

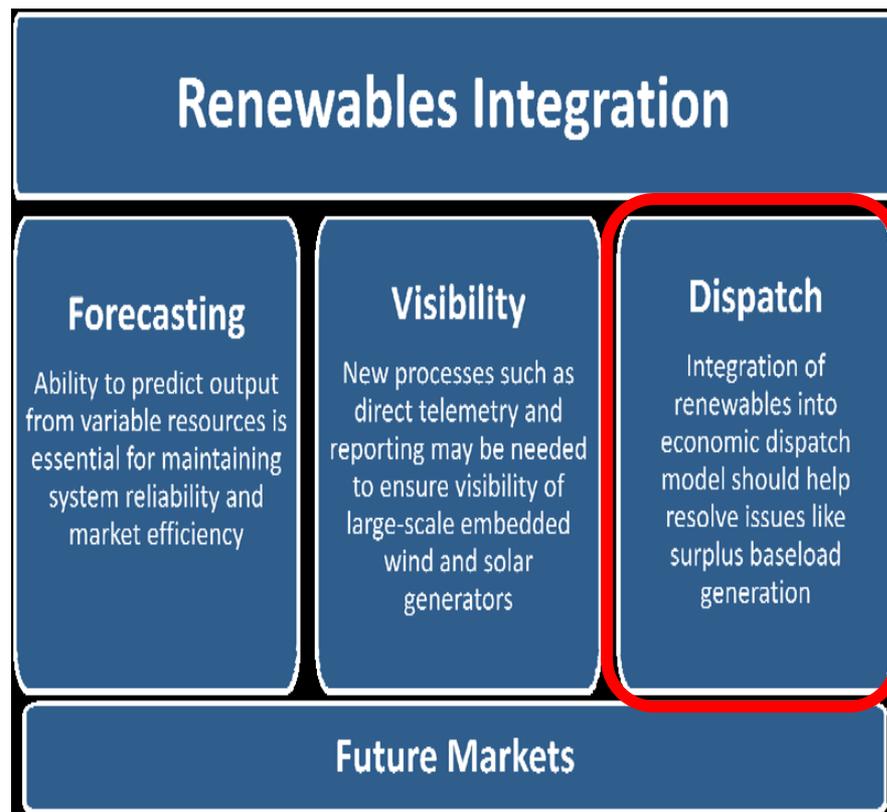
Update: Floor Price Focus Group

SE-91 Renewable Integration Initiative
May 03, 2012



Principle 10:

“The IESO may establish various floor prices for offers from baseload generators, i.e. Wind, must-run hydro and nuclear, to ensure efficient dispatches during periods of local and/or global surplus baseload generation (SBG) events.”



- Review Action Items from January 24th meeting
- Finalize stakeholder submissions and IESO responses on the “*Dispatch Order for Baseload Generation*” discussion paper
- Overview of FIT 2.0 and impact on Floor Price Focus Group
- Nuclear Flexibility and Floor Price Focus Group
- Floor Price Options
- Identify next steps

#	Date	Action	Comments
5	Jan 24, 2012	IESO to provide link to report from Ontario Society of Professional Engineers (OSPE).	The link was provided in the meeting minutes.
6	Jan 24, 2012	IESO to include Enbridge's comments and IESO responses in the next version of the spreadsheet summarizing stakeholder comments	Spreadsheet has been updated. Discussed today.
7	Jan 24, 2012	IESO to investigate making public further information on analysis that quantifies the estimated savings of dispatching wind/solar, SBG and Ramp analysis to the extent possible (cost information on options, TWh of curtailment, physical impacts behind the study, net export information, how much curtailment is expected on a gross aggregated basis).	Discussed today.

- **Action Item 7: IESO to investigate making public further information on analysis**
 - Replacement energy for nuclear shutdown/manoeuvre was gas/imports with associated emissions at \$40/MWh
 - CO₂ emissions rate of 0.4t/MWh
 - Nuclear amounts curtailed/shutdown are paid contract rate
 - Wind/solar curtailed are paid contract rate

- **Analysis used for the year 2014:**
 - Current method of managing surplus baseload generation was estimated to result in the over- curtailment of nuclear units by between 6.5-8.0 TWh
 - Incorporating wind/solar in 5-minute economic dispatch was estimated to result in reducing the over- curtailments to between 2.0-3.5 TWh

- The IESO met with stakeholders to further clarify their submissions between January 25th and March 30th
- We have now incorporated all feedback and finalized our responses, which can be found here: http://www.ieso.ca/imoweb/pubs/consult/se91/se91-20120503-FPFG_Submission_Responses.pdf
- Are there any follow-up questions?

- The Ministry Of Energy released its mandatory two year review of the Feed-in Tariff program on March 22, 2012
 - Report Available Here: <http://www.energy.gov.on.ca/docs/en/FIT-Review-Report.pdf>
- Highlights:
 - Ontario is committed to the 10, 700MW target
 - Reduction in pricing for new wind and solar projects
 - Increased community & aboriginal participation, and municipal engagement
 - Existing FIT contract holders are not subject to new rules
 - At the end of 2013, the government is expected to review whether a higher renewable capacity target is warranted

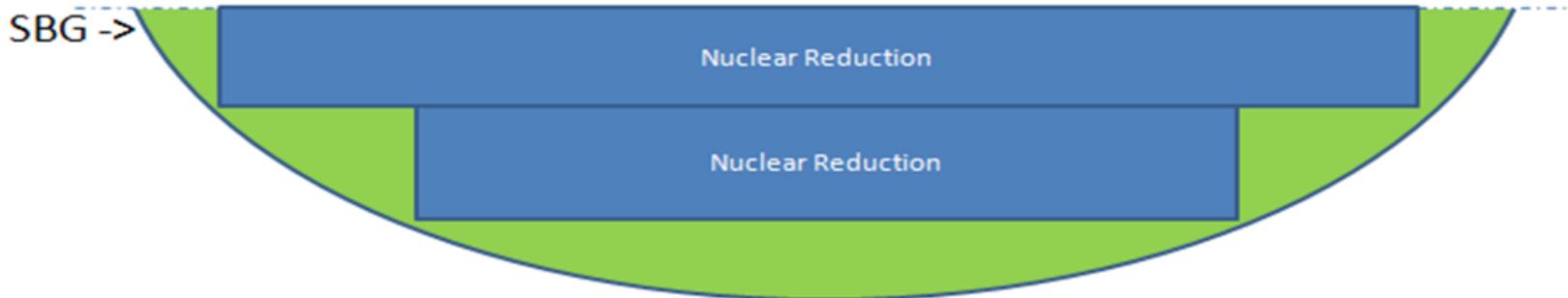
- There were no explicit recommendations on items that would affect the SE-91 Renewable Integration Initiative
- The OPA has published draft Program Rules and contracts to implement the recommendations

<http://fit.powerauthority.on.ca/comments-welcome-draft-fit-program-rules-and-contract>

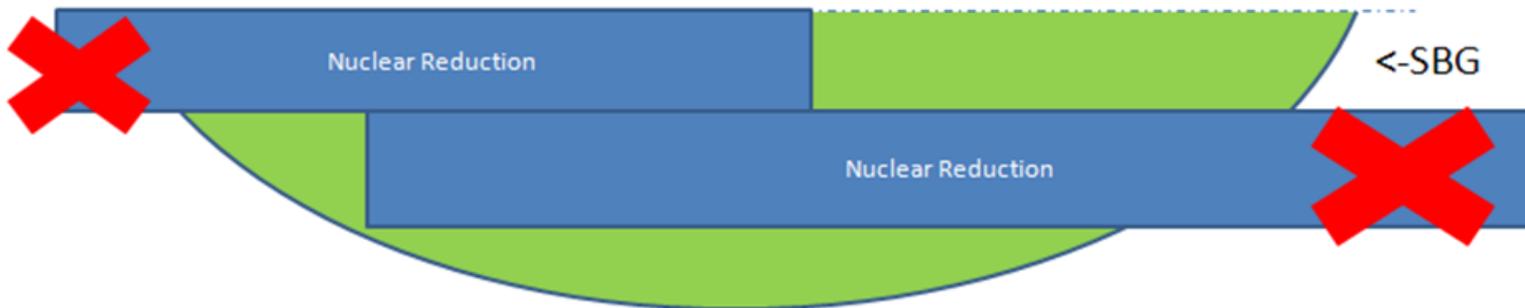
- Bruce Power recently announced that they now have increased capability to manoeuvre their nuclear units
 - Up to a combined 2,300-2,400 MW when all Bruce A and B units are in operation (~300MW each)
- This capability can be used in addressing surplus baseload generation conditions

Nuclear Flexibility and FPFG contd.

Economic Dispatch Outcome



Inefficient Dispatch Outcome



 Economic Dispatch (including wind and solar)

- Conceptual Design:
 - Make an assessment of surplus conditions and commit nuclear dispatch based on forecasted needs in pre-dispatch
 - Other resources (including wind and solar resources) will fill in the remaining differences between the intervals based on 5-minute economic dispatch
 - This is expected to continue to meet the technical limitations of all resource types and reduce costs to the extent that is practical by minimizing over-curtailment during SBG conditions

- Multi-Technology Floor Prices
 - Establish floor price(s) for nuclear, hydroelectric, wind and solar generation
- Floor Prices for Renewable Generators:
 - Establish floor price(s) for wind and solar generation

- Develop and present IESO-preferred floor price model
- Next meeting tentatively scheduled for June

- In November 2011, the IESO committed to coordinate the conclusions of both the Dispatch Technical Working Group and Floor Price Focus Group prior to requesting IESO Board approval on both rule sets.
- To provide greater clarity to stakeholders, the IESO will provide further detail around the upcoming market rule development process and timelines.

- Next set of proposed market rule changes will cover:
 - Centralized forecasting: publication requirements
 - Centralized forecasting integration: additional amendments to implement the forecast into IESO operations/tools
 - Rules resulting from the Dispatch Technical Working Group (DTWG), including dispatch mechanics, compliance deadbands, CMSC
 - Rules resulting from the Floor Price Focus Group (FPFG)

May 15th Technical Panel (TP):

- (i) high level presentation to TP focusing on dispatch design (summary of DTWG, FPPG), integration of centralized forecasting;
- (ii) presentation of the high level amendment submission, TP to determine whether the amendment submission warrants consideration

June 13th TP:

- Earliest date for review of any amendment proposals (i.e. first draft of redlined rules) related to centralized forecasting publication and integration, any finalized concepts from DTWG

July 17th and Aug 21st TP:

- Subsequent/initial reviews of any amendment proposals

Sept 7th IESO Board:

- Earliest date for Board approval for centralized forecasting: publication/integration
- Effective date of rules in Q4 of 2012

Sept 18th, October 16th, Nov 20th TP:

- Subsequent/initial reviews of any amendment proposals

Nov 29th IESO Board:

- Earliest date for amendments relating to dispatch (DTWG/FPFG)
- Effective date of rules in Q4 of 2013

Questions?