

# Regulation Market Issues

Markets and Reliability Committee  
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Energy  
Storage  
Association

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# Summary

- RMISTF chartered late 2015 to re-evaluate regulation market optimization and settlement. Additional items were later added from the Operating Committee.
- Charter includes:
  - Evaluate regulation signal formation, including energy neutrality
  - Evaluate Benefits Factor (BF)/Marginal Rate of Technical Substitution (MRTS) curve and RegA/RegD mix
- In fall 2016, PJM determined those two items fall within their operational authority and removed them from stakeholder discussions.
- Because of this, the package under consideration today is incomplete. Major aspects of the regulation market have been changed without the required FERC review. The proposed Tariff language does not include necessary details.
- Motion is to return current package to RMISTF with direction to add:
  - Tariff language describing regulation signals in sufficient detail to determine physical requirements of RegA and RegD resources.
  - Tariff language describing how the MRTS curve is determined.
  - Manual section describing the MRTS curve process in sufficient detail for third parties to independently verify PJM's results.



# Regulation Product

Since 2012, PJM has had an energy-neutral RegD product.

- Referenced in multiple FERC filings, but energy neutrality never placed in Tariff.
- PJM training materials have been explicit that RegD designed for 15 minutes energy neutrality.
- Ten separate unaffiliated entities have built ~285 MW of storage to these standards.

On January 9<sup>th</sup>, that energy-neutrality was substantially revised.

- New RegD signal has no firm energy limit and increased power demands.
- Substantially changed performance obligations for RegD resources, including storage built to provide 15 minutes of energy.

Allowing changes of this magnitude without FERC review creates intolerable uncertainty for all stakeholders. Other product requirements are well defined in the Tariff and analogous changes to those markets have been Tariff changes:

- Parameter limited schedules
- Capacity seller obligations and exceptions
- Demand response performance hours



# Benefits Factor/MRTS

Benefits Factor represents the tradeoff between traditional and fast regulation:

- Introduced in 2012 to capture the high value and diminishing returns of fast, energy-limited regulation.
- Used for scheduling, but not settlement.
- Method for setting BF is not in the Tariff.

Under today's proposal:

- Benefits Factor is now called the MRTS
- MRTS will be used for scheduling and settlement—the MRTS will directly set compensation for RegD providers.
- Method for determining the MRTS changed entirely, but still not in Tariff.

Unprecedented for settlement determinants to be set entirely at ISO's discretion. Analogous features of other markets are well-documented:

- Variable Resource Requirement (VRR) curve
- Operating Reserve Demand Curve (ORDC) values and Reserve Penalty Factors
- Base capacity and legacy Demand Response (DR) caps

# Motion

We are asking stakeholders require the RMISTF to come back to the MRC with a complete package that includes **all** changes made to the regulation market.

## Moved that:

The vote on the RMISTF recommendation is deferred until the RMISTF submits, at a future MRC meeting, a package that contains:

1. Tariff provisions specifying the obligations on both RegA and RegD providers and how resource physical limitations will be incorporated in regulation signals at a level of detail similar to those defining Minimum Generator Operating Parameters (OA Sched. 1 6.6)
2. Tariff provisions specifying the calculation of the MRTS curve at a level of detail similar to those defining the Base Capacity Resource Constraint (OATT Att. DD 2.2F)
3. Manual language further detailing the calculation of the MRTS curve at a level of detail sufficient for independent verification of PJM's results.