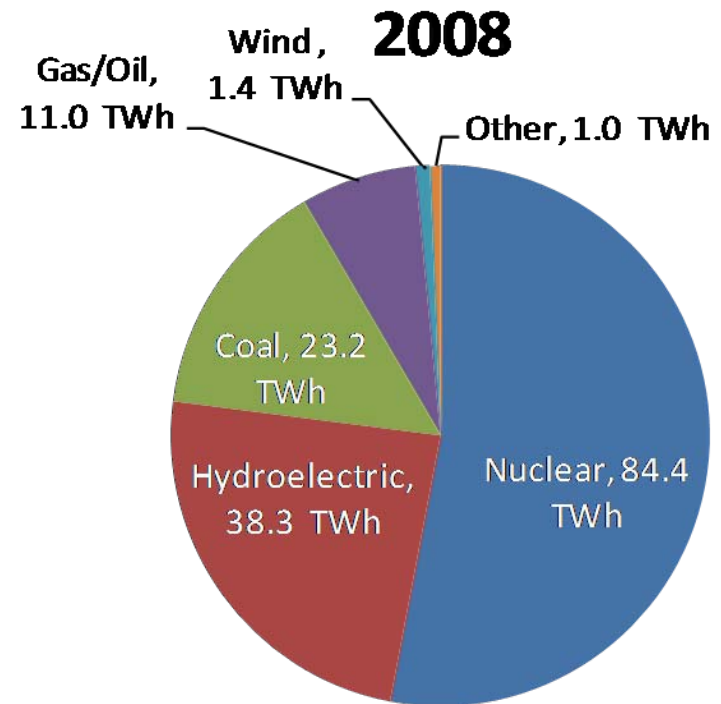
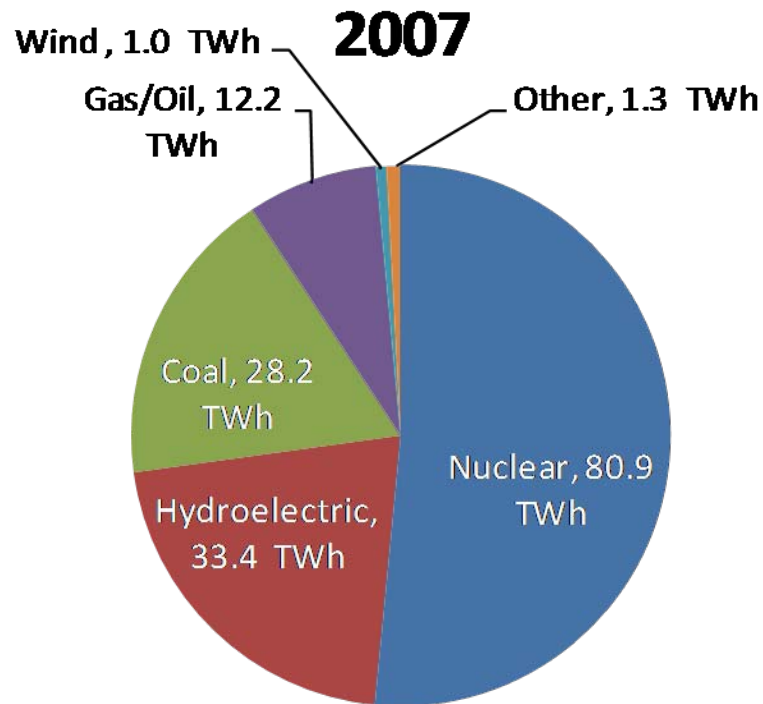


2009 Q1 Report on Operations to Stakeholder Advisory Committee

Ken Kozlik, IESO COO
February 04, 2009



- Supply:
 - Record year for hydroelectric production – 38 TWh (~ 5 TWh increase over 2007)
 - Record year for wind production – 1.4 TWh, and more to come!
 - Increased nuclear production
 - Decreased coal production – lowest since 1996
 - >500 generation contingencies; 24 trips > 500 MW
 - New generation incorporated
 - 1,600 MW gas fired
 - 76 MW wind
 - 13 MW hydroelectric



- Demand:
 - Annual energy demand down (148 TWh)
 - Cool, wet Summer – peak occurs in early June (24,195 MW, June 9)
 - Economic impacts seen in latter half of year
- Imports/Exports
 - Record annual exports
 - High annual imports
 - Very high linked wheeling activity in first 6 months

- **Outage Management**

- 16,700 outage plans reviewed

- 124 denied due to reliability concerns
 - 21 revoked due to reliability concerns
 - 4 recalled due to reliability concerns

- **Significant Operating Events**

- Jan 30 – Niagara tie contingency
 - Feb 4 – Inadvertent parallel with Quebec
 - Feb 5 – Ottawa flash-over weather conditions
 - Feb 6 – IESO loss of SCADA
 - Apr 6 – Pickering Energizing Event
 - Aug 5 – Flooding in Burlington
 - Oct 6 – Southwest Power Oscillations
 - Nov/Dec – Niagara Tie Outages
 - Dec 28 – Extreme wind conditions in Ontario

Season	Normal Weather Peak (MW)	Extreme Weather Peak (MW)
Winter 2008-09	23,813	24,825
Summer 2009	24,972	27,038
Winter 2009-10	22,829	23,904

- **Winter Peak to date: 22,983 MW – Jan 15, hour 19**
- **Weather corrected energy demand**
 - 2006: 152.3 TWh (decrease 1.7%)
 - 2007: 151.6 TWh (decrease 0.5%)
 - 2008: 149.5 TWh (decrease 1.4%)
 - 2009: 147.5 TWh (decrease 1.3%)
 - 2010: 143.6 TWh (decrease 2.6%)

- New supply expected
 - 380 MW wind
 - 2040 MW gas-fired
 - 147 MW cogeneration
 - 79 MW hydroelectric
- Two major regulatory Nuclear station outages
- OPG Coal Reduction Strategy

- Incorporation of new DC connection with Hydro-Quebec
- Additional outages on Niagara interface
- Commissioning of fourth Phase Angle Regulator on Michigan Interface
- Exports expected to decline (6.7 TWh forecast in IESO fee submission)
- GTA reliability continues to improve with Goreway and second phase of Portlands (both commissioning)
- Outage complexity for incorporating new facilities continues

- **Ontario Reliability Outlook**

- Reliance on gas-fired generation
- Coal reduction/retirement
- Nuclear refurbishment/replacement
- Increase in renewables and distributed generation
- Transmission enhancements – Bruce x Milton; incorporation of Darlington B; enabler investments

- **Far greater uncertainty for system operations**

- More and more decentralized decisions
- Smarter grid; smarter meters; smarter consumers
- Must get better at managing surplus baseload
- Must change to cope with uncertainties – new technologies; new processes.