

The Management of Minimum Load Conditions - Considerations

August 11, 2009



- Comments Received
- Objective
- OPA Contracts
- IESO Considerations
- Next Steps

- Issues/Concerns
 - Many issues and concerns received were brought up in previous meetings
 - Hydro Generators:
 - Safety – clearing spillways creates delays (especially if at night)
 - Environmental – damage to fisheries and spawning beds, shoreline erosion
 - Regulatory – restricted flow changes based on regulatory bodies (including neighbouring jurisdictions)

- Issues/Concerns:
 - Nuclear Generators:
 - Reactor power change limitations (time delays)
 - Lengthy minimum downtime periods (potentially impacting reliability, market efficiency, increased emissions from replacement generation)
 - Thermal cycling places stresses on plant components
 - Condenser steam discharge valve (CSDV) thermal limitations through ministry of environment
 - Manoeuvring procedure is very time consuming with planning and execution
 - Wear and tear on equipment
 - Preference for single, large manoeuvres

- Recommendations/Suggestions

- Request the OPA to amend current contracting practices and/or amend existing contracts and retain environmental attributes
- Cut non-firm energy
- Limit imports
- Work with government entities to restructure contracts so fossil units are dispatched based on marginal cost of production
- Relax export barriers (scheduling window, calculation of congestion penalties, ramping, loop flow calculation)
- Grandfather all existing renewable resources to have dispatch priority over new generation with government contracts
- Work with OPG to phase out coal

- Recommendations/Suggestions
 - Use average for periods of low demand
 - Eliminate Intertie Offer Guarantees (IOG) during periods of low demand
 - Look to implement changes to non-dispatchable generator (i.e. NUGs) contracts to utilize incremental costs
 - Curtail off wind before hydro and nuclear and provide compensation for this curtailment
 - Define SBG period
 - SBG control actions list that outlines action the IESO can take
 - Longer term SBG forecast to assist in long-range outage planning
 - Coordinated scheduling of transmission and generation outages

To mitigate the gross inefficiencies in the market due to the current design.

- Focus on three criteria:
 - Operational Complexity
 - Impacts to the Environment
 - Allocative Efficiencies
- Example: complex actions for many hours to resolve a short term event

- New FIT contracts have additional contract payments for generators who come offline during periods of low demand/pricing periods
- Example:



100 MW capacity
60 MW actual

Contract Specifies that PD MCP must be $< \$5$

PD price: $-\$30$, RT price: $-\$28$

Wind offers $\$0$, IESO dispatches to 0MW

If the generator runs, they get paid $(\$135 - \$28) \times 60\text{MW}$

If the generator does not run, they get paid $\$135 \times 60\text{MW}$

- Evolve for other contracts (including Transitional Scheduling Generators (i.e. NUGs), Self-Scheduling Generators, etc.

- Use average demand forecast during periods of low demand
- Delay commissioning units during periods of low demand (only if it does not impact long-term reliability concerns)
- Deny unit synchronization associated with real-time and day-ahead guarantees during periods of low demand

- Meet with OPA - contracts
- Meet with Government – policy considerations
- Procedure/manual/market rule changes