

# Briefing on Flexible Ramping Capacity Product

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### Background on flexible ramping product:

#### • August 2011

- Board approves flexible ramping constraint
- Management directed to expedite a bid-based flexible ramping product

#### • November 2011

- ISO starts flexible ramping product stakeholder process

#### December 2011

- ISO implements flexible ramping constraint
- FERC set compensation and allocation issues to settlement

#### • February 2012

 Board briefed on status of product design initiative and development of cost allocation principles

#### • May 2012

- Board briefed on cost allocation principles
- ISO planned to bring flexible product decision to July Board meeting



Flexible ramping is needed to balance for the range of expected net load conditions.





Flexible ramping product enables the ISO to reliably and efficiently manage the fleet.

- Improve real-time dispatch flexibility
  - Manage net load variations on a 5-minute basis
  - Reduces ramping shortages
  - Reduce real-time operation risk
- Recognize a resource's ramping value through a bid-based market product
  - Incentivize resources to make ramping capability available
  - Compensate for increased maintenance costs



Three major issues are being addressed in the stakeholder process.

- 1. How much capacity should be procured ahead of real-time?
- 2. How to resolve interplay between market processes?
- 3. How to allocate costs?



How much capacity should be procured?



How to resolve interplay between market processes?

- Consider expected real-time energy dispatch cost in the day-ahead procurement decision.
- If energy dispatch cost is considered do not allow suppliers to change energy bid in real-time.
- Resolve interplay between integrated forward market flexible ramp procurement and residual unit commitment.
- Should suppliers be allowed to buy back in real-time?



Allocate flexible ramping product costs to resource deviations driving the need for the product.



\* Movement is the 10 minute change



## Align cost allocation with principles

| <b>Guiding Principle</b>                   | Cost Allocation Design Element   |
|--|--|
| Causation                                  | <ul> <li>Costs allocated to entities based upon system need for<br/>real-time dispatch.</li> </ul>   |
| Comparable<br>Treatment                    | <ul> <li>Similar resources are treated the same.</li> </ul>  |
| Efficient Policy<br>Achievement            | <ul> <li>Allow netting across resources within a cost category.</li> <li>Using actual data to analyze the proposed allocation.</li> </ul>  |
| Incentivize<br>Behavior                    | • Incentive for resources to improve dispatch performance and provide service.   |
| Manageable                                 | <ul> <li>Use real-time forecast updated every 15 minutes to measure variable energy resource's uninstructed energy.</li> <li>Functionality to allow a resource's allocation to be transferred between scheduling coordinators.</li> <li>Transition period</li> </ul> |
| Synchronized                               | <ul> <li>Monthly re-settlement of hourly costs</li> </ul>  |
| Rational                                   | <ul> <li>Maximize the use of existing settlement functionality</li> </ul>  |
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Schedule to finalize flexible ramping product design and cost allocation rules:

- Stakeholder process: July October 2012
  - Workshops to provide opportunity for technical understanding
  - Provide sufficient time to consider FERC's recent variable energy resource rulemaking
  - Provide sufficient time for proposal consideration and comment
- Board decision: November 2012
- Target implementation: Fall 2013

