

# Enabling Tomorrow's Electricity System

Report of the Ontario Smart Grid Forum

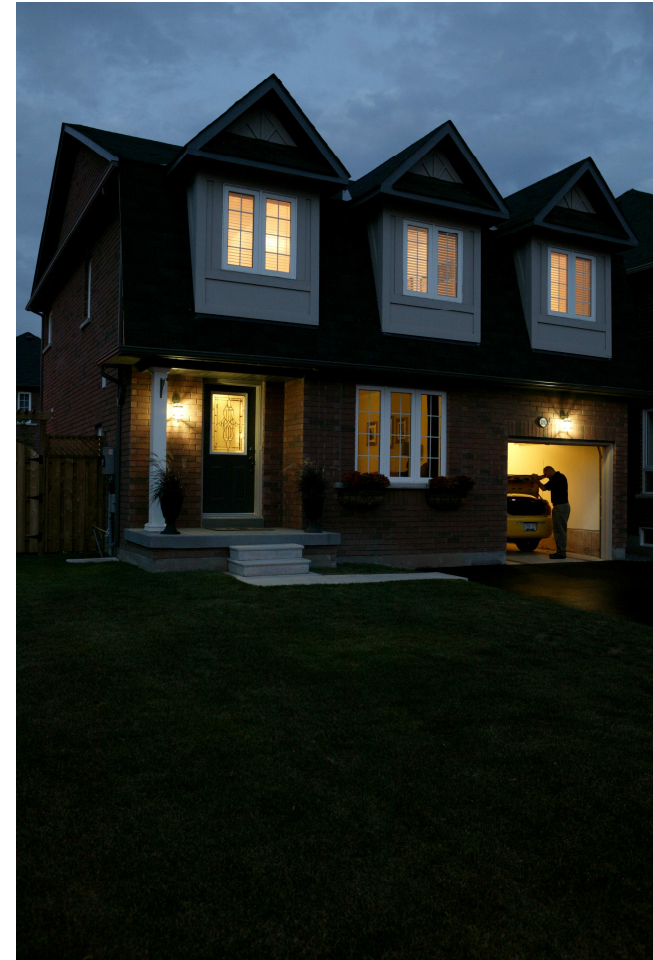


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## Smart Grid Benefits

- Modernizing the electricity system to serve the digital age:
  - Better integration of renewables and distribution generation
  - More efficient use of energy infrastructure and reduced energy losses
  - Empowered consumers with increased participation in conservation and demand response
  - More reliable distribution service with reduced outages and quicker response times

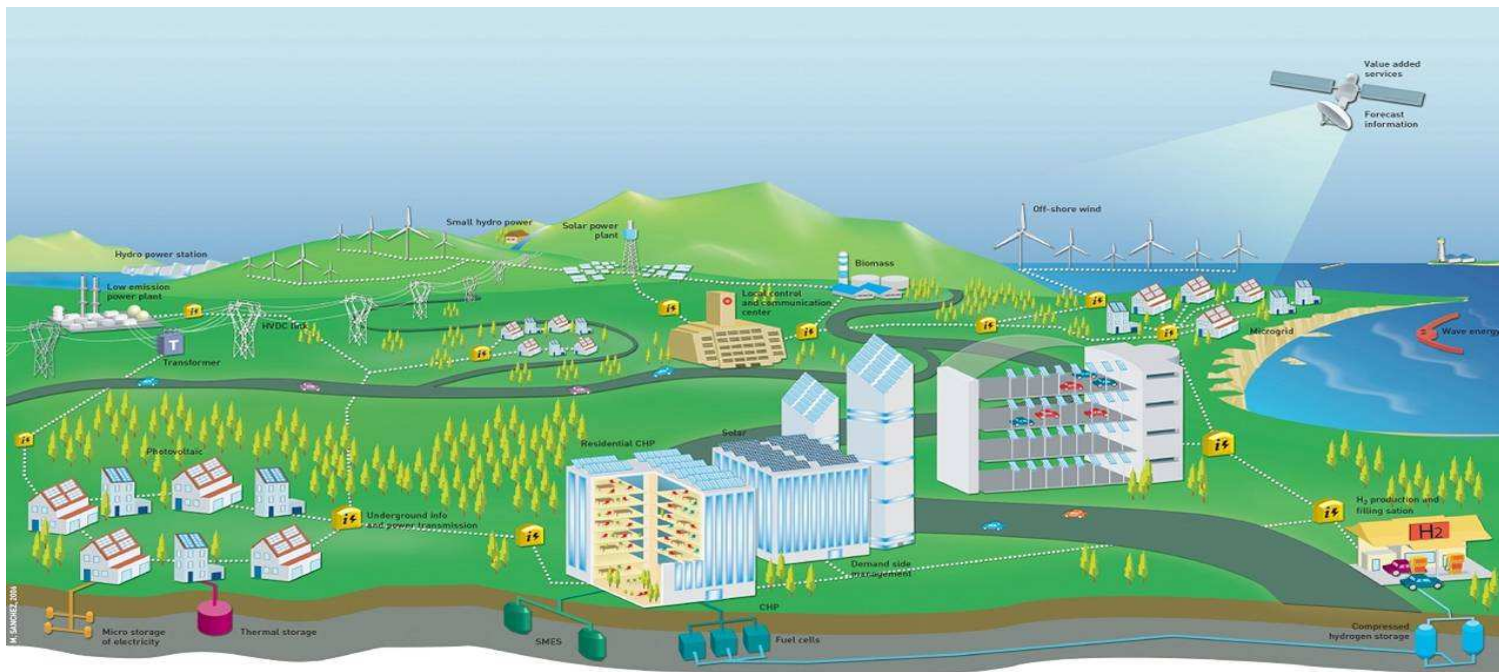


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# What is a Smart Grid?

- Smart grids comprise sensors, monitors and information technology – bringing together all elements of the electricity system
- They include distributed generation, accommodate electric vehicles and provide greater consumer choice



- Ontario is well-positioned to move forward on a smart grid
  - Smart meter deployment reaching critical mass
  - Established research capabilities in advanced technologies
  - Transmission and distribution investments needed
  - Wholesale electricity market providing price signals to drive consumption and production decisions

- Industry leaders brought together to develop a vision for the development of a smart grid vision for the province
- Vision designed to guide:
  - a co-ordinated approach across the sector
  - the mitigation of technology risks
  - the development of capital investment plans
  - a supportive regulatory framework

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## Forum Members

- Paul Murphy, IESO President and CEO
- Michael Angemeer, President and CEO, Veridian Corporation
- David Collie, President and CEO, Burlington Hydro
- Norm Fraser, COO, Hydro Ottawa
- Anthony Haines, President, Toronto Hydro Electric System
- David McFadden, Chair, Ontario Centres of Excellence
- Keith Major, SVP - Property Management, Bentall LP
- Jatin Nathwani, Professor/Executive Director, Waterloo Institute of Sustainable Energy, University of Waterloo
- Paul Shervill, VP – Conservation and Sector Development, OPA
- Wayne Smith, VP – Grid Operations, HydroOne

- The Ministry of Energy and Infrastructure should facilitate the development of Ontario's smart grid, by:
  - Clarifying authorities
  - Establishing requirements
  - Creating incentives



- Distributors, transmitters, the OEB, OPA and the IESO should work together to:
  - Develop requirements for the monitoring of distributed generation, energy storage and responsive load
  - Determine authority to direct operations of these facilities
  - Propose pricing arrangements for these facilities to support reliability that are also consistent with the market
  - Co-ordinate the development and implementation of grid controls

- The Ministry of Economic Development should establish a Task Force to develop a comprehensive plan to enable electric cars in Ontario
  - Address the policy, financial and electricity system impacts of substantial electric vehicle penetration in the province

- The Ontario Centres of Excellence should develop a Task Force to produce a framework for smart grid research in Ontario that would include funding targets and mechanisms

- Co-ordination will be key to the successful development of a smart grid for Ontario, to:
  - Ensure technology standards and interoperability
  - Co-ordinate development across all components of the system
  - Establish linkages with other industries (i.e. automakers)
- Maintain the momentum; champion the cause