



APPRO

ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Addressing Ramp Rate Issues in Ontario

Presentation to the IESO Stakeholder
Advisory Committee

March 22, 2006



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Background

- High price volatility was observed during pre-market opening tests – this threatened market opening
- To allow market opening, generators agreed to a temporary measure to make generation unit ramp rates appear twelve times greater than physical reality
- This tends to eliminate the price volatility needed to make the market work properly
- This solution was approved by the IESO Board until a more efficient long-term solution would be found

è Since that time, there has been much talk of change but none has been made.

Background

- Since 2003, the Market Surveillance Panel has repeatedly commented on the use of a 12x ramp rate multiplier
- In 2004 APPrO noted that real-time pricing and dispatch issues must be effectively addressed either prior to or coincident with the development of a DAM
- In 2005 during the development of the IESO's Day Ahead Commitment Process, generators repeatedly noted that reliability would be improved by addressing the outstanding pricing issues
- Consequently, at the first Stakeholder Advisory Committee generators said they would support DACP only if the IESO addressed pricing issues



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Background

- Dec. 7 IESO Board resolution regarding Day Ahead Commitment Process included the following:

“...the Board recognizes the need to give focussed attention to resuming and advancing work with stakeholders on the Day-Ahead Market, the appropriate ramp rate multiplier, if any, to be employed in the market schedule...to the extent feasible without jeopardizing the June 1 DACP inservice date, this work should proceed in parallel with the implementation of the DACP.”

The problem with 12x

- **Arbitrary**
 - the 12x was an arbitrary value with no relation to anything other than the desire to reduce feared volatility
- **Inefficient**
 - ramping is a valuable service, and the current solution does not reward it at all
- **Overuse**
 - because the current solution does not impose any costs for ramping on the IESO, while ramping does impose maintenance and emissions costs on generators, the IESO overuses it



APPRO's Position on 12x

- The 'correct' solution to the 12x ramp rate multiplier is to revert to the original 1x design
- It is consistent with the principle of market design that price should be based on the system marginal cost
 - It signals consumers properly with the cost that they are imposing on the system
 - It signals producers properly with the value of their contribution to the system
- It is consistent with the design of all neighbouring markets
- It is consistent with the government policy ("ratepayers pay the true cost of the electricity they consume")



APPRO's Position on 12x

- Concerns have been expressed that unacceptable increases in volatility and prices would result from reversion to 1x
 - APPRO believes that much of the increase would be mitigated by the amount of generation with prices that are set by contract or regulation, not in the market
- Most stakeholders recognize the need for some change to the 12x ramp rate
 - APPRO's position is that 12x be replaced by 1x ramp rate
 - AMPCO suggested changing the basis of the payment to the constrained-on generators so that all receive the bid price of the last ramping generator to be dispatched
 - The IESO proposed extending its Multi Interval Optimization (MIO) approach from scheduling to pricing
- If reversion to a 1x ramp rate is unachievable, APPRO proposes the introduction of a subsidiary payment for ramping
 - APPRO has retained Navigant Consulting, an internationally recognized expert in energy markets, to develop this proposal



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Alternative to 1x ramp rate

- APPrO has considered a ramping payment mechanism
- The mechanism would compensate every generator and dispatchable load that provided ramp to the IESO
- The mechanism should be:
 - Simple, transparent and fair
 - Cost based
 - A fixed \$ amount per MW of output change, up or down
 - Paid on the amount of the output change instructed and then delivered
 - Recovered through an increase in uplift paid by all consumers

Ramping Payment

The payment should be set to:

- Fully compensate owners for the additional wear and tear of ramping their units
- Incentivise the retention of existing capability and the installation of new capacity as required
- Show the true cost to the market of ramping units and encourage further optimisation of the dispatch processes



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Ramping Payment

- It is anticipated that:
 - the scheme can be implemented cheaply and without any changes to the main IESO dispatch algorithm
 - the scheme is consistent with neighbouring markets, demand response programs and existing OPA contracts etc.
 - It will increase the total cost of the wholesale electricity market by no more than 0.6%

Conclusion

- Stakeholders recognize the need for change
- APPrO's position is that there are only two rational options for resolution of the issue
 - Change the ramp rate multiplier back to unity, i.e. 1x myopic
 - Additional compensation for Ramping Units, i.e. a subsidiary ramping payment mechanism as described earlier
- If it is decided to narrow the focus to deal with ramping as an ancillary service, this stresses the urgency of dealing with the issue of imports being able to set prices in the market schedule



APPRO

ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Addressing Ramp Rate Issues in Ontario

Presentation to the IESO Stakeholder
Advisory Committee

March 22, 2006



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Background

- High price volatility was observed during pre-market opening tests – this threatened market opening
- To allow market opening, generators agreed to a temporary measure to make generation unit ramp rates appear twelve times greater than physical reality
- This tends to eliminate the price volatility needed to make the market work properly
- This solution was approved by the IESO Board until a more efficient long-term solution would be found

è Since that time, there has been much talk of change but none has been made.

Background

- Since 2003, the Market Surveillance Panel has repeatedly commented on the use of a 12x ramp rate multiplier
- In 2004 APPrO noted that real-time pricing and dispatch issues must be effectively addressed either prior to or coincident with the development of a DAM
- In 2005 during the development of the IESO's Day Ahead Commitment Process, generators repeatedly noted that reliability would be improved by addressing the outstanding pricing issues
- Consequently, at the first Stakeholder Advisory Committee generators said they would support DACP only if the IESO addressed pricing issues

Background

- Dec. 7 IESO Board resolution regarding Day Ahead Commitment Process included the following:

“...the Board recognizes the need to give focussed attention to resuming and advancing work with stakeholders on the Day-Ahead Market, the appropriate ramp rate multiplier, if any, to be employed in the market schedule...to the extent feasible without jeopardizing the June 1 DACP inservice date, this work should proceed in parallel with the implementation of the DACP.”

The problem with 12x

- **Arbitrary**
 - the 12x was an arbitrary value with no relation to anything other than the desire to reduce feared volatility
- **Inefficient**
 - ramping is a valuable service, and the current solution does not reward it at all
- **Overuse**
 - because the current solution does not impose any costs for ramping on the IESO, while ramping does impose maintenance and emissions costs on generators, the IESO overuses it

APPRO's Position on 12x

- The 'correct' solution to the 12x ramp rate multiplier is to revert to the original 1x design
- It is consistent with the principle of market design that price should be based on the system marginal cost
 - It signals consumers properly with the cost that they are imposing on the system
 - It signals producers properly with the value of their contribution to the system
- It is consistent with the design of all neighbouring markets
- It is consistent with the government policy ("ratepayers pay the true cost of the electricity they consume")

APPRO's Position on 12x

- Concerns have been expressed that unacceptable increases in volatility and prices would result from reversion to 1x
 - APPRO believes that much of the increase would be mitigated by the amount of generation with prices that are set by contract or regulation, not in the market
- Most stakeholders recognize the need for some change to the 12x ramp rate
 - APPRO's position is that 12x be replaced by 1x ramp rate
 - AMPCO suggested changing the basis of the payment to the constrained-on generators so that all receive the bid price of the last ramping generator to be dispatched
 - The IESO proposed extending its Multi Interval Optimization (MIO) approach from scheduling to pricing
- If reversion to a 1x ramp rate is unachievable, APPRO proposes the introduction of a subsidiary payment for ramping
 - APPRO has retained Navigant Consulting, an internationally recognized expert in energy markets, to develop this proposal



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Alternative to 1x ramp rate

- APPrO has considered a ramping payment mechanism
- The mechanism would compensate every generator and dispatchable load that provided ramp to the IESO
- The mechanism should be:
 - Simple, transparent and fair
 - Cost based
 - A fixed \$ amount per MW of output change, up or down
 - Paid on the amount of the output change instructed and then delivered
 - Recovered through an increase in uplift paid by all consumers



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Ramping Payment

The payment should be set to:

- Fully compensate owners for the additional wear and tear of ramping their units
- Incentivise the retention of existing capability and the installation of new capacity as required
- Show the true cost to the market of ramping units and encourage further optimisation of the dispatch processes



APPRO
ASSOCIATION OF
POWER PRODUCERS
OF ONTARIO

Ramping Payment

- It is anticipated that:
 - the scheme can be implemented cheaply and without any changes to the main IESO dispatch algorithm
 - the scheme is consistent with neighbouring markets, demand response programs and existing OPA contracts etc.
 - It will increase the total cost of the wholesale electricity market by no more than 0.6%

Conclusion

- Stakeholders recognize the need for change
- APPrO's position is that there are only two rational options for resolution of the issue
 - Change the ramp rate multiplier back to unity, i.e. 1x myopic
 - Additional compensation for Ramping Units, i.e. a subsidiary ramping payment mechanism as described earlier
- If it is decided to narrow the focus to deal with ramping as an ancillary service, this stresses the urgency of dealing with the issue of imports being able to set prices in the market schedule