Decision on contingency modeling enhancements proposal

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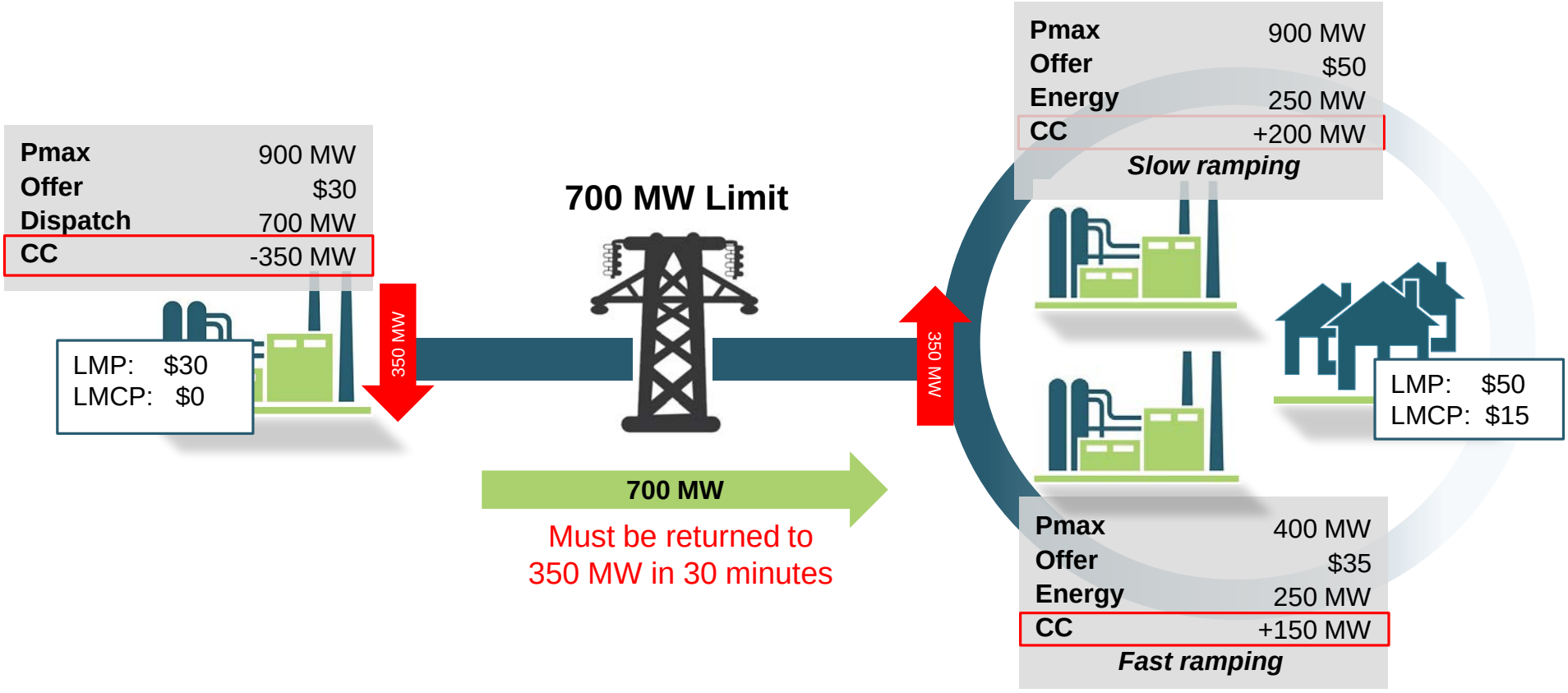
ISO must ensure transmission lines are not overloaded when a transmission line goes out.

- Market ensures flows will not immediately overload lines when a transmission line is lost but does not ensure lines can be returned to within normal operating limits within required timeframes
  - ISO uses out-of-market actions to ensure flows can be returned to within normal operating limits within required timeframes (30 minutes)
    - Minimum online constraints
    - Manual dispatches
- Current approach does not provide for efficient process to meet reliability requirements
  - No certainty on ramping capability of committed resources
  - Can result in over commitment of resources
  - Does not ensure reliability needs are met
  - Does not provide market compensation for resources providing corrective capacity

Propose to enhance the ISO's market modeling to ensure flows can be returned to normal operating limits within required timeframes.

- Enhance market model to include constraints with corrective time requirements
- Price these reliability constraints into the market
  - Pay resources the locational marginal price for energy
  - Pay resources the locational marginal capacity price for capacity
- Enhancements will apply to the ISO balancing authority area in the day-ahead market and real-time market
- Maintain congestion revenue rights settlement to only settle the differences in the traditional constraint marginal congestion components

Contingency modeling enhancements proposal example:



Limited opposition to the proposal

- Southern California Edison and the Six Cities object to the proposal
  - Maintain that electricity consumers will likely pay a higher locational marginal price
  - Maintain that there is limited benefits to implementing the proposal
  - Six Cities concerned about impact of convergence bids

➢ Management response:

  - Current mechanisms to do not ensure reliability
  - Achieving an efficient, optimized, and feasible transmission solution in the market will yield an overall better solution than today
  - While energy prices may at times increase, they will accurately reflect and compensate generators for reliability criteria that must be met
  - The proposal will significantly reduce out-of-market exceptional dispatches and unpriced minimum online commitment constraints
  - Convergence bids will have same impact on constraints as today

Most stakeholders are supportive of the proposal

- Suppliers generally support, but believe it should include provisions for separate bids for corrective capacity

➢ Management response:

  – The proposed capacity pricing calculated based on energy bids reflects the costs of providing corrective capacity

  – Separate bids for corrective capacity would introduce significant complexity into the design

- Market Surveillance Committee and Department of Market Monitoring support the proposal

Management recommends the Board approve the contingency modeling enhancements proposal.

- Replaces less reliable and less efficient out-of-market operator actions including minimum online commitment constraints and manual dispatches
  - FERC has directed the ISO in several instances to reduce reliance on exceptional dispatches
- Efficiently incorporates temporal transmission reliability criteria into the market
  - As part of the September 8, 2011 blackout settlement, the ISO committed to implement contingency modeling enhancements to ensure that the ISO market procures the appropriate resources to meet reliability requirements