Topics for Discussion

- Overview of FERC and the Office of Energy Policy and Innovation
- FERC Actions on Storage before the Storage Rule
- NOPR on Electric Storage Participation in the Organized Wholesale Electric Markets (Docket Nos. AD16-20-000, RM16-23-000)
  - Participation Model for Electric Storage Resources
  - Market Rules for Distributed Energy Resource Aggregations
- Order No. 841: Electric Storage Participation in the Organized Wholesale Electric Markets
- Distributed Energy Resources Technical Conference
Overview of FERC

• The Federal Energy Regulatory Commission, or FERC, is an independent regulatory agency that regulates the interstate transmission of electricity, natural gas, and oil.

• FERC does not regulate local distribution of electric energy or sales of electric energy to end users.

• Has 12 Offices, each with a specific function.
Policy Office Overview

• Policy Office coordinates the development of policies and rules to address *emerging challenges* in the electric and natural gas industries

• Engages in:
  – economic, engineering, technical, and policy analysis
  – Stakeholder outreach
2008-2009: Policy Office staff begins to conduct outreach with energy storage experts, including DOE, state regulatory officials, utilities, energy storage manufacturers, and energy storage developers.
Actions Taken Before Storage Rule

- **Order 755 (2011): Frequency Regulation Compensation**
  - Requires RTOs and ISOs to compensate frequency regulation resources based on the actual service provided via:
    - A capacity payment that includes the marginal unit’s opportunity costs
    - A performance payment that reflects the quantity of frequency regulation service provided when accurately following instructions from system operator

- **Order 784 (2013): Third Party Provision of Ancillary Services**
  - Allowed third party providers to more easily qualify for market-based rate sales of ancillary services to public utility transmission providers
  - Requires transmission providers to take speed and accuracy into account in their determination of reserve requirements for the “Regulation and Frequency Response” OATT ancillary service
  - Established accounting practices for electric storage resources to better account for and report cost-based transactions associated with the use of these resources in public utility operations
Actions Taken Before Storage Rule

• Order 792 (2013): Small Generator Interconnection
  – Revised definition of “Small Generating Facility” in the pro forma SGIA to explicitly include “storage for later injection of electricity” into the grid
  – Clarified that storage can use the fast-track SGIP
  – Clarified how thresholds should be applied in determining qualification as a small generator or eligibility to use the small generator fast track process

• Order 1000 (2011): Transmission Planning and Cost Allocation
  – Required transmission planning regions to consider “non-transmission alternatives” on a comparable basis with traditional transmission facilities in the transmission planning process (though not for purposes of regional cost-allocation). Energy storage that defers or avoids investments in transmission facilities could be considered such a non-transmission alternative.
The Commission hosted an industry panel at the November 2015 Commission meeting to discuss outstanding barriers to electric storage resources. Panelists identified potential barriers related to the following topics:

- Market Rules for Energy Storage Participation
- Interconnection Rules for Energy Storage
- Energy Storage as a Peak Capacity Resource
- Dual-use Resources and Asset Classification
- Compensation for Flexibility in the Capacity and Energy Markets
- Frequency Regulation Service Compensation
- Out-of-Market Payments
- Compensation for Primary Frequency Response
• The Commission held a technical conference in November 2016 on the utilization of electric storage resources as transmission assets compensated through transmission rates, for grid support services that are compensated in other ways, and for multiple services. The discussion included issues related to:
  – Potential models for cost recovery for electric storage resources utilized as transmission assets, while also selling energy, capacity, or ancillary services at wholesale;
  – Potential models to enable an electric storage resource to provide a compensated grid support service (like a generator providing ancillary services under a reliability must-run contract) rather than being compensated for providing transmission service; and
  – Practical considerations for electric storage resources providing multiple services at once (i.e., providing both wholesale service(s) and retail and/or end-use service(s)).
On January 19, 2017 the Commission issued a policy statement providing guidance for electric storage resources that seek to concurrently recover their costs through cost-based and market-based rates.

- The policy statement provided guidance related to: double recovery of costs, potential for adverse competitive impacts, and the need for independence of regional grid operators from market participants.
- The policy statement became effective February 6, 2017.
Wholesale Market Participation

- In April 2016, the Commission issued identical data requests to each RTO/ISO, and a (separate) request for comments to the public, regarding the RTO/ISO market rules for electric storage resources.

- Commission preliminarily found a need for reform due to:
  - Storage and DER capabilities improving and costs declining;
  - Many wholesale tariffs were developed for traditional resources, which could present barriers to market participation for emerging technologies such as storage and DERs; and
  - Integration of these resources could enhance competition and help ensure just and reasonable rates.
In response to the information received in Docket AD16-20-000, the Commission issued a NOPR in November 2016 proposing to require each RTO and ISO to revise its tariff to:

(1) establish a participation model consisting of market rules that, recognizing the physical and operational characteristics of electric storage resources, accommodates their participation in the organized wholesale electric markets and

(2) allow distributed energy resource aggregators, including electric storage resources, to participate directly in the organized wholesale electric markets.
Order No. 841 – Electric Storage Participation in the Organized Wholesale Electric Markets

RTOs/ISOs must establish a participation model that ensures:

• Electric storage resources are eligible to provide all capacity, energy, and ancillary services they are technically capable of providing.

• RTO/ISO tariffs account for physical and operational characteristics of electric storage resources.

• Electric storage resources are able to be dispatched and set the wholesale market clearing price as both a wholesale seller and wholesale buyer.

• RTO/ISO tariffs establish a minimum size requirement for electric storage resources not to exceed 100 kW.

Sale of energy from the RTOs/ISOs to an electric storage resource that the resource then resells back to those markets be at the wholesale LMP.

Compliance filings were due 12/3/18; Staff sought more information from RTOs/ISOs. RTOs/ISOs have 365 days to implement the tariff changes.
The Commission made several proposals, including:

• Eligibility to participate in the organized wholesale electric markets through a distributed energy resource aggregator
• Locational requirements for distributed energy resource aggregations
• Distribution factors and bidding parameters for distributed energy resource aggregations
• Metering and telemetry requirements for distributed energy resource aggregations
• Coordination between the RTO/ISO, the distributed energy resource aggregator, and the distribution utility

On February 15, 2018, a new rulemaking proceeding (Docket No. RM18-9-000) was created to collect additional information on the DER aggregation proposals.
To collect additional information on DER aggregation, FERC conducted a technical conference on April 10 and 11, 2018 (RM18-9-000)

Technical conference also reviewed DER impacts on the bulk power system as part of a new proceeding (AD18-10-000)

Seven panels and over 50 panelists covered:

- DER aggregation locational requirements
- State and local regulator concerns
- Double compensation for same services
- DER data
- DER modeling
- Coordination
Among other things, discussed:

- Federal/State Jurisdiction
- DER interconnection
- Advantages and disadvantages of dual wholesale/retail market participation and potential ways to identify “same services”
- Feasibility of multi-node DER aggregations
- Coordination between the RTO/ISO, the DER aggregator and the distribution utility
- Role of distribution utility in maintaining distribution reliability

The Commission received over 50 post-technical conference comments and is considering next steps in Docket No. RM18-9-000. Commission is still considering these issues.
Questions?