

DISTRIBUTED RESOURCE INTEGRATION ON THE GRID

DECEMBER 4, 2019

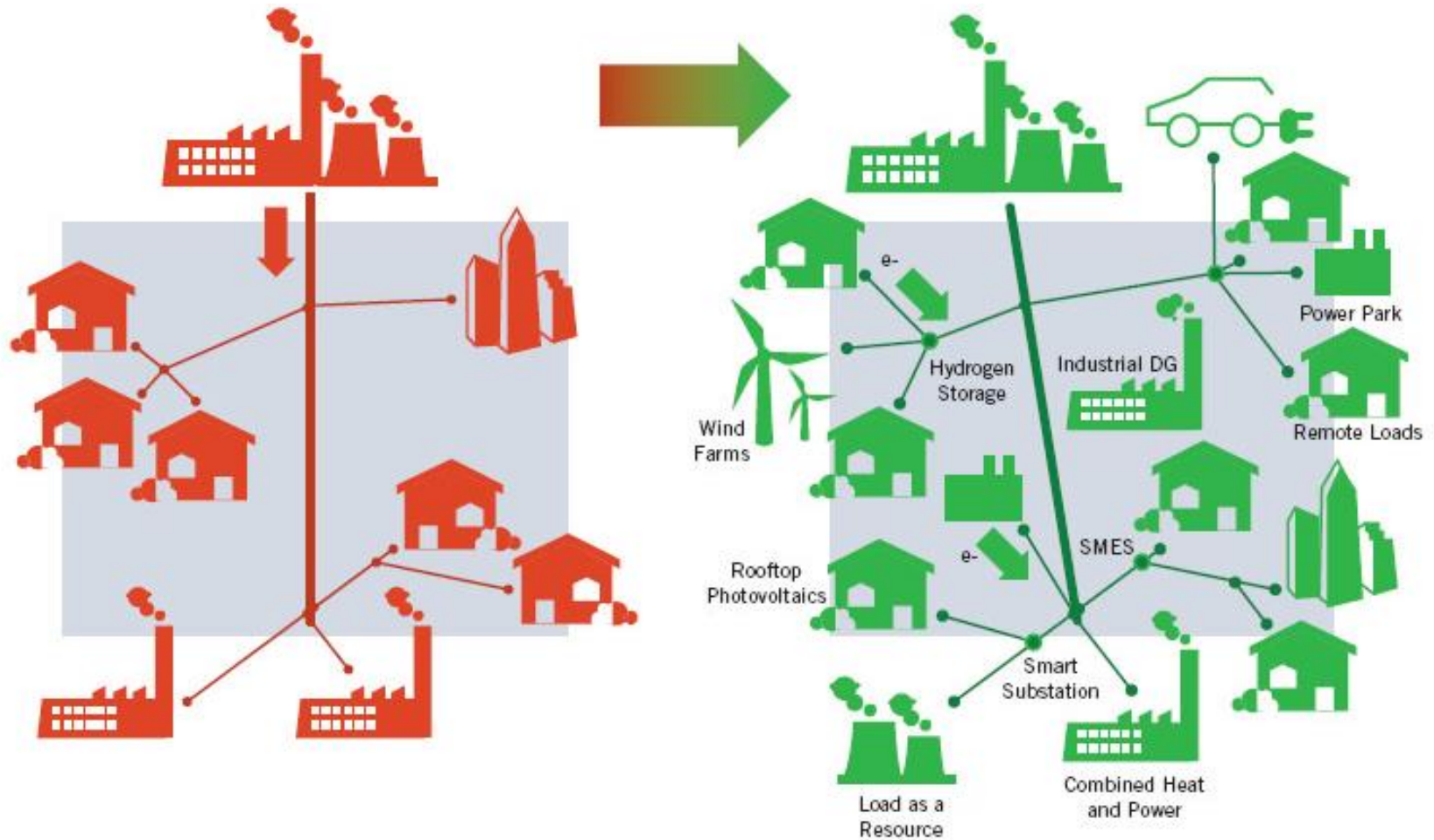
NS POWER BY THE NUMBERS

- **95%** OF THE GENERATION, TRANSMISSION & DISTRIBUTION OF ELECTRICITY IN NS
- **511,000** RESIDENTIAL, COMMERCIAL AND INDUSTRIAL CUSTOMERS
- **1,700** DEDICATED, SAFETY-FOCUSED PROFESSIONALS
- **\$4.1 BILLION** OF GENERATION, TRANSMISSION AND DISTRIBUTION ASSETS
- **11,000** GIGAWATT HOURS OF ELECTRICITY PRODUCED EACH YEAR
- **2,453** MEGAWATTS OF GENERATION CAPACITY;
 - **2,238** MEGAWATTS PEAK (WINTER)
 - **606** MEGAWATTS OF WIND CAPACITY
- **32,000** KM OF TRANSMISSION AND DISTRIBUTION LINES

HOW WE MAKE ELECTRICITY

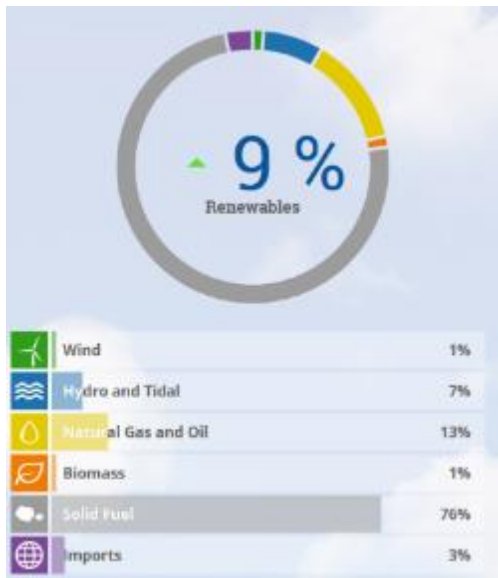


ELECTRICITY SYSTEM IS EVOLVING

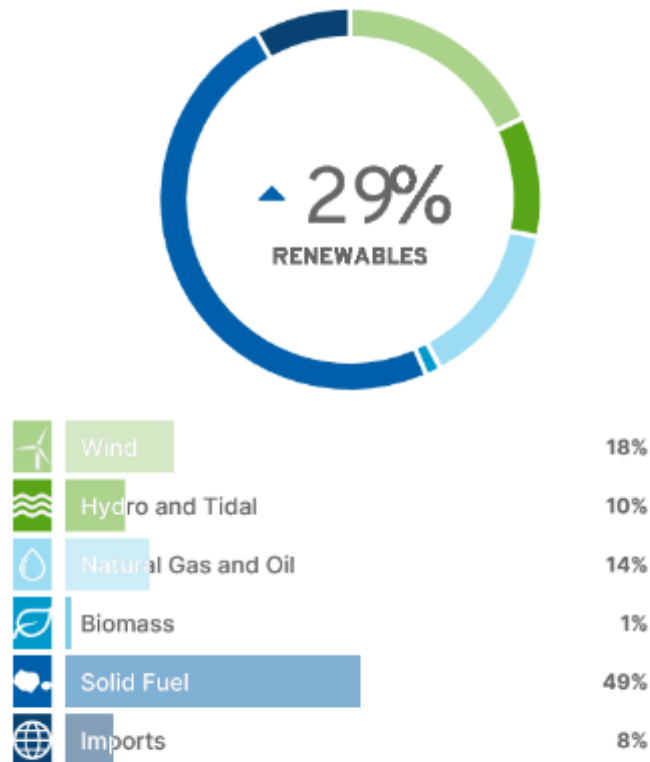


TRANSITIONING TO RENEWABLES

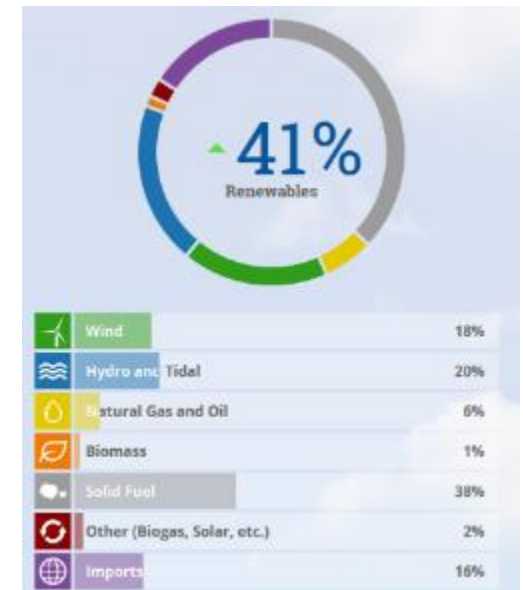
2007



2019 Year-to-Date

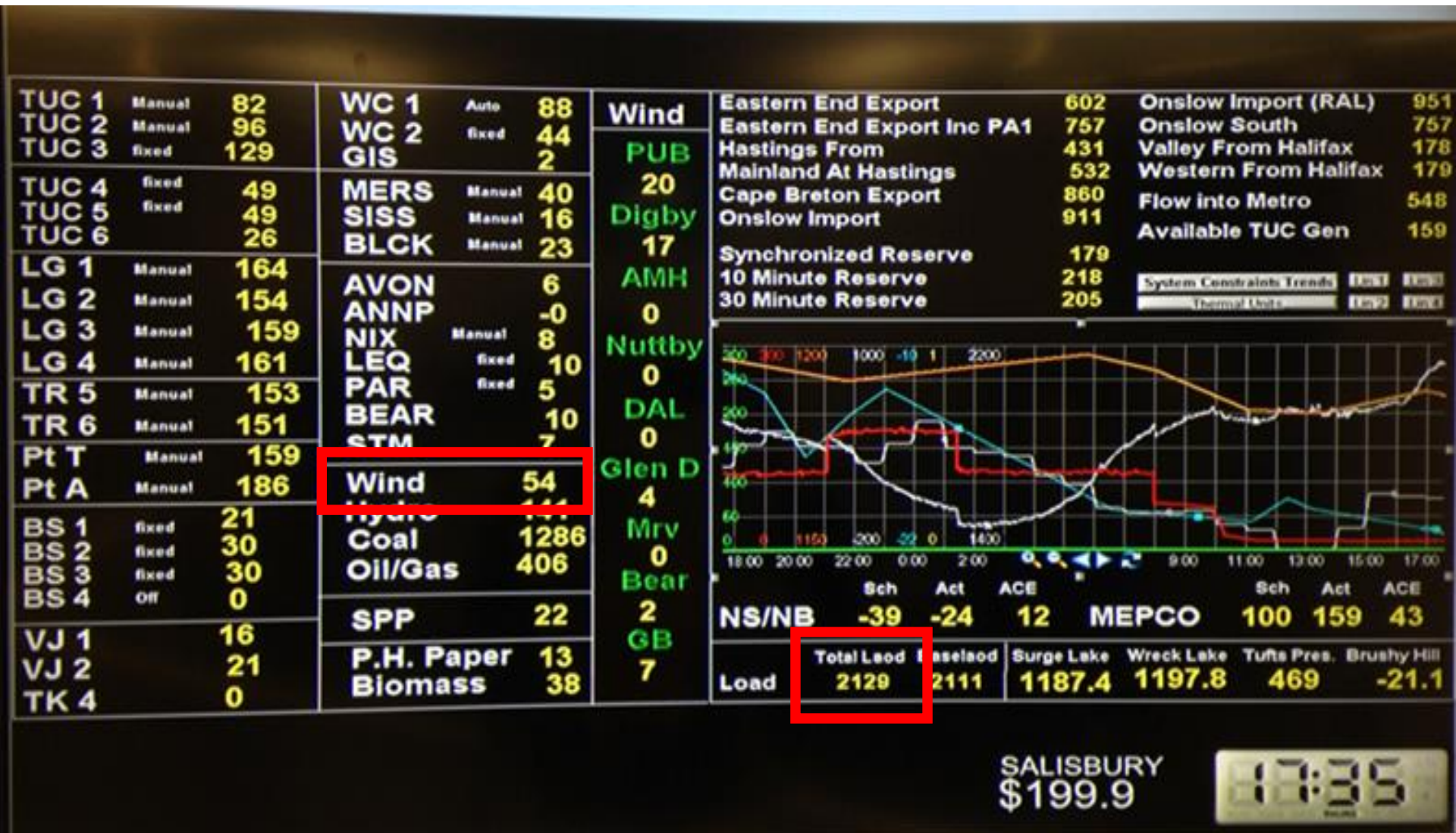


2020 Forecast

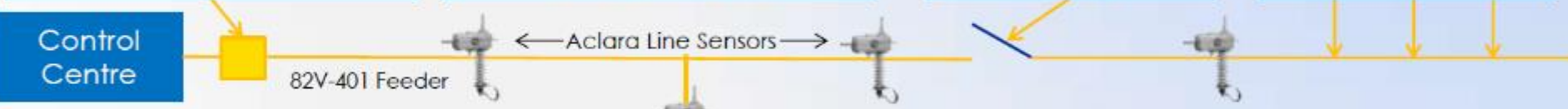
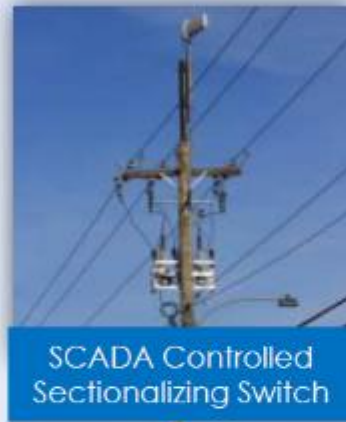


Last updated: December 3, 2019 - 04:00 PM

TRANSITIONING TO RENEWABLES



INTELLIGENT FEEDER PROJECT



- GridOS**
- Real time controls
 - DER management
 - Optimal power flow
 - TE market operations

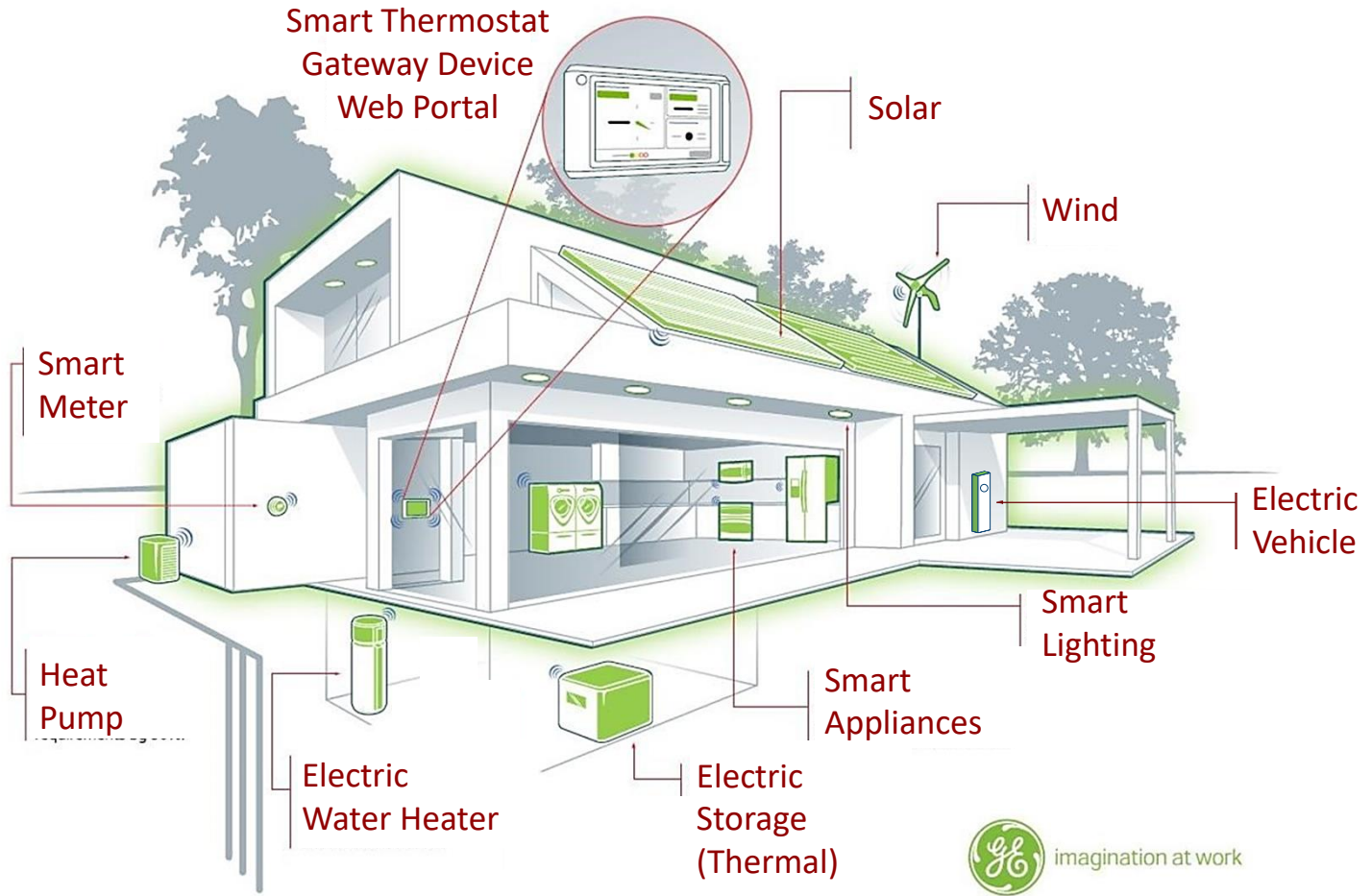
Residential Community



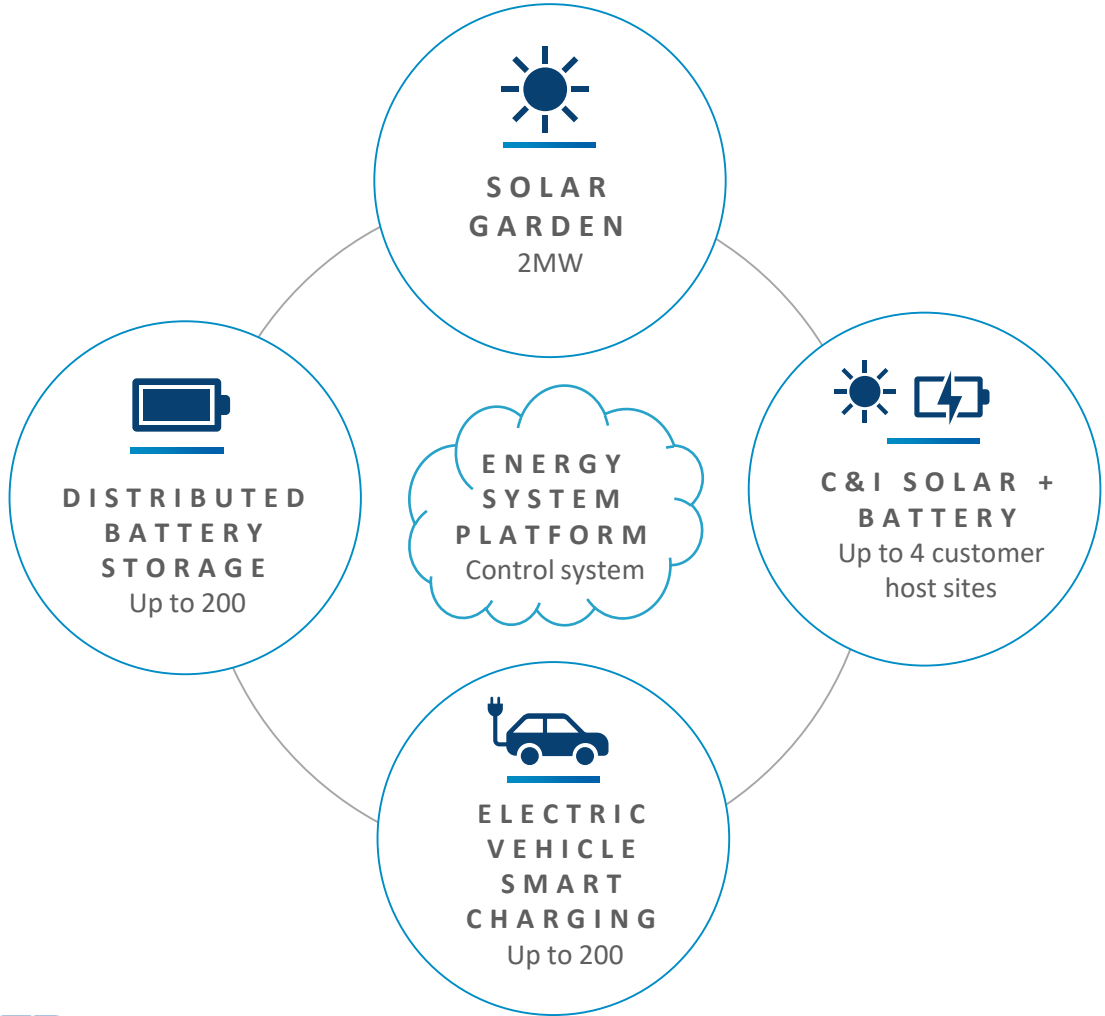
10 x Tesla Powerwall 2s

DERS IN A SMART GRID

OPPORTUNITIES FOR BENEFIT FOR ALL CUSTOMERS



SMART GRID NOVA SCOTIA PROJECT



PARTNERSHIPS

Funding Partners

- Natural Resources Canada
- Innovation, Science and Economic Development Canada
- Province of Nova Scotia

Implementation Partnerships & Support

- Siemens Canada
- NB Power
- The Town of Amherst
- Nova Scotia Community College
- Efficiency Nova Scotia
- Clean Foundation

THE ESP AND SMART GRID ATLANTIC

Smart Grid Atlantic: Two cloud-based platforms developed and deployed for distributed energy resources (DERs) in multiple communities within two utilities

SIEMENS
Ingenuity for life



Energy System Platform

Shediac, Amherst and Individual Nova Scotia Customers Connect, optimize and monetize customer assets in two provinces, including:

- Residential solar, storage, thermostats
- EV smart charging
- Building automation systems
- Commercial solar and storage
- Community solar and virtual net metering

Microgrid Controller Platform

First Nations Community

- Community resiliency for First Nations
- Microgrid connects to community solar, utility-scale storage, health centre/fire/police + commercial buildings

Greater Moncton Smart Energy Development

- Residential development of the future
- Home storage, solar and EV charging
- Home-to-home energy trading and cybersecurity

