



# Federal Energy Regulatory Commission

## June 16, 2016

### Open Commission Meeting

### Staff Presentation

### Item E-1

"Good morning Mr. Chairman and Commissioners. Item E-1 is a draft Final Rule that would revise the Commission's pro forma Large and Small Generator Interconnection Agreements by establishing new reactive power requirements for non-synchronous generators, such as wind or solar generation. The draft Final Rule would remove the current exemptions for wind generators from the requirement to provide reactive power. Additionally, the draft Final Rule would require all newly interconnecting non-synchronous generators to provide dynamic reactive power at the high-side of the generator substation. Finally, the draft Final Rule would apply only to newly interconnecting non-synchronous generators that have not executed a Facilities Study Agreement as of the effective date of the draft Final Rule.

"In establishing an exemption for wind generators from the requirement to provide reactive power in Order Nos. 2003, 661, and 2006, the Commission was concerned that the cost of requiring wind generators to provide reactive power could create an obstacle to the further development of wind generation. Since then, advancements in the inverters that are used by wind generators to interconnect to the transmission system have made it much less expensive for wind generators to provide reactive power. The draft Final Rule concludes that improvements in technology, and the corresponding declining costs for newly interconnecting wind generators to provide reactive power, make it unjust, unreasonable, and unduly discriminatory and preferential to exempt such generators from the reactive power requirement when other types of generators are not exempt. Additionally, the continued exemption of wind generators from the requirement to provide reactive power could result in insufficient reactive power on the transmission system. This could lead to reliability issues as the quantity of wind generators interconnected to the transmission system continues to grow and more traditional sources of reactive power retire.

"The draft Final Rule would establish requirements for providing reactive power specific to newly interconnecting non-synchronous generators. Non-synchronous generators deliver power to the transmission system from their Generating Facilities, through the generator substation, and through sometimes lengthy Interconnection Facilities to the Point of Interconnection. Reactive power can be measured at any of those three points. The draft Final Rule would require non-synchronous generators to provide reactive power at the high-side of the generator substation. By comparison, synchronous generators are required to provide reactive power at the Point of Interconnection. Measuring the reactive power requirements at the high-side of the generator substation reasonably balances the need for reactive power for the transmission system with the costs to non-synchronous generators of providing reactive power. The draft Final Rule would also require non-synchronous generators to provide dynamic reactive power. These requirements recognize that non-synchronous generators have qualitatively different interconnection facilities compared to synchronous generators. In particular, many non-synchronous generators today have substantial collector systems and are geographically distant from the point at which they interconnect to the transmission system.

"In establishing new reactive power requirements for non-synchronous generators, the draft Final Rule recognizes that some newly interconnecting non-synchronous generators may have already started the interconnection process when the draft Final Rule takes effect. Therefore, the draft Final Rule would apply to all newly interconnecting non-synchronous generators that have not yet executed a Facilities Study Agreement as of the effective date of the Final Rule. The draft Final Rule would not apply to newly interconnecting non-synchronous generators that have already executed a Facilities Study Agreement as of the effective date of the draft Final Rule. The draft Final Rule would also not apply to existing non-synchronous generators making upgrades that require new interconnection requests. This transition mechanism would allow non-synchronous generators to complete the interconnection process without unreasonable delay or expense.

"The draft Final Rule would establish clear rules for newly interconnecting non-synchronous generators for the provision of reactive power that recognize the unique characteristics of non-synchronous generators. Further, the draft Final Rule would ensure that the transmission system has an adequate supply of reactive power as the number of non-synchronous generators interconnected to the transmission system continues to grow and as more traditional sources of reactive power increasingly retire. The draft Final Rule would take effect 90 days after its publication in the Federal Register. This concludes our presentation for today. We would be happy to answer any of your questions. Thank you."