
Regional Transmission Planning: A KEY COMPONENT OF FIXING THE INTERCONNECTION PROCESS

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Interconnection Process Workshop 2

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INTERCONNECTION HAS REPLACED REGIONAL PLANNING

- There is a widespread lack of regional transmission planning connecting generation with load centers
- This lack of planning has put responsibility for system upgrades on interconnection process
- This has over-burdened the process with the task of planning the regional network, something it was never intended to perform

SYSTEM UPGRADES ARE NOT EASILY ACHIEVED BY THE INTERCONNECTION PROCESS

- Interconnection studies for generators are increasingly identifying costly regional upgrades and are likely to do so with greater frequency in the future
- System upgrades are not easily achieved by the interconnection process, which relies primarily on participant funding

ORDER No. 2003

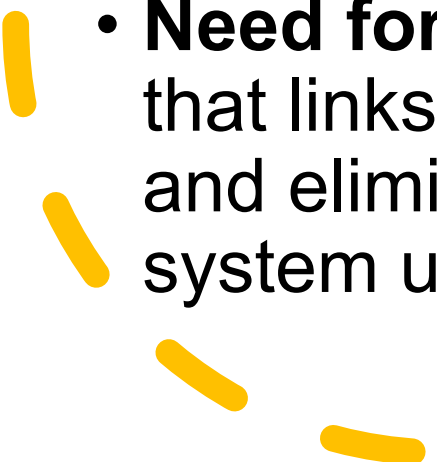
- **established “at or beyond” rule:** costs of facilities and equipment that lie between the generation source and the point of interconnection with the transmission network are born by the generator
- **default rule:** set a default rule that transmission owners would cover the cost of network upgrades (i.e. “at or beyond” the point of interconnection), but gave RTOs flexibility to customize interconnection procedures and agreements to meet regional needs
- **RTO methodologies:** Some RTOs have since adopted methodologies that place most of the network upgrade costs on the interconnecting generator

OPPORTUNITIES FOR IMPROVEMENT

- **Doesn't account for regional benefits:** large new transmission upgrades create broad-based regional benefits, which creates “free rider” problem
- **Study process is highly unpredictable and slow:** study process is highly unpredictable for participating generators. When studies identify high costs, projects drop out, necessitating new studies which cause further delays
- **Other approaches to consider:** MISO's and SPP's planning process provide examples of ways to design new cost-effective infrastructure at scale to maximize benefits and accommodate likely new generation



NEED FOR TRANSMISSION PLANNING REFORM

- **Current state of play:** interconnection process simply does not work well when there is not adequate regional transmission capacity or a functioning mechanism to plan and pay for regional transmission
 - **Need for transmission planning reform:** reform is needed that links interconnection and transmission planning processes and eliminates the use of participant funding for significant system upgrades in the interconnection process
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Order 2222

INTERCONNECTION ISSUES

Interconnection Process Workshop 2

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ORDER 2222 OVERVIEW

- Docket No. RM18-9-000
- Issued September 17, 2020
- Adopts reforms to remove barriers to the participation of distributed energy resource aggregations in capacity, energy, and ancillary service markets
- Requires each RTO/ISO to revise its tariff to ensure that its market rules facilitate the participation of distributed energy resource aggregations

DERs

- Distributed energy resource (“DER”) is “any resource located on the distribution system, any subsystem thereof or behind a customer meter.” Order 2222, P 114
- DERs include, but are not limited to, “resources that are in front of and behind the customer meter, electric storage resources, intermittent generation, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment – as long as such a resource is ‘located on the distribution system, any subsystem thereof or behind a customer meter.’” Id.

DER AGGREGATOR

- A DER aggregator is defined as “the entity that aggregates one or more distributed energy resources for purposes of participation in the capacity, energy and/or ancillary service markets of the regional transmission organizations and/or independent system operators.” Order 2222, P 118.



ORDER 2222 COMPLIANCE REQUIREMENTS

1. Allow DER aggregations to participate directly in RTO/ISO markets, and establish DER aggregators as a type of market participant (Order 2222, P 130)
2. Allow DER aggregators to register DER aggregations under one or more participation models that accommodate the physical and operational characteristics of the DER aggregations (Order 2222, P 130)
3. Establish a minimum size requirement for DER aggregations that does not exceed 100 kW (Order 2222, P 171)
4. Establish locational requirements for DER aggregations that are as geographically broad as technically feasible (Order 2222, P 204)
5. Address distribution factors and bidding parameters for DER aggregations (Order 2222, P 225)

ORDER 2222 COMPLIANCE REQUIREMENTS, CTD.

6. Address information and data requirements for DER aggregations (Order 2222, P 236)
7. Address metering and telemetry hardware and software requirements for DER aggregations (Order 2222, P 262)
8. Address coordination between the RTO/ISO, the DER aggregator, the distribution utility, and the relevant electric retail regulatory authorities (“RERRA”) (Order 2222, P 278)
9. Address modifications to the list of resources in a DER aggregation (Order 2222, P 335)
10. Address market participation agreements for DER aggregators via adoption of a standard market participation agreement for DER aggregations (Order 2222, P 352)

DISTRIBUTION UTILITY COORDINATION ON INTERCONNECTION

- Procedures for coordination with distribution utilities regarding interconnection should be designed to avoid unjust burdens on DERs' wholesale market access
- Key issues
 - Scope of distribution utility review of initial registrations and changes to registrations
 - Timeline for distribution utility review
 - Procedural safeguards for distribution utility review and coordination
 - Avoiding duplication of interconnection review
 - Ensuring timely resolution of any interconnection issues raised by distribution utilities

RELEVANT ELECTRIC RETAIL REGULATORY AUTHORITY COORDINATION ON INTERCONNECTION

Procedures for coordination with Relevant Electric Retail Regulatory Authorities (“RERRA”) regarding interconnection should be designed to avoid unjust burdens on DERs’ wholesale market access

Key issues

Similar concerns arise regarding RERRA coordination as with distribution utility coordination

Effective coordination is essential, but care must be taken to avoid unwarranted limitations on DERs’ participation in wholesale markets to their full technical capabilities