributions to grid services are reflected in market compensation mechanisms. Additionally, monetizing DER aggregation—such as solar, battery storage, electric vehicles, and smart thermostats—by combining these resources into a single **Virtual Power Plant (VPP)** can optimize grid services, enable greater market participation, and provide new revenue streams for resource owners, while enhancing grid reliability.

A key example of successful DER integration into wholesale markets is ISO New England's Distributed Energy Resource Aggregation (DERA)[8] resource type. This model enables small-scale DERs, such as solar, storage, and demand response, to be aggregated into a single resource for participation in wholesale energy markets. It helps

[6] https://www.ferc.gov/media/ferc-order-no-2222-fact-sheet
[7] https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Distributed-Energy-Resources-Market-Vision-and-Design-Project
[8] https://www.iso-ne.com/static-assets/documents/2022/06/iso_new_england_uconn_5_20_2022.pdf

address challenges like minimum size thresholds, fostering market flexibility and increasing DER participation. This approach also allows for monetizing aggregated assets like VPPs, providing new revenue opportunities and contributing to improved grid reliability. It serves as an excellent example of how effective policy and market design can overcome barriers and integrate DERs into wholesale markets.

3. Removing Barriers to Participation and Enhancing Customer Engagement in DERs.

To maximize participation in Distributed Energy Resources (DER) programs, it is essential to streamline the enrollment process for customers. A key strategy is to ensure that customers can **easily enroll without unnecessary barriers, such as requiring utility account numbers or navigating complex systems** like Green Button Connect. Research has shown that customer enrollment rates drop significantly when customers are asked to provide information, they do not have readily available or are directed to additional forms. For example, a California Energy Commission report highlighted that Energy Hub's demand response auction mechanism enrolled only 3% of its eligible customers due to these enrollment hurdles.

A model of effective customer enrollment can be seen in the Smart Meter Texas (SMT) Program[9], which allows customers to enroll seamlessly by using their residential address to identify eligible rates and programs. By accessing this database during device setup, customers can enroll with just one click, eliminating barriers to program participation and scaling.

Additionally, to further enhance customer engagement and support long-term DER adoption, utilities should consider adopting **opt-out enrollment models.** Unlike opt-in programs, where customers must take action to enroll, opt-out programs automatically include customers but offer them the choice to opt out. This approach has been proven to increase participation rates and improve customer satisfaction. For instance, the UK's Winter Demand Flexibility Service saw a 50% increase in participation from 1.6 million to 2.4 million households during the 2023-24 season[10]. Studies show that opt-out enrollment rates are 3.5 times higher than opt-in rates, with similar retention levels across both models[11]. The RMI's Power Shift report[12] also suggests opt-out programs as a mechanism to simplify and accelerate VPP enrollment. By implementing opt-out enrollment for DER programs, the IESO and LDCs can enhance engagement, reduce administrative costs, and maximize program impact.

4. Expanding Access to DER Programs for Income-Eligible Customers

Targeted programs and enhanced incentives are essential to effectively expand access to Distributed Energy Resources (DERs) for income-eligible customers.

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[9] https://utilityapi.com/docs/utilities/smt
[10] https://www.neso.energy/document/308731/download [slide 5]
[11] https://www.energy.gov/sites/prod/files/2016/12/f34/CBS_Final_Program_Impact_Report_Draft_20161101_0.pdf [Table Table ES-2., pviii]
[12] https://rmi.org/wp-content/uploads/dlm_uploads/2024/09/power_shift_report.pdf

The Massachusetts ConnectedSolutions program provides incentives to residential, commercial, and industrial customers who participate in demand-response activities, such as allowing their electric suppliers to access energy stored in grid-connected batteries or curtailing energy use via smart thermostats or electric vehicle charging during peak demand periods. This program has successfully reduced peak demand, provided cost savings for ratepayers, supported the adoption of customer batteries, enhanced resiliency, and contributed to meeting the state's energy storage and clean peak goals. To enhance the program's impact, a key recommendation[13] is to establish specific enrollment targets for income-eligible customers, paired with higher incentive rates, to ensure equitable participation. This approach would increase access to valuable energy resources for underrepresented communities while improving overall program effectiveness.

Similarly, the NYSERDA Residential and Retail Energy Storage Market[14] Acceleration Incentives program focuses on providing significant upfront incentives for the installation of energy storage systems in income-eligible homes. This initiative targets vulnerable communities by integrating battery storage solutions that enable low- to moderate-income households to manage energy costs, reduce exposure to peak electricity prices, and support grid resilience. The NYSERDA program also includes provisions for income-eligible customers to receive higher incentives and more extensive support to overcome financial barriers, further improving access to distributed energy resources (DERs) and energy efficiency solutions for these communities.

5. **Metering and Data Transparency for DERs.**

The IESO should consider expanding beyond traditional utility-based metering at the smart meter level and explore more granular measurement approaches that capture individual device performance, such as curtailment or generation data. While current methods prioritize simplicity and efficiency by measuring at the meter, they may overlook the operational details occurring **behind the meter.** This could limit the full market value of Distributed Energy Resources (DERs).

California's Demand Side Grid Support Program (DSGS)[15] provides a useful example by enabling detailed measurements and runtime data, particularly for assets like batteries and smart thermostats. By adopting similar device-level measurement practices, Ontario could increase competition and equity, as it would allow more companies to participate by accurately capturing the contributions of smaller assets. This approach ensures that the value of intermittent assets, such as storage devices that may only be active during specific conditions, is fully recognized. This would, in turn, foster greater market participation and allow for more dynamic grid support.

However, while real-time operational data from DERs is increasingly valuable for system operators to predict, monitor, and influence grid operations, it's essential to balance this need with the cost and complexity for DER providers. FERC Order 2222 requires ISOs and RTOs to establish **provisions addressing metering and telemetry**, but emphasizes that these provisions should not impose unnecessary burdens on DER aggregators

[13] https://www.cleanegroup.org/publication/connectedsolutions-assessment-for-massachusetts/
[14] https://www.nyserda.ny.gov/All-Programs/Energy-Storage-Program
[15] https://www.energy.ca.gov/programs-and-topics/programs/demand-side-grid-support-program

or individual resources, as this could create barriers to market participation. For example, while ISO in New England created a DERA resource type, they did not eliminate the telemetry requirement, which still hinders DER participation. This highlights the need for both specific DER resource classifications and the removal of unnecessary participation barriers to fully enable DERs.

The device-level data from ecobee and Generac products are of high resolution and available in near-real time for measurement, verification, and settlement purposes. With device owners' consent to share specific data with their load-serving entities, these companies can provide valuable insights to grid operators, ensuring that operational data supports a more dynamic and efficient energy market.

Sincerely,

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