**Opening Remarks of Kris Zadlo, Invenergy LLC**
**Review of Generator Interconnection Agreements and Procedures Technical Conference**
**Docket Nos. RM15-21-000, RM16-12-000**
**May 13, 2016**

Good morning, my name is Kris Zadlo and I am Senior Vice President of Regulatory Affairs, Storage and Transmission for Invenergy. Invenergy has developed approximately 14,000 MW of utility-scale wind, solar, natural gas and energy storage projects in the United States, consisting of approximately 9000 MW of projects in operation, and 5000 MW in construction or advanced development. Invenergy supports AWEA's petition. My purpose here is to provide the Commission with Invenergy's experience to date.

That experience includes our having encountered significant delays, sometimes up to 6-7 years, and our having been negatively affected by other significant flaws in the interconnection processes. My comments today focus on the RTOs and ISOs (which I'll refer to collectively as the "RTOs"), and the bottom-line is that while some of the RTOs are much more interconnection-friendly than others, the interconnection process continues to impose significant barriers to generation development in these organized markets.

## I. There are significant delays in the current interconnection processes.

RTOs widely vary in their effectiveness in managing interconnection queues; some RTOs generally do a good job, while others are considerably less successful. For example, our experience is that SPP's interconnection process on average has taken approximately one year, PJM's process has lasted approximately 2 years or so, and CAISO's process has taken roughly 2.5 years. A two year timeline generally can support our development schedules. On the other hand, MISO's interconnection process has seldom taken less than three years, and NYISO's

Class Year process has taken as long as 6-7 years.[1] An interconnection process lasting three years or more can kill even the most serious of projects.

A. **Potential causes of interconnection delays.**

While the causes for the delays are complicated, we have seen three common contributing factors.

First, it is apparent from the outset of the process that some RTOs do not have adequate resources to administer their interconnection queues. When we submit interconnection requests in some RTOs, the RTO staff will follow up quickly to set up scoping meetings to get the process started, and the RTO interconnection manager works closely with the transmission owner to ensure that it is doing its part to complete the interconnection studies on time. In stark contrast, when we submit interconnection requests in other RTOs, the request is typically followed by long periods of silence, and ultimately by the RTOs sending us delay notices that are at best vague as to the reason for the delays. For example, MISO recently explained that it had encountered "unforeseen delays" in processing an Invenergy study due, in part, to its own resource constraints. Our clear impression is that these differences reflect some RTOs having dedicated sufficient resources and others having adopted a culture which views the interconnection process as an important aspect of their operations rather than a burden to be suffered.

Second, in a number of RTOs it is oftentimes the individual transmission owner's lack of diligence that delays the process. Transmission owners are, of course, highly motivated to

[1] *See* "ISO/RTO Joint Common Performance Metrics Report" at 174 and 231, *Common Performance Metrics*, Docket No. AD14-15-000 (Oct. 30, 2015) (reporting that MISO and NYISO average interconnection request processing times in 2013 exceeded 1200 and 2250 days, respectively).

participate diligently in the regional transmission planning processes where they have the opportunity to identify new expansion projects for which they will be paid. But in our experience, they have not always demonstrated the same diligence in fulfilling their obligations to assist in ensuring timely interconnections. This is entirely understandable given that the current interconnection procedures provide no incentive, much less a firm (or realistically auditable) requirement for transmission owners to complete their scope of work on time; they are subject only to a "best efforts" standard. So even where a transmission owner might be proceeding in good faith, without firm deadlines and consequences for its failure to meet deadlines, or a way for the Commission to be able to monitor the transmission owner's actions in anything close to real time, the interconnection simply becomes a lower priority and more prone to delay than other study processes and/or facility construction projects. But regardless of its reasons, the transmission owner's inattention, unless quickly remedied will continue to disrupt and delay the interconnection process. For example, it took a NYISO transmission owner over a month simply to counter sign a pro-forma Facilities Study Agreement that Invenergy had already executed. When these types of delays and inefficiencies arise at each step of the interconnection process, the study process is inevitably delayed. Again, without the possibility of being seriously pressured into acting more expeditiously, this behavior is not surprising.

Third, there is currently no means by which the parties expeditiously can be forced to resolve impasses and/or disputes as they arise. For example, one of Invenergy's interconnection requests in NYISO has languished going on 8 months, while NYISO and the transmission owner argue about the appropriate metering scheme. Meanwhile, Invenergy, the interconnection customer, is left sitting in the waiting room without any ability to force or even to pressure the transmission owner and the RTO to resolve the issues delaying the interconnection process.

### B. **Recommendations.**

Given the range of RTO interconnection timelines, and the history of delay in some RTOs, the Commission should take this opportunity to establish generic reforms rather than continuing to defer to regional differences. These generic reforms should require that RTOs have adequate resources to administer their interconnection procedures (with specific metrics, e.g., in terms of timeliness and study costs) and should set firm deadlines for transmission owners to complete their tasks under the interconnection process. In addition, the RTO should provide official notifications to interconnection costumers in the event of study delays which should include a detailed reason for delay and new task completion date.

There also needs to be oversight and a dispute resolution mechanism built into the interconnection process. One option could be to require each RTO to establish an in-house ombudsman – tasked with addressing issues that are delaying the interconnection process – who then reports to designated Commission staff to intervene in real-time as needed to assist in problem resolution. Also, RTO market monitors should be required to investigate serious interconnection delays, because this ultimately affects matters within the market monitor's purview – market entry and competition. Just as market monitors and Commission enforcement staff would scrutinize outlier bids submitted in the RTO markets, they should also scrutinize outlier interconnection results. Finally, the Commission should require each RTO to demonstrate that it is dedicating sufficient resources to the interconnection process.

## II. **The current interconnection procedures increase potential for errors and disputes, which result in increased costs.**

### A. **Potential sources of disputes and unnecessary costs.**

The current study procedures also can lead to errors and, consequently, further disputes late in the process and potentially discriminatory results in some regions. Key study assumptions

– load and generation dispatch – will dictate what potential overloads might occur, and therefore the conditions that would have to be addressed, oftentimes by requiring that expensive and time consuming upgrades be constructed. In fact, in some instances, unique assumptions are created for each study based on input from the ad-hoc study groups (consisting of transmission owners and RTO staff) where the transmission owner has sometimes forced the RTO to adopt its own assumptions as to what conditions must be studied. However, even though these study assumptions have a significant impact on the study results, the fact is that these assumptions are kept from, and are oftentimes completely unclear to the interconnection customer until after the study has been completed and the time to resolve any dispute as to these assumptions or to avoid any restudies has long since passed. Moreover, in regions where the interconnecting transmission owner is allowed to insist upon what assumptions are utilized, there is an obvious potential for undue discrimination where that transmission owner or its affiliate develop its own projects. This needs to be changed.

We understand that there are some transmission owners that have "Local Planning Criteria" but those are generally published and available for review before the study starts. Adding or changing the study scenarios "on the fly" based on the desires of the transmission owner can result in significant impact on the project and, as mentioned before, can result in misunderstandings of the transmission owner's intentions.

In addition to the study assumptions not having been agreed upon prior to the start of the studies, Invenergy often has found errors in certain of the study assumptions ultimately used, such as incorrect line ratings, transmission topology, and the actual load amounts and generation dispatch under the assumed conditions. These errors have likewise led to unnecessary upgrades having been identified in the interconnection studies. In fairness, whenever we have had studies

that show upgrades resulting from modeling errors the RTOs have been receptive and willing to change the results when appropriate. However, this back and forth adds time, cost and uncertainty. And there have been very serious instances in which interconnection customers have been informed of modeling errors after their facilities have achieved operation only to find that they owe millions of dollars in upgrades after the fact.[2]

The importance of transparent and accurate studies cannot be understated. In our experience, the problems surrounding the lack of transparency are magnified for Affected System studies, which are best described as a roll of the dice. For instance, Invenergy has had situations where NYISO – which provides no up-front parameters for affected system studies other than to say it will comply with certain NERC rules – has determined that it is "good utility practice" to unduly stress the system for the purpose of Affected System studies. In one such study, NYISO assumed 25% of the generation in Zone A was unavailable and, in addition, backed down other baseload resources, including a nuclear unit, creating an entirely unrealistic operating scenario under the guise of reliability. Yet these study assumptions were not disclosed to Invenergy until it was presented with the study results on the basis of these plainly unreasonable assumptions.

Moreover, when Invenergy requests the models and data underlying these studies – which are key to understanding the study results and making informed decisions – it often encounters even further obstacles. For instance, when it requested the base case model from one RTO, the RTO informed Invenergy that its practice was not to release the model to customers.

---

[2] *Midwest Independent Transmission System Operator, Inc.*, 135 FERC ¶ 61,222 (2011), *reh'g*, 143 FERC ¶ 61,050 (2012), *reh'g*, 148 FERC ¶ 61,047 (2014).

Invenergy was eventually able to obtain the base case model, but not without having to invoke the Commission's hotline and only after weeks of negotiations involving the RTO's legal staff. Or there may be excessive fees, such as when MISO recently proposed requiring customers to pay a non-refundable $5,000 fee in order to access its feasibility study model. And where confidential information is involved, accessing this information – which Invenergy is entitled to under the Commission's rules – can take weeks under some RTOs' current procedures.

In addition to the lost time, rerunning studies can greatly increase the study costs for interconnection customers. Requiring interconnection customers – who do not control the study process – to bear this risk alone does not incentivize efficient or accurate study processing. There are many reasons study costs may have been increased – an error in the study model or assumptions or where an RTO may have chosen to restudy a request when such restudy was not necessary – none of which the interconnection customer can control. In one ongoing study in MISO, Invenergy paid the study deposit of $360,000 as required under the tariff, and recently the transmission owner requesting another $435,000 to complete the study. After Invenergy asked for further information, the additional study cost has been reduced to $340,000 with MISO, but MISO has provided only a vague explanation of the reasons that additional payments are required. Invenergy has been given no information on how its original study deposit was spent, nor why those funds were not sufficient to complete what, as noted above, are the common elements of an interconnection study.

B. **Recommendations.**

Interconnection customers need to have studies completed within a reasonable timeframe and cost to support development, and (1) need to have some mechanism to identify early, and to quickly address an RTO's basis for creating what has oftentimes proven – after the fact – to be

an unrealistic study assumption; and (2) must be able to rely on reasonable standards which may result in requests for additional funding to complete studies or rerun studies. Study assumptions – and a standardized process for accessing any confidential information – need to be established before the study begins, and the Commission should require they be clearly enumerated in the RTO documents and provided to interconnection customers up front. RTOs should also use some specified engineering standard or establish minimum thresholds for determining when restudies are justified and exercise their engineering judgment in a manner that comes up with reasonable scenarios. Recognizing that customers often do not control the study process, to better incentivize efficient study processing, the Commission should set a study cost overrun threshold above which the RTO would be responsible for any additional costs, or at a minimum be required to bear these costs absent a Commission approved filing.

## III. **The Commission should require ongoing reporting.**

The current state of disarray in some interconnection queues shows that greater Commission involvement in the RTO interconnection processes is sorely needed. This should begin with requiring detailed reports from RTOs. Instead of annual reports detailing average performance, each time a study is delayed beyond a certain threshold, and each time an RTO deviates from generic reforms the Commission may adopt, the RTO should be required to file a notice of untimeliness and explain what factors led to the delay or why such deviation was justified. This information will better inform the Commission of the extent of interconnection delays and the effectiveness of measures adopted in this proceeding. The Commission should review these reports and act on or further investigate these deviations and delays.

Similarly, as discussed above, the Commission should establish an ombudsman, with direct access to designated FERC staff, to provide an avenue for timely relief when customers are at an impasse or have a dispute about matters affecting studies.

RTOs should have no reason to oppose these measures, including the need for notices or for intervention by the ombudsman and FERC designee, because no reports will need to be filed and no calls to the ombudsman will be made as long as the RTO meets tariff requirements, including those established for timeliness, early identification and agreement on study assumptions.

While these issues may be complicated, the Commission should take this opportunity to improve the interconnection process. The RTOs have the responsibility to manage a fair and efficient interconnection process, and FERC should be involved in making sure that this is the case.

Thank you for the opportunity to participate in today's conference, and I look forward to any questions.