

Measuring Smart Grid Success

OEA Smart Grid Corporate Partners Committee
Presentation to the Ontario Smart Grid Forum, August 10, 2010

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1. Customer Control

- Smart meter penetration
- Customers, load on TOU
- Evidence of shifted load – peak load reduction, base load reduction
- Customer participation in DSM (and attrition rate)
- Customer awareness of Smart Grid and views of its value (survey-based research)

2. Utility Flexibility

- DSM program participation, by number and by total load
- Outages, by duration and numbers affected
- Improvement of load factor, both t&d
- VAR control and voltage regulations
- Proportion of green power that is exported
- Proportion of green energy that displaces fossil-fuel energy
- Cost and time to connect smaller DG (less than 1 MW)
- Evidence that cost of MW saved less than cost of MW generated and distributed

3. Adaptive Infrastructure

- Electric vehicles:
 - number on the road
 - number of charge spots installed that can be managed and controlled remotely
 - amount of ancillary services cost-effectively provided to the grid
- Number of other services and applications via smart grid (e.g., use of smart grid to relay information from the home on HVAC equipment functionality/status to the HVAC vendor)

3. Adaptive Infrastructure (Cont'd.)

- Some measure of smart grid contribution to GHG reduction (e.g., information on carbon intensity at the customer level)
- Some measure of "exportability" of smart grid expertise (e.g., new patents related to smart grid enabled products and services; export sales)

4. Economic Development

- New products and services as a result of AMI
- Number of new industry suppliers and participants
- Revenue from goods and service
- Jobs created