FERC Policy and Grid-Scale Storage

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Presented by:
Bob Hellrich-Dawson, Ph.D.
Federal Energy Regulatory Commission Staff
bob.hellrich-dawson@ferc.gov
The speaker does not represent the views of the Federal Energy Regulatory Commission.

My experience: Economist; RTO and ISO markets for electricity and ancillary services, storage, renewable energy integration, transmission cost allocation, market power mitigation.
Agenda

- The big orders that defined open access
  - Order No. 888
  - Order No. 890

- Generic rulemakings/orders
  - Order No. 755 – Frequency Regulation Compensation
  - Order No. 784 – Third Party Provision of Ancillary Services & Accounting Standards
  - Order No. 792 – Small Generator Interconnection
  - NOPR (Docket No. RM155-2) – Market-Based Rates for Frequency Response Service

- Some precedent – where has FERC already made decisions?
  - Various RTO/ISO tariff rules concerning storage resources
  - CAISO Tx planning

- What is next?
The Big Orders – Open Access

Order No. 888 (1996)

- All transmission providers must have an Open Access Transmission Tariff (OATT)—established the pro forma tariff.
- OATT must detail minimum terms for service—non-discriminatory.
- Public utilities and transmitting utilities can recover costs through their transmission rates.
- No terms of the Order are specific to storage.
Order No. 890 (2007)

- Changed the Ancillary Services schedule from what was required under Order No. 888.
  
  - “reactive supply and voltage control, regulation and frequency response, energy imbalance, spinning reserves, supplemental reserves and generator imbalance services, respectively, may be provided by non-generation resources” (emphasis added)
  
  - Note: New technologies are more prominent in the RTO and ISO regions.
The Big Orders – Open Access

Order No. 890 (2007)

- Added transmission planning requirements.
  - Transmission providers must have an open process to consider transmission and transmission alternatives. All resources must be treated comparably.
  - In practice, this means if anyone proposes a transmission alternative (i.e. use a battery to provide voltage support rather than using another transmission line) it must be considered. But there is no requirement to use that other resource.
- Nothing specific to storage—but it opens the door.

- Only applies to RTOs/ISOs
- Resource-neutral—takes no position on technologies and does not “pick winners”
- However, relevant to storage because of the economics
Legal Finding: undue discrimination in how resources are compensated.

- Frequency regulation is a service, not just injections and withdrawals of real power.
- Therefore, asking resources to provide more service must result in those resources being paid more (all other things equal)
- Compensation must reflect the differences in how much service is provided.
Order No. 755 Requirements

- Uniform clearing price for capacity to provide Frequency Regulation (Capacity Payment). Market-based price based on bids. Must include opportunity costs.

- Uniform clearing price for the provision of real-time Frequency Regulation service (Performance Payment). Market-based price based on bids.

- Payment must account for accuracy.

- Great flexibility allowed for the RTOs and ISOs to design detailed market rules that work appropriately for their regional markets.
Order No. 755 did not
- address qualification as a regulation resource.
- specify bidding parameters, etc. that would determine how the prices are calculated.
- address how resources are dispatched.
- create different “classes” of resources (i.e. “fast” versus “slow” resources).

The rule focused exclusively on compensation.
Generic Orders – Order No. 755

- Compliance – all RTOs/ISOs have complied and implemented new rules.
- Rules vary by RTO/ISO.
RTO/ISO Implementation

- Clearing methods & determining prices
- Measuring accuracy
- CAISO, MISO, NYISO, and SPP are straightforward
- PJM and ISO-NE are not
- Dispatch methods also vary (not impacted by O. 755)
- Charge state management varies by RTO/ISO also

- Mostly applies outside of RTOs/ISOs.
- The Avista restriction limited third party sales of Ancillary Services: Transmission Providers could only procure AS from third parties at cost-based rates.
- Self-supply of AS was at fixed MW rates.
Market-Based Rate Authority

- Easier for competitive suppliers to gain MBRA for imbalance and operating reserve sales.
- New mitigation options for sellers of reactive supply and frequency regulation
Self-supply

- New rule: if a transmission customer wants to self-supply, the TO must account for speed and accuracy of resources the TC will use in determining reserve requirement.
- In other words, if the TC has really fast and accurate resources, they can self-supply fewer MW than otherwise.
Generic Orders – Order No. 784

Transparency
  
  o Transmission providers required to post data on regulation reserve requirements.
  o Easier to compare speed and accuracy for third-party sellers.
Generic Orders – Order No. 792

- Small Generator Interconnection (2013)
  - 20 MW or less
  - Applies nation-wide

- Many changes made to SGIP/SGIA
  - Pre-Application Reporting by the transmission provider
  - Fast-track process changes
  - Review of required upgrades
SGIP and Storage

- Small Generating Facility definition changed to explicitly include storage devices.
- Clarified how capacity will be measured (maximum amount of injection).

- Applies to primary frequency response (i.e., not frequency regulation) only.
- In anticipation of individual, unbundled, sales.
- Proposal: If you have MBR authorization for energy now, you are presumed to not have market power in the sales of frequency response.
Various RTO/ISO rules on treatment of storage as an ancillary services resource – all frequency regulation.

CAISO Transmission planning—*Western Grid*.
  - CAISO had to consider this resource as a transmission alternative. The precedent is set.
  - It was not chosen.
Next Steps?

- Next steps depend on the industry.
- Next storage project proposed as a transmission alternative?
- Proposed transmission and generation project?
- Is there an existing RTO/ISO rule that is unduly discriminatory or unjust and unreasonable? Tell us.
Thank you!

Questions?

Bob Hellrich-Dawson
bob.hellrich-dawson@ferc.gov