POWER HOUSE

alectra
GRE&T Centre
Green Energy & Technology

# POWER.HOUSE™ virtual power plant delivers **peace of mind**

In 2015, Alectra launched a residential solar storage pilot—POWER.HOUSE™. POWER.HOUSE™ is a fully integrated, digitally controlled solution that is providing key insights about the potential to deploy residential solar at scale, as well as determining consumers' readiness to take an active role in managing their homes' energy efficiency. The pilot evaluates the economic and grid benefits of residential solar storage for consumers and Ontario's electricity system.

Twenty households were enlisted to displace a portion of the electricity sourced from the grid system with their own solar-generated energy and battery storage system. The pilot demonstrates that a network of distributed energy resources (DERs) like solar can respond in real-time to support Ontario's electricity system.

## Innovating & Collaborating together to:

- ✓ Evaluate the potential of residential solar storage in a grid-connected environment
- ✓ Manage the flow of electricity that is fed back into the grid from each home
- ✓ Ensure a reliable flow of electricity to each home during an outage or on cloudy days

## The Challenge

DERs are radically changing the way electricity is generated and distributed. One of the key challenges is maintaining the safety and reliability of power grids as more wind and solar resources are connected. Consumers are looking for clean energy alternatives that balance environmental concerns with energy affordability and reliability.

## The Solution

Alectra's POWER.HOUSE™ pilot enables customers to generate their own clean, renewable energy and store it in case of an outage. It gives consumers more control over when and how much power they consume and provides them with an on-bill credit for feeding energy back into the power grid. By treating the cluster of 20 homes in the pilot as a single "virtual power plant," the solution positions Alectra to ensure consumers' homes use energy efficiently, to manage demand response requests from the provincial system operator effectively, and to provide power outage support when required.


This illustration shows how the POWER.HOUSE™ virtual power plant works, including the networking of 20 houses in York Region to demonstrate the pilot's grid-support potential and addresses the sector's questions about sustainability, scalability and affordability.

## Benefits

- Improved reliability
- Peace of mind during power outages
- Reduced electricity bills
- Cleaner power generation
- Insights for managing residential solar at scale

### In Collaboration With

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**Alectra GRE&T Centre**
395 Southgate Drive, Guelph, ON N1G 4Y1
519.822.3010 | GREAT@alectrautilities.com | alectrautilities.com/GREATCentre

@AlectraNews