

# Market Pricing Options

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# Market Pricing Options

- 12X Ramp Rate (status quo)
- Some lower ramp rate with myopic solution
- Some form of MIO pricing
- AMPCO proposal to compensate ramping units

## 12X Ramp Rate

- Unconstrained algorithm uses an artificially high ramp rate when setting price
- Actual ramp rate for dispatchable facilities is multiplied by 12
- Facility can achieve a full one hour of ramp over a five minute interval

## Lower Ramp Rate - Myopic

- Adjust the ramp rate multiplier to some lower value, down to and including 1
- Continue to use a myopic solution in the unconstrained algorithm (as opposed to the constrained MIO solution)
  - No advanced movement of units to prepare for known demand changes.
  - Different than constrained algorithm where gain from trade is maximized over several intervals at once based on projected demand.

## 1X Ramp Rate – MIO

- Use the same multi interval optimization process in the unconstrained run as in the constrained run
  - Difference between the two runs is the differences based on transmission constraints
- Several choices for establishing the MIO price including simple incremental, modified incremental and high slice price

## Minimum Generation Blocks

As a secondary decision, all of the previous methods can be modified to respect all unit capabilities (unit minimums, forbidden regions, steady operation periods) for units that are required for the unconstrained dispatch

# Minimum Generation Blocks

- Currently the unconstrained algorithm does not respect unit capabilities (unit minimums, forbidden regions, steady operation periods)
- Modify the unconstrained algorithm to respect these physical limitations for units that are needed online in an unconstrained Ontario ( i.e ignore limitations for units which are on line because of transmission limitations rather than economics).

# AMPCO Proposal

- Compensate ramping units for their contribution
- See separate detailed presentation and the discussion paper submitted by AMPCO