Americans for a Clean Energy Grid

Power System Resilience, Reliability, and Efficiency through Transmission

Transmission Supports Resilience, Reliability, and Efficiency

ISO-New England: "The system's ability to withstand various transmission facility and generator contingencies and move power around without dependence on local resources under many operating conditions…, results in a grid that is, as defined by the Commission, resilient."[1]

NYISO: "…resiliency is closely linked to the importance of maintaining and expanding interregional interconnections, the building out of a robust transmission system…"[2]

PJM: "Robust long-term planning, including developing and incorporating resilience criteria into the RTEP, can also help to protect the transmission system from threats to resilience."[3]

SPP: "The transmission infrastructure requirements that are identified through the ITP process are intended to ensure that low cost generation is available to load, but the requirements also support resilience in that needs are identified beyond shorter term reliability needs. For example, the ITP identified the need for a number of 345 kV transmission lines connecting the panhandle of Texas to Oklahoma. These lines were identified as being economically beneficial for bringing low-cost, renewable energy to market, but their construction has also supported resilience by creating and strengthening alternate paths within SPP."[4]

Brattle: "The power system can be vulnerable to disruptions originating at multiple levels, including events where a significant number of generating units experience unexpected outages. The transmission system provides an effective bulwark against threats to the generation fleet through the diversification of resources and multiple pathways for power to flow to distribution systems and ultimately customers. By providing customers access to generation resources with diverse geography, technology, and fuel sources, the transmission network buffers customers against extreme weather events that affect a specific geographic location or some external phenomenon (unavailability of fuel and physical or cyber-attacks) that affect only a portion of the generating units."[5]

FERC Plays a Key Role

In transmission, FERC's authority and responsibility has been clarified by the courts.[6] In contrast, states have the primary role over generation, and exclusive jurisdiction over distribution. Order Nos. 890 and 1000 provide planning guidance. These can be updated in either new or existing proceedings such as the Order 1000 review in Docket No. AD16-18.

---

[1] ISO-NE filing in FERC Docket No. AD18-7, pp. 14-15.
[2] 11 NYISO filing in FERC Docket No. AD18-7, p. 4.
[3] PJM filing in FERC Docket No. AD18-7, p. 49-50.
[4] SPP filing in FERC Docket No. AD18-7, p. 8.
[5] Chupka (2018), "*Recognizing the Role of Transmission in Electric System Resilience,*" p.3.
[6] New York v. FERC, 534 U.S. 1, 16-17, 19-20 (2001); S. Carolina Pub. Service Authority v. FERC, 762 F.3d 41 (D.C. Cir. 2015).

What FERC Can Do

- Require effective inter-regional transmission planning
  - Overcome the “triple hurdle” problem currently holding back efficient and reliable upgrades.
- Improve transmission planning
  - Pro-actively plan for multiple needs.
  - Require inclusion of all quantifiable transmission benefits in planning.
  - Use a time period that approaches the useful life of the physical assets (e.g. 30-40 years) so that assets can be “right-sized” to benefit customers in the most efficient way possible.
  - Require inclusion of “insurance” benefits through scenario-based analyses that take uncertainties into account.
  - Include in transmission plans reasonable estimates of the amount and locations of new generation in interconnection queues so that greater generation diversity can be brought to bear during high impact events.
  - Clarify how resilience should be factored into planning criteria. Require planners to consider state-of-the-art transmission operations and equipment to serve customers in the most efficient, reliable, sustainable, and affordable manner.
- Increase deployment of advanced transmission technologies through aligning incentives. Hold a technical conference to encourage industry innovation in this area.