

Welcome!

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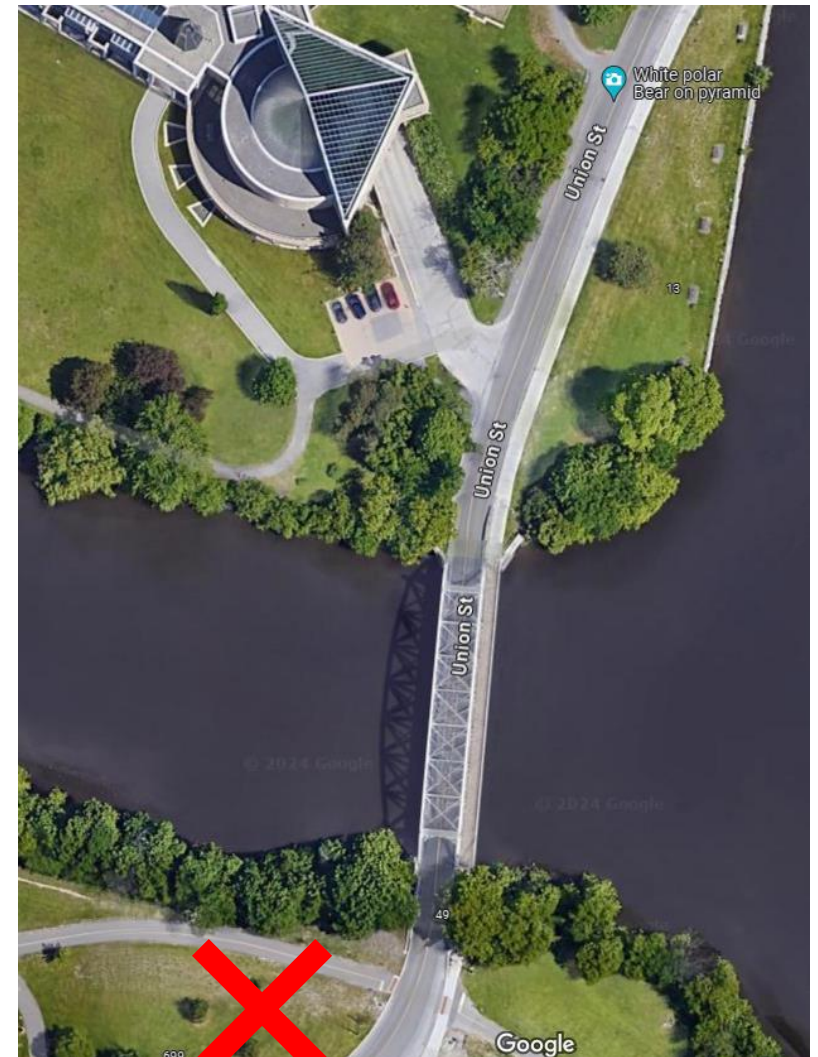
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Housekeeping

- Emergency exits & meeting point
- Restrooms – from the hallway

Smart Grid 2.0

- Smart Grid Program renewed under Budget 2023 under OERD's Energy Innovation Program
- Selected Expressions of Interest have advanced to Full Project Proposals
- NRCan delegates will not respond to any project or program selection questions
- Questions? Write to sg-ri@nrcan-rncan.gc.ca



Opening Prayer

Elder Verna McGregor

Elder in Residence
Natural Resources Canada

Aînée en résidence
Ressources naturelles Canada



Introduction

Amanda Wilson

Director General,
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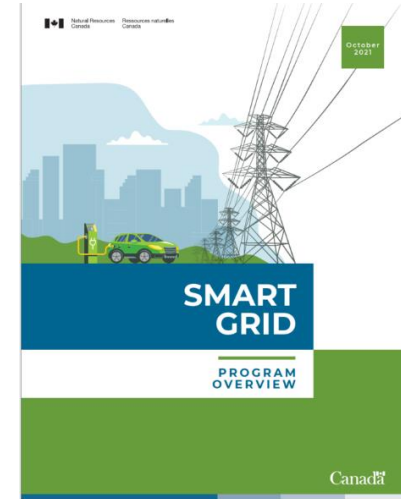
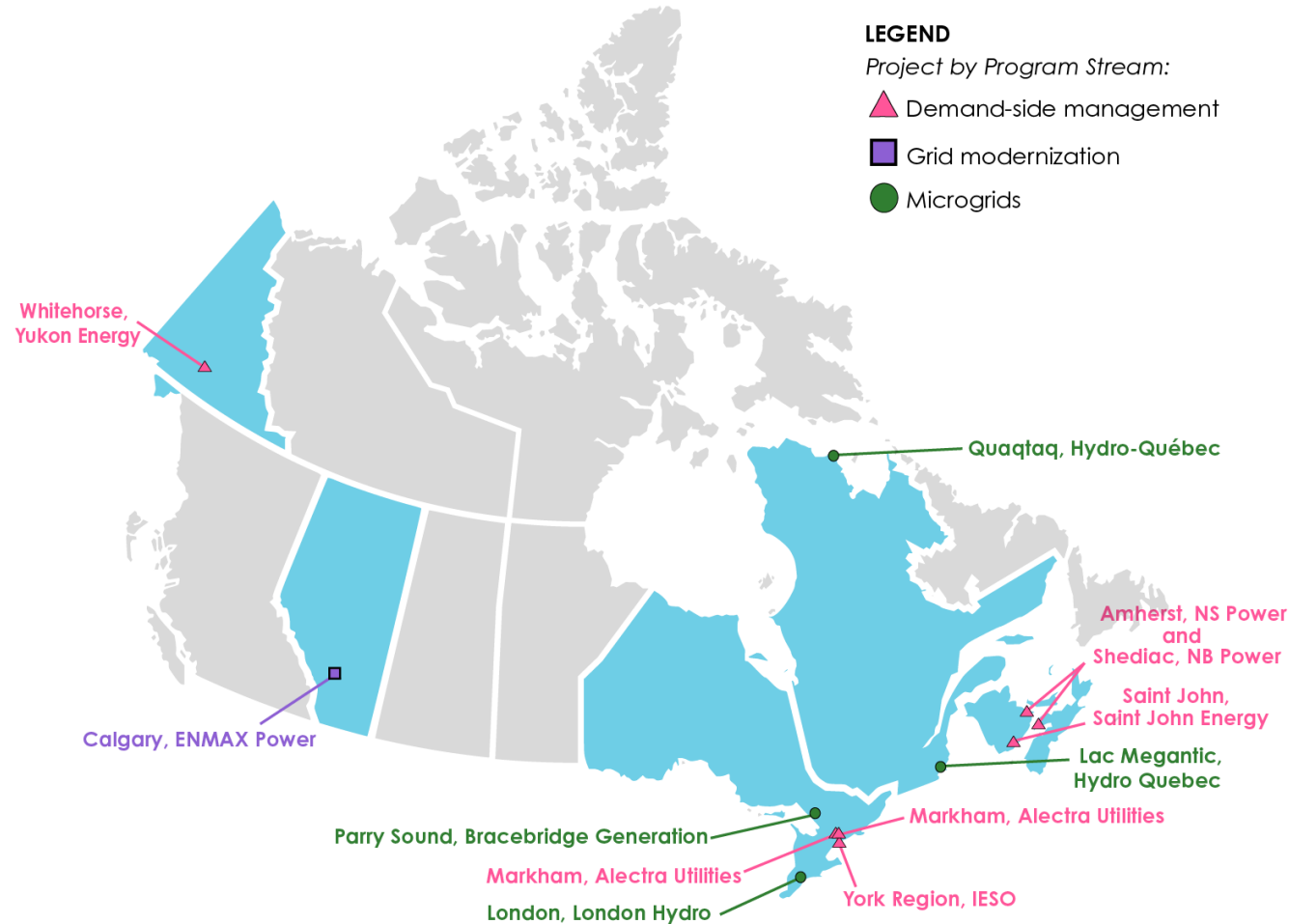
Demonstration Program Delivery

\$100M in funding over 5 years

- Demonstrations (\$35M)
- Deployments (\$65M)

22 Projects

- 8 provinces & territories
- 10 Deployment
- 6 Demonstration
- 6 Hybrid



[SGP Brochure \(EN\)](#)

[Aperçu PRI \(FR\)](#)



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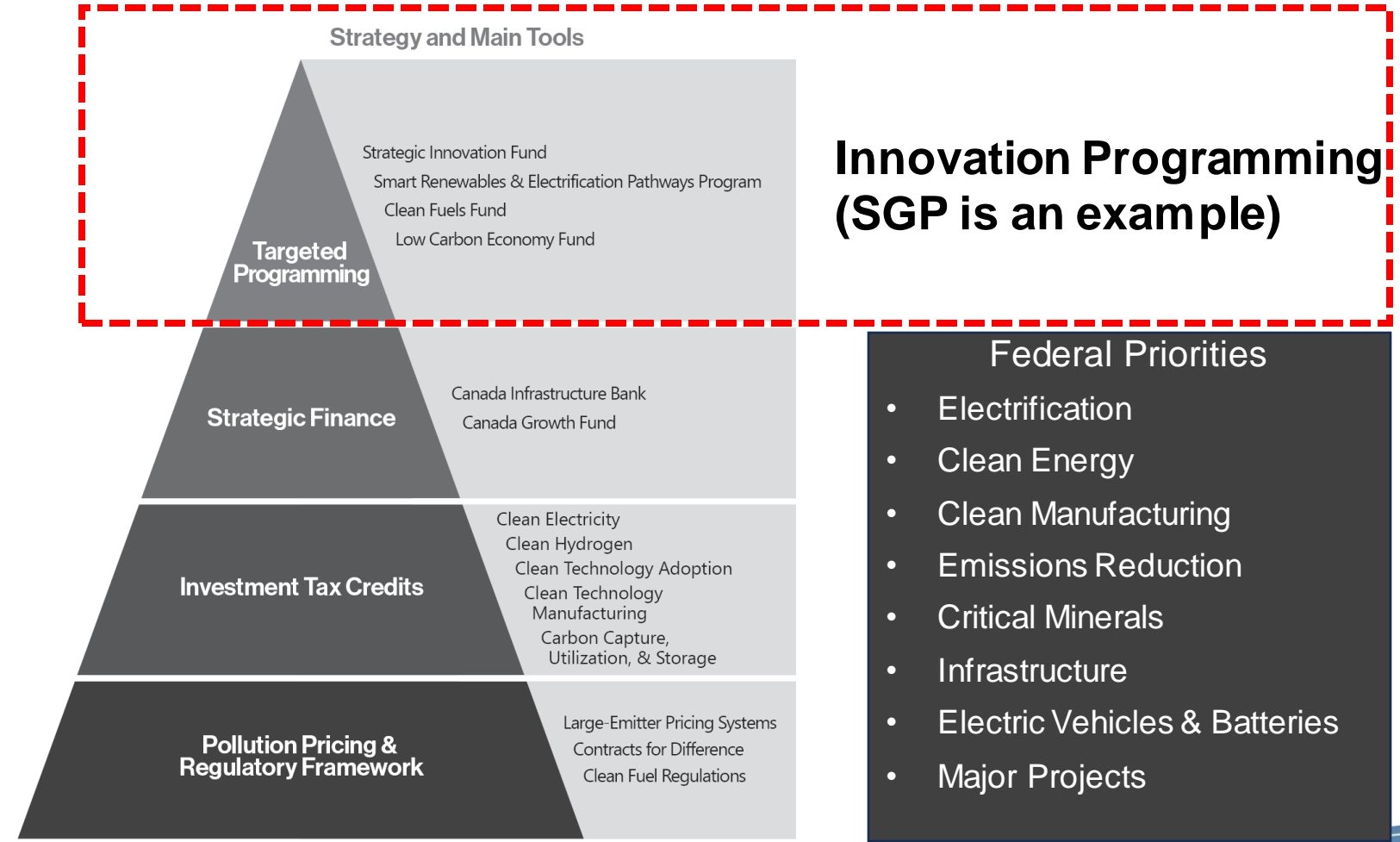
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Program Outcomes: The Smart Grid Program (SGP) is the only targeted smart grid innovation initiative in the Federal Government

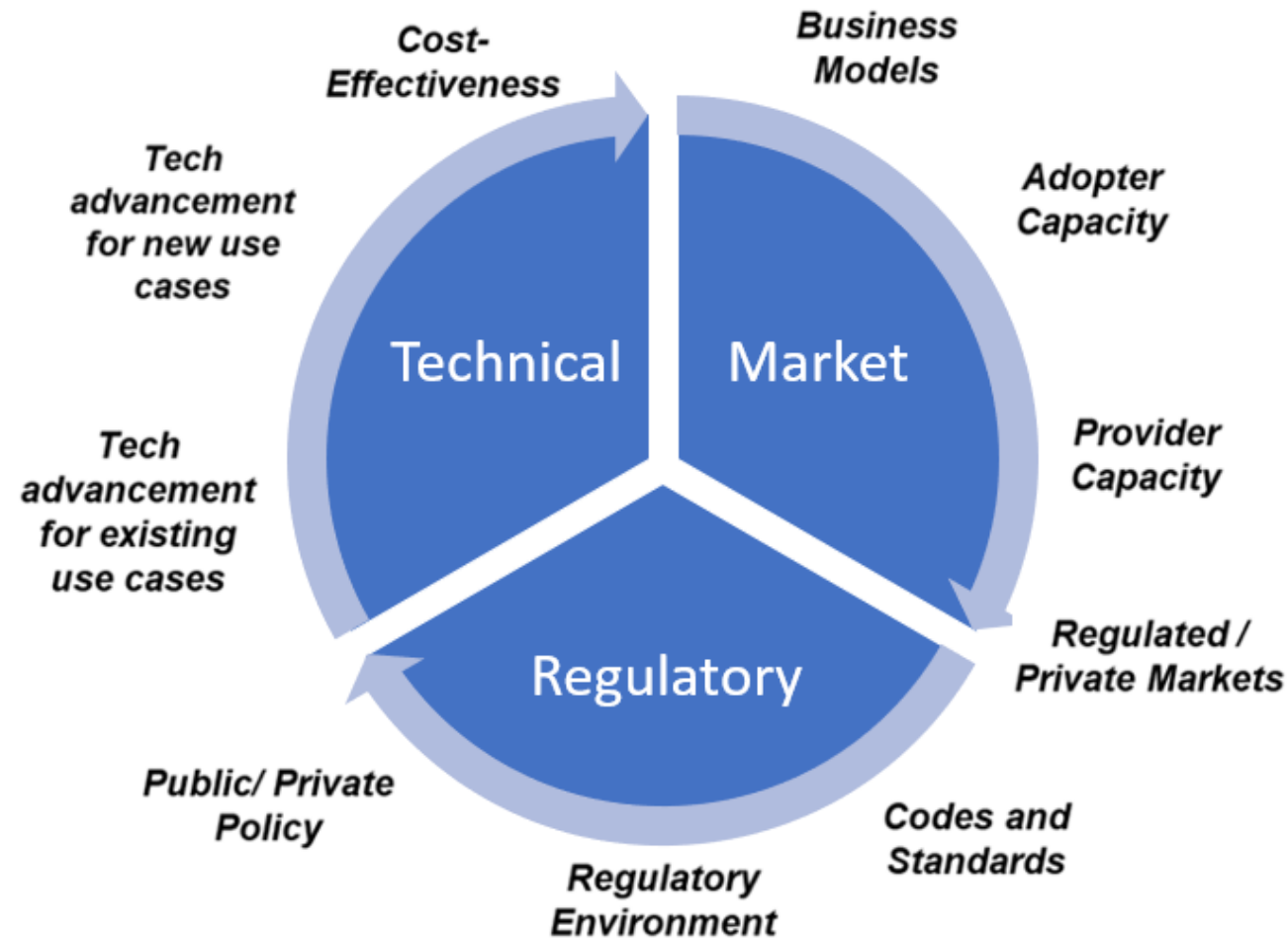
When cost is the main barrier:

- This policy pyramid (B2023) illustrates the federal toolkit in mobilizing private capital for clean growth.
- Designed for addressing barriers to deployment of commercial technology.
 - More easily applied on a device/technology basis.
- Influences the "pathway to scale" from demonstrations.



Innovation is more than technology

Over the next few slides, the SGP's achievements will highlight this theme.



Many 'Firsts' and internationally renowned for more than technological development



- **NRCan Smart Grid Program:** Clean 50 Project Award
- **Lac Mégantic:** Prix Novae
- **Saint John Energy:** ISGAN Award of Excellence

First-of-its-Kind Demonstrations & Innovative Applications

- **Saint John Energy:** World's first installation of a Tesla Megapack battery
- **Yukon Energy:** Residential Demand Response Program
- **ENMAX:** First solution in North America to enable two-way power flow from customer-owned DER on secondary network in urban setting
- **IESO:** North America's first distribution market leveraging DER for wholesale services (*Market Innovation*)
- **Alectra:** Transactive energy platform using Blockchain, and gas-electric coordination (*Market Innovation*)
- **Hydro-Quebec:** First island-able medium voltage microgrid in Quebec
- **Bracebridge:** DEMOCRASI project as Power Forward Challenge



Cascading Impacts – Breaking out of Death by Pilot

Replicable success leads to commercial technological scale-up, regulatory innovation, and market readiness impacts.



Technological Scale-up

- **Yukon Energy:** expansion of the pilot into a full-scale DSM program
- **IESO:** York Region NWA project laid groundwork for whole-system optimization, with establishment of Tx-Dx working group
- **ENMAX, Lac Mégantic, Bracebridge, West 5:** models ready for replication in other cities.



Regulatory Innovation

- **Nova Scotia Power:** 1st Application of Innovation Justification Criteria
- **Innovation & Electricity Regulation Initiative (IERI):** enabling regulatory innovation



Market Readiness

- Over the duration of the Program, **customer-centric models** are rapidly developed.
- **Community engagements and new actors** are being empowered to participate in electricity markets.
- **Solution providers and suppliers** are learning how to best equip new market players.



GHG reductions

19,030 tonnes CO₂e per year

- Smart Grid Projects are enabling emission reductions, more than directly reducing them.

Electrification



Peak Shaving



Renewable Generation



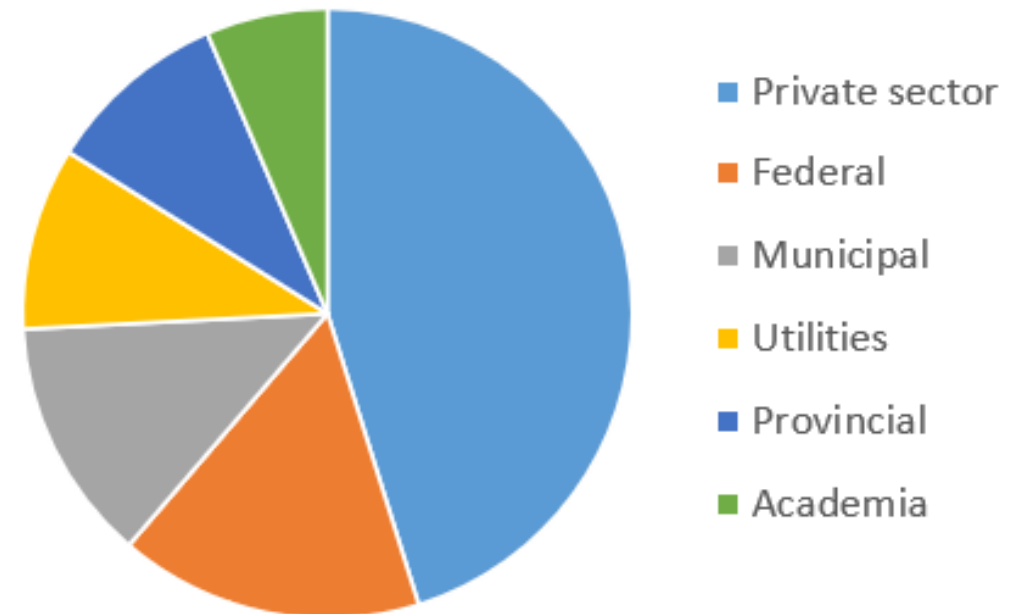
Who are the key partners in Innovation?

- Partner = providing cash or in-kind
- Many other collaborators:
 - primarily private sector (e.g. technology developers, installers; data management companies; property developers; investors)
 - Also municipalities, universities, colleges, and NGOs

29 partners across projects

2.6 ave. partners per project

Types of partners



Federal Dollars → Local Economic Development

Partnerships across two projects



Proponent 1



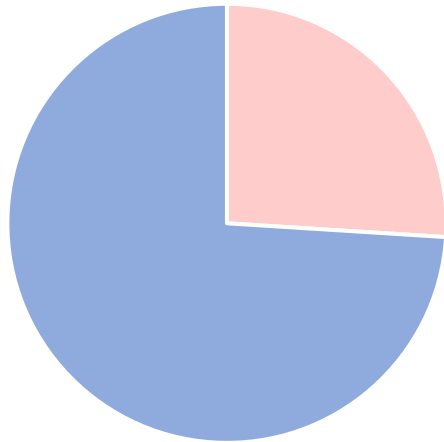
Proponent 2

- Majority of vendors and collaborating companies are **Canadian**. Many are local.
- Federal dollars convert to **local dollars, capacity development, and community empowerment.**

Building the Workforce of Tomorrow

Employment

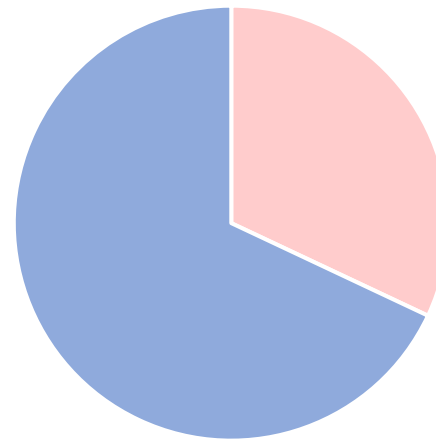
256 job-years
(all streams)



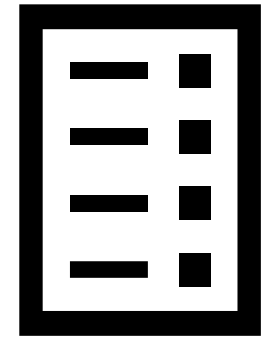
26% women & gender-diverse
74% men

Training

540 months
Highly Qualified Personnel
(demo & hybrid only)



32% women & gender-diverse
68% men



**Increased reporting of Utilities having
Diversity & Inclusion Plans**

Note: Gender data may not be representative as reporting disaggregated data by gender is voluntary.



Find out more: download the public reports!

All Smart Grid Project reports can be accessed through the Smart Grid Program Web Page.

Step 1: Smart Grid Program Website →

Click 'Text Version: Table 1 List of Projects Funded by the Smart Grid program'



EN: <https://www.nrcan.gc.ca/SmartGridProgram>
FR: <https://www.nrcan.gc.ca/ProgrammeReseauxIntelligents>



Step 2: Access Project Page & Public Reports

Smart, Proactive, Enabled, Energy Distribution; Intelligent, Efficiently, Responsive (SPEEDIER) project

Strategic Area
Smart Grid Demonstration & Deployment

Status
Completed

Partners
Opus One Solutions Energy ULC
Lakeland Holdings
Georgian College

Fund
Green Infrastructure

Year
2018

GI Contribution
\$1,669,800 – Demonstration
\$2,087,249 – Deployment

Project Total
\$8,280,812


Location
Parry Sound, ON

Find out more
[Final Public Report: Project SPEEDIER](#)
[Bracebridge Generation Ltd, Lakeland Solutions SPEEDIER](#)

Lead Proponent
Bracebridge Generation Ltd.

Project Background
The objective of Project SPEEDIER was to create a Smart, Proactive, Enabled, Energy Distribution -Intelligently, Efficiently and Responsive grid in the Town of Parry Sound, Ontario. SPEEDIER addresses the issue of reducing load on a constrained transmission system and offers a unique opportunity where a rural municipality of 6,000 residents is pledging to be net zero in partnership with the local utility. This project modernizes the Town of Parry Sound's grid and facilitates the shift towards a net-zero smart community by leveraging existing initiatives and integrating more renewable energy; distributed energy resources (DER), and intelligently with seamless islanding capabilities and providing DERs and visibility to the entire grid.
The microgrid's main components are a grid-tied MW/2.5MWh, and a 500 kW AC solar installation of renewable generation respectively. The integrated Electric Vehicle chargers and one level-3 Electric of 10 residential batteries (50KW/130KWh total controllers. These diverse DERs are integrated Resource Management System (DERMS) and the generation and consumption is balanced by a System (MEMS).

Results
Project SPEEDIER successfully demonstrated all the initial project goals. Solar and energy



[Text version](#)

Find out more
[Final Public Report: Project SPEEDIER](#)



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