

Smart Grid Consumers – International Approaches to Adoption and Support

Smart Grid in Canada:
A National Perspective

British Columbia

- BC Hydro to install 1.8 million smart meters in the next two years at a cost of \$930 million
- Provincially mandated to be completed by 2012
- AMI back-end, in-home displays, time-based rates, theft detection



Alberta

- Fortis Alberta has installed 466,000 meters, with another 100,000 remaining. Inclusion of TOU functionality is still uncertain.
- Alberta Utilities Commission is facilitating extensive consultations on the benefit of the Smart Grid



Quebec

- Pilot programs have been underway in four cities since 2008, under the “Time-it-right” program
- TOU and TOU+ : TOU+ includes a “critical peak” price of 18.19 ¢/kWh, compared to off-peak price of 3.6 – 5.63 ¢/kWh, and 6.15 to 8.19 ¢/kWh on-peak



Changing Provincial Mandates

- The traditional mandate was:
 - Economic efficiency
 - Cost effectiveness
 - Consumer protection
- The new mandate has come to include:
 - Conservation
 - Renewable energy integration
 - Technological innovation
- In short, utilities and their regulators are being seen as agents of change that will carry out political priorities

Ontario's Mandate

Ontario Energy Board Act, 1998, Consolidated as of December 14, 2009

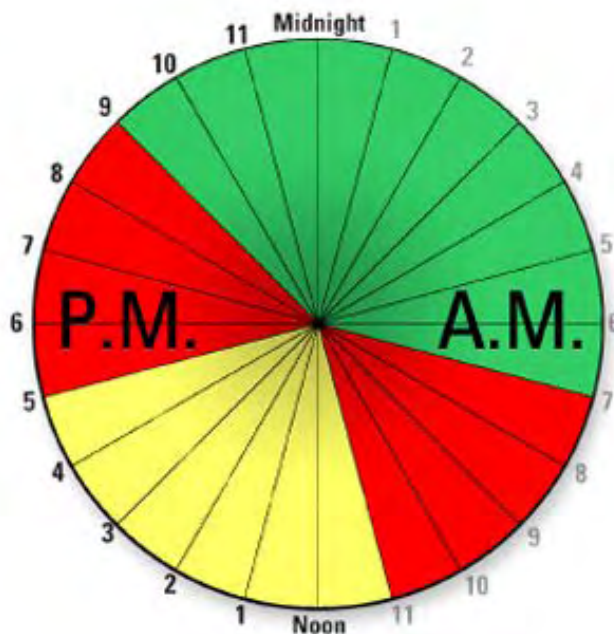
The Board, in carrying out its responsibilities under this or any other Act in relation to electricity, shall be guided by the following objectives:

- 1. To protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service.
- 2. To promote economic efficiency and cost effectiveness in the generation, transmission, distribution, sale and demand management of electricity and to facilitate the maintenance of a financially viable electricity industry.
- 3. To **promote electricity conservation and demand management** in a manner consistent with the policies of the Government of Ontario, including having regard to the consumer's economic circumstances.
- 4. To **facilitate the implementation of a smart grid** in Ontario.
- 5. To **promote the use and generation of electricity from renewable energy sources** in a manner consistent with the policies of the Government of Ontario, including the timely expansion or reinforcement of transmission systems and distribution systems to accommodate the connection of renewable energy generation facilities. 2004, c. 23, Sched. B, s. 1; 2009, c. 12, Sched. D, s. 1.

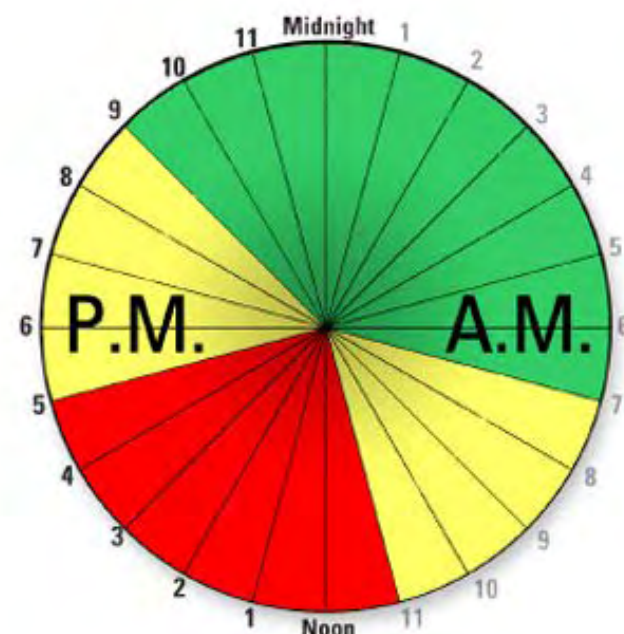
1.2 Million Customer Pilot

- All homes and small businesses will be equipped with a smart meter by end of year
- Most will be on time-of-use rates by June, 2011
- 5.3¢ / kWh Off-Peak
- 8.0¢ Mid-Peak
- 9.3¢ On-Peak

Winter (Nov 1-Apr 30) - Weekdays



Summer (May 1-Oct 31) - Weekdays



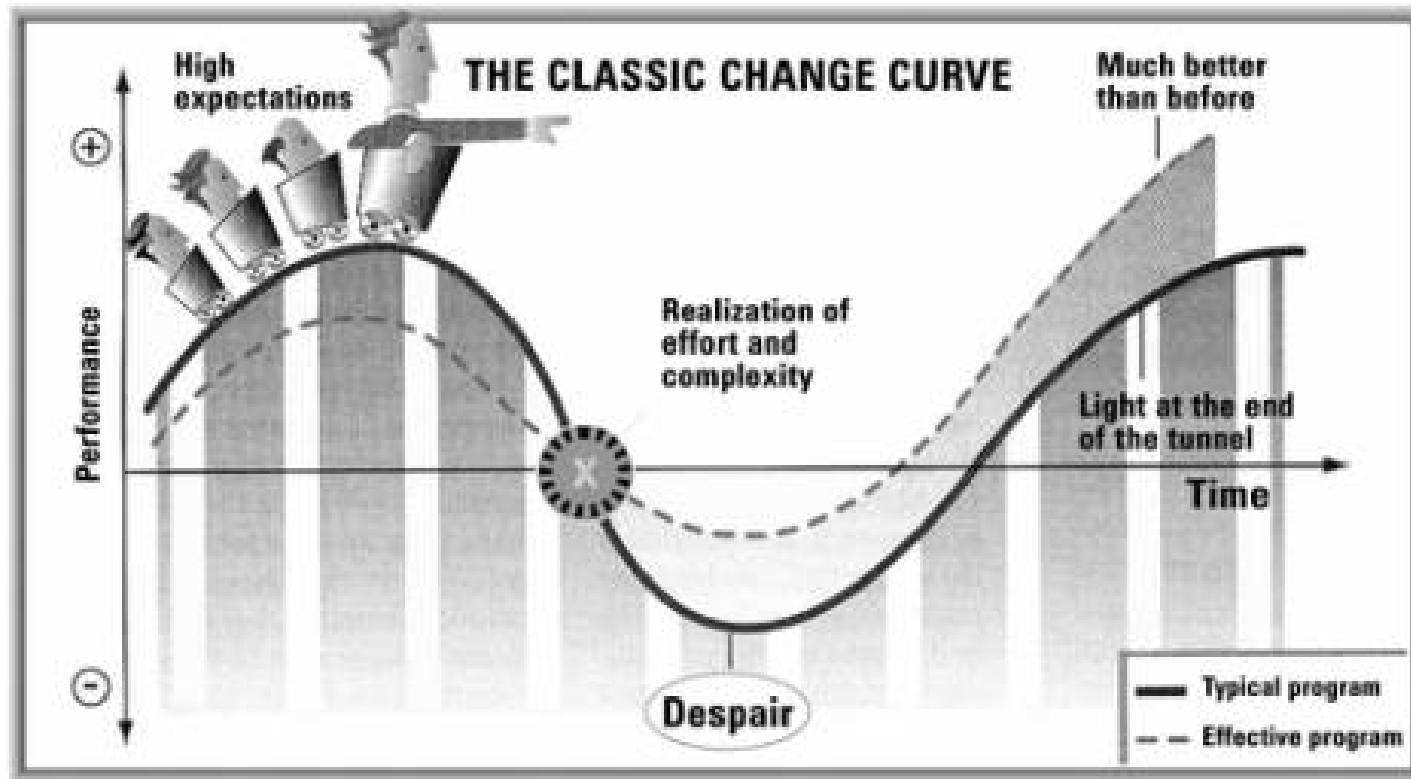
Mixed Reviews

- Lawrence Solomon: Are You Frying Your Eggs at 4 a.m. yet?
 - Financial Post, Sept. 17, 2010
- Ontario Hydro's Smart Meters Give Dumb Results: Critics
 - The Globe and Mail, Sept. 14, 2010
- Who's looking out for the senior citizen who is being lectured by Dalton McGuinty to do her laundry at two in the morning? Who's looking out for the family with multiple kids who's being told by Dalton McGuinty to get them showered and ready for school at five or six in the morning?
 - Progressive Conservative Leader Tim Hudak, Sept 14, 2010

What Gives?

- Policy-makers pitched smart meters as a way to help the environment through reduced consumption while being financially rewarded for their efforts
- Vendors assured policy makers that access to information and price incentives was enough to drive customer behaviour
- Regulatory authorities did not connect
 - Measurement Canada, a federal agency, warned in a letter to the IESO and the Ontario energy ministry that utilities who issue billing invoices “which establish supplied electricity quantities on the basis of interval data and not on the basis of meter registration (start and finish meter reads) will be considered in contravention of the requirements of the Electricity and Gas Inspection Act.”
- As with PG&E, the utilities could have done more to prepare customers
- Outside forces: regardless of AMI, electricity prices were going up
- It is now obvious that “change management” is everything; policy-makers, regulators, vendors and utilities must work together closely to enable this

Onward and Upward



Thank You!

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