



Decision on Participation of Non-Generator Resources in Ancillary Service Markets

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Board of Governors Meeting
General Session
March 25-26, 2010

Modifications to existing ancillary service requirements will enable participation of new non-generation resources.

- Meet requirements of FERC Order Nos. 719 and 890 that directs comparable treatment
- Important step forward to enable a deeper pool of resources to provide ancillary services
 - Demand response
 - Batteries
 - Flywheels

Proposal aligns ancillary services requirements to current operational needs.

- Remove resource type restrictions and reduce minimum rated capacity to 500 kW from 1MW
- Reduce minimum continuous energy requirement from 2 hours to:
 - Spin and Non-Spin – 30 minutes
 - Real-Time Regulation Up/Down - 30 minutes
 - Day-Ahead Regulation Up/Down - 60 minutes
- Start minimum continuous energy measurement from the period that the resource reaches the awarded energy output
 - Measurement starts once resource reaches awarded energy, not end of 10 minute ramp requirement

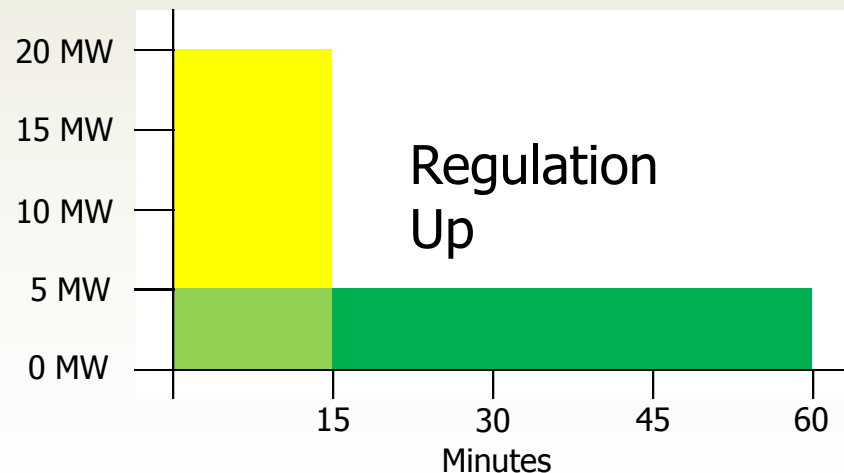
Stakeholders support proposed changes, but some argue for additional functionality to address limitations of storage resources.

- Limited energy storage resources unable to participate in day-ahead regulation market at full capacity
- Limited ancillary services modifications do not meet the spirit of comparable treatment

Example: 20 MW limited energy resource

Green – current proposal

Yellow – manage energy



Further enhancements to ancillary service markets will be addressed this summer.

Market and product design review will identify enhancements to accommodate 20% and 33% RPS

- Pilot projects
 - Test resource capabilities
 - Inform market product design

- Analyze additional means for participation of non-generation resources
 - New ancillary service products
 - Regulation Energy Management functionality

Management requests Board approval of the proposal.

- Opens ancillary services markets to all resource types
- Important step forward to greater participation of storage and demand response resources
- Deeper pool of resources able to provide spinning and non-spinning
- Comparable treatment of all technologies based upon ISO operational requirements