Federal Energy Regulatory Commission

Review of Generator Interconnection Agreements and Procedures	**Docket No. RM16-12-000**
American Wind Energy Association	**Docket No. RM15-21-000**

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Statement for Panel 1: The Current State of Generator Interconnection Queues

On the question of how well queues are working, we think they are not working as well as they should. Study groups are growing larger, with more projects and MWs entering interconnection request study queues, and Transmission Providers are falling behind schedule. We are seeing longer study result timelines including delays caused by system impact restudies in many regions. The majority of new generator interconnection requests submitted by developers will not lead to construction of projects. A key determinant of the ultimate viability of a project includes the cost and schedule of network upgrades determined through the interconnection study process, including the system impact study phase. As new generation projects drop out of interconnection queues, system impact studies are reanalyzed, and there is a longer timeline until valid, stable results are known. We favor accurate upfront assessments of potential upgrade costs coupled with study performance standards to enable generators to decide whether to advance through the queue or to exit to reduce the number of unviable projects in the system impact studies.

It's also unclear why, all things being equal, studies can't be done faster. One of the issues to explore today is whether timelines and study practices make use of the latest IT technology, standardized inputs and whether staffing is adequate. NextEra Resources supports Transmission Providers adding additional study resources, as long as those additional resources result in shorter study intervals with repeatable, valid, stable results.

With respect to whether there are best practices in queue management that should be incorporated across regions, we think many regions have taken helpful measures. Right now, the region that appears to be doing the best is ERCOT. This may be for numerous reasons, including the benefit of the CREZ transmission build-out, and the fact that transmission owners do the interconnection studies after the initial screening study by ERCOT, which spreads out the work among more parties.

Regarding the primary considerations to take into account in developing queue solutions, we believe the key is to provide accurate, stable results information to developers in the shortest time available to enable investment decisions to proceed with a project. At the outset, many projects are in the interconnection queue, but network upgrade cost and schedule are unknown. While it is generally helpful that electric system planning models are made available to interconnection customers in advance of a study process commencement, the electric system planning models have limited usefulness. First, the system planning models only contain facilities at 100kV and above. Developers are unable to ascertain in advance the impact a new generator request may have on lower voltage (<100kV) facilities operated in parallel with the 100kV and above facilities. Second, the models do not give developers a complete picture of the impact that its new generator request may have on the electric system given the cumulative impact of other new generators that enter the same study group. Taken as a whole, a group of generators are of course likely to have a greater impact on system upgrade requirements than a single standalone generator. But developers do not know about other new generator interconnection requests and are unable to account for them when seeking to analyze and estimate system impact and interconnection costs, including any assignable system upgrades. As a

result, it is essential that the Transmission Provider be able to provide an accurate picture of upgrades as soon as possible.

The cost and timing of network upgrades are key pieces of information needed to decide project viability. An interconnection process does not work well if generators are not provided stable, accurate, timely network upgrade cost and schedule information. Generator withdrawals from a group study can exacerbate this problem. Generally, Transmission Provider study procedures require system impact re-studies upon generator withdrawals that can change the previous study results. Unfortunately, depending upon the group of generators that are in a given study process, even small project withdrawals can trigger a re-study that also impacts the results for groups of remaining generators, adding further delays in achieving needed system upgrade cost and schedule certainty. Those generators that elect to remain in the group often have to wait a long time for system upgrade cost and schedule information to stabilize, and therefore cannot react earlier in determining whether to continue with the further development of their projects.

Accordingly, the key to developing optimal interconnection solutions is for the Transmission Provider to be able to form a reasonably accurate answer of upgrade costs early in the process that then allows customers to determine whether to proceed with a project. These initial assessments need to be improved to provide better information at the outset and thin out study groups and avoid the inefficiencies of delays and restudies due to overly large study groups. The studies would then fine-tune the information, but should have few surprises.

Statement for Panel 3: Certainty in Cost Estimates and Construction Time

NextEra Resources agrees with the AWEA petition on the need for more certainty throughout the interconnection process. NextEra Resources believes that the most important way to enhance cost and schedule certainty for interconnection customers is to enhance their ability to build the transmission owner interconnection facilities and network upgrades. This is especially the case in those markets where costs are entirely, or substantially, directly assigned to the customers, such as in SPP and MISO.

When a customer builds network upgrades that it will pay for in any respect, it has a great incentive to manage the costs and schedule of the project because of its ultimate responsibility for those costs and the impact of the schedule.. Unfortunately, the current rules restrict the ability of a customer to build. We can only build transmission owner interconnection facilities and standalone network upgrades. But it is seldom – in less than 10% of all cases – that we are given authorization to build. One reason is that TOs can take a very conservative view of what constitutes standalone network upgrades, which are facilities that can be constructed without affecting day-to-day operations of the transmission system during construction. Second, TOs have the right to tender construction schedules to the interconnection customers, and customers are allowed to choose to construct only if they reject the TO's proposed schedule. Customers do not have the ability to reject proposed costs and manage their own cost estimates and actual costs.

In NextEra Resources' experience, when we are given the right to construct, we do it faster and at lower cost than the TO does. We have much more of an incentive to manage costs than TOs do, and it shows in the results. For example, we are currently building high voltage facilities for several projects and estimate that our costs will be 2/3 of what the transmission owner had estimated, and we will complete the work this year instead of next, as the TO had proposed. We follow the requirements of the tariff, and hire engineering firms and construction firms from the TO's list of approved firms, and we build to the specifications given to us by the TO. But because we have an incentive to manage cost and schedule, we have managed to do better than when the TO constructs.