CCRE Microgrids & Distributed Energy: Is There A Revolution Coming? The PowerStream Journey & Perspective… So Far
About PowerStream

- Leading energy company that is also the 2nd largest municipally-owned LDC in Ontario.
- Provides service to more than 380,000 customers residing or owning a business in 15 communities.
- Employs over 500 employees.
- Has more than $1.3 billion in assets.
- Jointly owned by the municipalities of Barrie, Markham and Vaughan.
- Currently undergoing a merger with three other utilities in the Greater Toronto Hamilton Area.
  - growing from 380,000 to 1 million customers.
Advancing Alternate Energy Solutions

- Microgrid
- Smart Home Technologies
- Demand Response
- Residential Nanogrid
- Electric Vehicle Integration
- Commercial Microgrid
Rosewater Battery not working. Need to decommission and bring in market leader a bi-directional battery (Sunverge, Tesla, Eguana)
About PowerStream & KEPCO Partnership

- PowerStream and Korea Electric Power Corporation (KEPCO) launched a utility-scaled Microgrid in Penetanguishene, Ontario, Canada. This Microgrid is also helping to reinforce the existing grid by increasing resiliency and operational flexibility.

- PowerStream and KEPCO entered a Joint Development Agreement, offering the innovative MiDAS Microgrid Solution to communities and customers.

- PowerStream is recognized as one of the “Ten Best Smart Grid Solution Provider” for 2016 by Energy CIO Insights.

- KEPCO is ranked the 1st in the electric utility sector for 2016 on the Forbes Global 2000 public companies list.
Welcome to PowerStream and KEPCO Penetanguishene Microgrid

Key Features:
- Interconnected to feeder F1 out of Robert Street MS
- 750kVA Power Conversion System (PCS)
- 500 kWh Lithium Ion, Samsung batteries
- Autonomous Microgrid Controller
- Distribution Automation Functions
MiDAS Microgrid Solution Deployments

**Ontario, Canada**
- Wind, Solar, Batteries, Natural Gas generator
- Grid Tied, Commercial
- Behind-the-meter

**Penetanguishine**
- Battery 500 kWh
- PCS 750 kW
- Grid Tied, Utility Scale
- On a feeder

**Cityview Microgrid**
- Wind, Solar, Batteries, Natural Gas generator
- Grid Tied, Commercial
- Behind-the-meter

**Ga-sa Island**
- PV, Wind, Diesel
- Battery 3MWh
- PCS 1,250 kVA
- Remote Microgrid

**Palgeum, Shin-an**
- PV
- Battery 1 MWh
- PCS 1,000 KVA
- Grid Tied, Utility Scale

**Anjwa, Shin-an**
- PV, Diesel
- Battery 100 kWh
- PCS 50 kVA
- Grid Tied, Commercial

**Bigeum, Shin-an**
- Wind
- Battery 250kWh
- PCS 500 kVA
- Grid Tied, Utility scale

**Mozambique**
- PV, Biogas, Diesel
- Battery 100 kWh
- PCS 50 kVA
- Remote Microgrid

**KEPCO RI, Daejeon**
- PV
- Battery 200 kWh
- PCS 100 KVA
- Grid Tied, Commercial
MICROGRID - Residential Scale POWERHOUSE

SAVE
Money

PROTECT
Against Outages

GENERATE
Your Own Power

PowerStream
Introducing
POWER.HOUSE.

Power your home with solar… even after the sun goes down!

Program Details:

• Reduce electricity bill, up to $100 per month
• Offering, first time in Ontario, Net Metering on Time-of-Use
  • No-worry system; owned, operated and maintained by PowerStream
• Upfront payment towards installation $3500
• Monthly service fee $20 over 5 year contract
• Upfront cost guaranteed payback in 5 years
  • Installation over 2-3 days
• System commissioned and dispatch model programmed by PowerStream

www.PowerStream.ca/PowerHouse
Final Thought

“The world is moving so fast today that those who say it can’t be done are usually interrupted by those doing it.”