Morgan Lewis

Order No. 764:
Implications of Integrating Variable Energy Resources

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Overview of the Final Rule

- On June 22, 2012, FERC issued Order No. 764, which adopted reforms to facilitate the integration of variable energy resources (“VER” or “VERs”) into the electric grid.
- Order No. 764 requires two reforms:
  - The *pro forma* Open Access Transmission Tariff (“OATT”) is amended to require that transmission providers allow 15-minute intra-hourly scheduling of transmission service by all transmission customers that desire to make such intra-hour scheduling additions or changes; and
  - The *pro forma* Large Generator Interconnection Agreement (“LGIA”) is modified to require new VER interconnection customers to provide meteorological and forced outage data to the transmission providers if the transmission provider needs the data for power production forecasting.

Background: What is a VER?

- A VER is "a device for the production of electricity that is characterized by an energy source that:
  - is renewable;
  - cannot be stored by the facility owner or operator; and
  - has variability that is beyond the control of the facility owner or operator."
    - *Integration of Variable Energy Resources*, 139 FERC ¶ 61,246 at P 210 (2012) ("Final Rule").
- FERC explained that "[t]his includes, . . . wind, solar thermal and photovoltaic, and hydrokinetic generating facilities."

Pro Forma OATT Scheduling Provisions

- The *pro forma* OATT transmission scheduling provisions (Sections 13.8 and 14.6) reflect Order No. 888's generation dispatch assumption and provide that transmission scheduling should be conducted on "hour to hour" intervals.
  - Order No. 888 reflects FERC's expectation that "[a] generator should be able to deliver its scheduled hourly energy with precision." Order No. 888-A, 62 Fed. Reg. 12,274, 12,306 (1997).

VER Notice of Proposed Rulemaking ("NOPR") (Docket No. RM10-11)

- On November 18, 2010, FERC issued the VER NOPR that proposed three revisions to the *pro forma* OATT to facilitate the integration of VERs into the bulk power system.
- The NOPR was issued to remedy operational and other challenges associated with the large-scale VER integration that may be causing undue discrimination and increased costs that are ultimately borne by consumers.
- FERC preliminarily determined that the hourly scheduling protocols were no longer just and reasonable and may be unduly discriminatory.

VER NOPR

- Three Proposed Reforms:
  - Amend the *pro forma* OATT to provide transmission customers the option to schedule transmission service on a 15-minute, intra-hourly basis;
  - Amend the *pro forma* LGIA to require new VER interconnection customers to provide meteorological and operational data (forced outage data was defined as a type of operational data in the NOPR) to transmission providers with whom they are interconnected, where the transmission provider relies on power production forecasting; and
  - Add a new ancillary service rate schedule, Schedule 10 – Generator Regulation and Frequency Response Service, to the *pro forma* OATT to clarify how generator regulation costs are recovered.

Objectives of the NOPR

- The proposals in the NOPR were intended to do the following:
  - Preserve bulk system reliability by limiting VERs' tendency to lean on system reserves to balance system generation and load in real-time operations
  - Ensure that public utility transmission providers are able to recover all costs associated with accommodating fluctuations in generation, especially those associated with VERs
- FERC also recognized that the amount of VERs is increasing rapidly such that they are becoming a significant component of the nation's energy supply portfolio.

The Final Rule

Intra-hour Scheduling Requirement

- Transmission providers must offer 15-minute scheduling to all transmission customers.
- The Final Rule, however, does not require transmission providers to *convert* to 15-minute scheduling. The Final Rule only requires transmission providers to *offer* 15-minute scheduling to give all transmission customer the option of using the more frequent transmission scheduling intervals within each operating hour.
  - This action will correct an existing deficiency in scheduling practices: the absence of any requirement that transmission providers offer customers an opportunity to adjust their transmission schedules to reflect generator output.

Intra-Hour Scheduling Requirement (cont.)

- FERC affirms its preliminary finding that the existing hourly scheduling protocols expose transmission customers to excessive or unduly discriminatory generator imbalance charges.
  - Implementation of intra-hour scheduling will provide VERs and other transmission customers the flexibility to adjust their transmission schedules and limit their exposure to imbalance charges.
    - This is achieved because schedules, in advance of real-time, may be adjusted to reflect the variability of output in generation, more accurate power production forecasts to predict output, and other changes in load profiles and system conditions.
  - Public utility transmission providers will be able to rely more and more on planned scheduling and dispatch procedures and less on reserves to maintain overall system balance.

Intra-Hour Scheduling Requirement (cont.)

- FERC did not adopt its proposal to allow transmission customers the option of submitting intra-hour schedules up to 15 minutes before each scheduling interval. It retained the existing notification period, which permits scheduling changes up to 20 minutes before the start of the next schedule change.
  - A 20 minute notification period is needed to adequately evaluate, approve, and implement transmission schedules.
- FERC declined to implement additional reforms proposed by commenters.

Implementation of the Intra-Hour Scheduling Requirement

- Transmission providers may recover costs incurred in implementing intra-hour scheduling reforms.

- Public utility transmission providers may submit alternative intra-hour scheduling proposals that are consistent with or superior to the requirements of the Final Rule and are otherwise just and reasonable and not unduly discriminatory and preferential.

Impacts of Intra-Scheduling Requirement

- Improved accuracy in forecasts and scheduling from more frequent generation adjustments
- Enables transmission customers to align transmission schedules with actual generation output more effectively
- Decreased need for energy imbalance services and operating reserves
- Increased system flexibility by using available resources more efficiently
- Shifts the responsibility of holding certain reserves away from the source balancing authority for export transactions and to the purchaser.

Data Reporting to Support Power Production Forecasting

- New VER interconnection customers must provide meteorological and forced outage data to the public utility transmission provider to which it is interconnected where it is necessary for the transmission provider to develop and deploy power production forecasting.
- Prior to the Final Rule:
  - Public utility transmission providers could request the information, but interconnection customers were not required to provide it.
  - Public utility transmission providers had limited ability to develop and deploy power production forecasts to more efficiently manage operating costs associated with integrating VERs that are interconnecting to their systems.

Data Reporting to Support Power Production Forecasting

- The requirements for meteorological and forced outage data must be consistent with the power production forecasting employed by the transmission provider to manage reserve commitments.
  - Power production forecasts provide public utility transmission providers with advanced knowledge of system conditions needed to manage the variability of VER generation through the unit commitment and dispatch process, rather than deployment of reserve service (*e.g.*, regulation reserves), which can be more costly.
- The interconnection customer must provide all data needed for the public utility transmission provider to engage in the power production forecasting, even if it requires the customer to invest in additional equipment.

Specific Reporting Requirements – Meteorological Data

- The Final Rule provides certain categories of data that VERs with wind or solar as the energy source must provide.
  - These data requirements apply prospectively, and not to existing LGIAs.

- The public utility transmission provider and interconnection customer can negotiate the exact specifications of data that must be provided and the frequency and timing of data submittals.

Specific Reporting Requirements – Meteorological Data

- Wind generators must provide, at a minimum, site-specific meteorological data including:
  - Temperature
  - Wind Speed
  - Wind Direction
  - Atmospheric Pressure
- Solar generators must provide, at a minimum, site-specific meteorological data including:
  - Temperature
  - Atmospheric Pressure
  - Irradiance

Specific Reporting Requirements – Forced Outage Data

- In the NOPR, FERC proposed to require interconnection customers whose generating facilities are VERs to report to public utility transmission providers any forced outages that reduce the generating capability of their resource by 1 MW or more for at least 15 minutes.
- FERC did not adopt this proposal, finding it more appropriate for the public utility transmission provider and interconnection customer to negotiate the exact specifications of the forced outage data to be provided.
- FERC declined to set minimum thresholds or pre-define forced outage.

Impact of Data Reporting Requirement

- Advanced power production forecasting tools and procedures will:
  - Provide public utility transmission providers with greater “situational awareness” of their bulk power systems
  - Assist utilities with managing their bulk power systems on a real-time, near-term, and long-term basis
  - Remove barriers to integrating VERs into the transmission system

Generation Regulation and Frequency Response Service

- FERC declined to add a new Schedule 10 governing generator regulation service to the *pro forma* OATT.
  - The new Schedule 10 would have provided a mechanism to recover the costs of capacity underlying the generator regulation reserves used to mitigate generation imbalances, both when the relevant transmission customer is serving load within the transmission provider's BAA and when the customer is exporting to load in other BAAs.
- FERC will continue evaluating proposed generator regulation service charges on a case-by-case basis.

Generation Regulation and Frequency Response Service

- Under Schedule 10, a volumetric component existed, which would have permitted a transmission provider to require different generator classes to purchase or otherwise account for different quantities of regulation reserves based on cost causation principles.
- If a transmission provider proposes an alternative to Schedule 9 and that proposal calculates the impact of a customer class on that provider's overall generation regulation reserve needs and allocates the costs appropriately, the transmission provider should adhere to six principles.

Generation Regulation and Frequency Response Service

- Classes must be reasonably related to operational similarities and differences among the resources;
- Transmission providers must provide detailed explanations as to why such classifications are appropriate and when reserve obligations will be allocated to different classes;
- Transmission providers must demonstrate that the overall quantity of regulating reserves it requires accounts for diversity benefits among all resources and loads;
- Weather events must be accounted for so that the quantity and costs of reserves are more reflective of actual system operations;
- Transmission providers should consider the extent to which transmission customers are using intra-hour scheduling; and
- The implementation (and impact of) of power production forecasting should be addressed in any proposal.

Compliance

- Public utility transmission providers must revise their *pro forma* OATTs to provide an opportunity for transmission customers to submit transmission schedules at 15-minute intervals.
  - Transmission customers may modify existing schedules and create new schedules, as long as the transmission customer has a transmission reservation in place.
- Public utility transmission providers must modify their *pro forma* LGIAs to effectuate the data reporting requirement.
  - The reporting requirements for meteorological and forced outage data should be set forth in Appendix C (Interconnection Details) of the LGIA.

Compliance

- The Final Rule requires compliance within 12 months of the Rule's effective date.
  - If the public utility transmission provider has already implemented meteorological or forced outage reporting under business practices and markets rules, it can demonstrate in its compliance filing how continued use of the existing practices and rules is adequate to satisfy the requirements of the Final Rule or by demonstrating that variations from the pro forma OATT are consistent or superior to the requirements of the Final Rule.
- The requirements apply prospectively.

Requests for Rehearing

- The deadline to file a request for rehearing of the Final Rule was July 23, 2012. Issues raised include:
  - Whether the Commission has invited unjust and unreasonable treatment by permitting a case-by-case analysis of whether Schedule 10-type regulation is warranted;
  - The priority that intra-hour transmission schedules will have with respect to firm and non-firm hourly schedules;
  - Whether transmission owners are required to average the sub-hourly schedules submitted by a generator to determine the hourly imbalance amount;
  - Whether LSE's have an option for intra-hourly scheduling; and
  - Whether each transmission provider may determine how to utilize power production forecasts to manage reserve provision.

QUESTIONS

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