

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Commission's Review of :
Chapter 4901:1-22 of the Ohio : Case No. 18-884-EL-ORD
Administrative Code Regarding :
Interconnection Services. :

**INITIAL COMMENTS
SUBMITTED ON BEHALF OF ONE ENERGY ENTERPRISES LLC**

One Energy Enterprises LLC (One Energy), based in Findlay, Ohio, is responsible for 40.5 megawatts (MWs) of installed distributed energy resource (DER) wind projects in Ohio. One Energy's projects range from 1.5 MWs to 4.5 MWs and its customers include Cooper Farms, Haviland Plastics, Whirlpool Corporation, Ball Corporation, and Marathon Petroleum, among others.

By entry dated January 29, 2020, the attorney examiner in this case found that interested parties must file initial comments regarding the Public Utilities Commission of Ohio's (Commission) proposed interconnection rules by March 13, 2020.

One Energy is the largest wind interconnector in Ohio and has more wind generation interconnected in the state than all others combined. A technically sound and procedurally effective interconnection standard is essential to One Energy's business model and our customers' ability to receive the benefits of on-site generation. Therefore, One Energy offers these comments and recommendations to the Commission's proposed interconnection rules.

I. One Energy's Responses to Staff's Request for General Comments

- a) The Commission should not adopt IEEE 1547-2018 until the accompanying standards that make it possible to functionally adopt IEEE 1547-2018 are finalized.**

In the Commission's Entry, Staff seeks general comments on the best method for adopting IEEE 1547-2018 in Ohio. One Energy asserts that IEEE 1547-2018 should not be adopted until the accompanying standards for IEEE 1547-2018 are finalized and additional study by technical stakeholders in Ohio has taken place.

IEEE 1547-2018 is not ready to be adopted. IEEE 1547-2018 as it has been released is only a single chapter of a book that contains multiple chapters. The accompanying standards that set forth the testing and evaluation procedures to ensure DERs comply with IEEE 1547-2018 are not finalized. Therefore, it is not even possible to functionally adopt IEEE 1547-2018 at this time. The Commission should wait until the accompanying standards are finalized to adopt IEEE 1547-2018.

Additionally, IEEE 1547-2018 proposes new operational paradigms of low voltage ride through (LVRT) and zero voltage ride through (ZVRT) for DERs. As discussed in more detail below, this new paradigm removes control from both EDUs and DER operators in the operation of the distribution system and DERs and poses serious safety risks. Therefore, One Energy highly recommends that the Commission not adopt the standard at this time and instead allow for more study with technical stakeholders prior to adopting the standard.

- b) The ride through provisions of IEEE 1547-2018 should not be adopted at this time because doing so could cause unnecessary safety risks for the public.**

The Commission Entry also asks for general comments on which ride through requirements should be adopted in these rules and why, noting that PJM has encouraged the

Commission to specifically adopt IEEE 1547-2018 and its ride through provisions in this five-year review. The Commission should decline PJM's invitation to make such a radical change to the rules that govern how the distribution system functions until there has been further study.

For context, faults in distribution systems that result in voltage dips or zero voltage conditions are often the result of an abnormal event like a car hitting a power line. Under versions of IEEE 1547 prior to IEEE 1547-2018 and under current Commission rules, DERs must cease operations immediately if such an abnormal event occurs so that the DERs do not continue to feed current into the distribution system. Adopting LVRT and ZVRT for DERs would enable DERs to continue to operate for two seconds or longer after an abnormal event like this and make it harder to even detect the event. In the car example, this could mean DERs could continue to feed current into the distribution system and into the car that hit the powerline, creating an unsafe and potentially deadly condition for victims and rescuers.

PJM's request to require LVRT and ZVRT is a paradigm shifting request that can and will hurt the safety of the distribution grid and can reasonably be expected to result in loss of life. PJM is asking the distribution system to support the transmission system for the first time in the history of the power grid, which is not how the system was designed to work. To make this paradigm shift possible, an entirely different protection and control scheme needs to be developed and tested. We are not there yet as an engineering community. Neither DER operators nor EDU's are ready for this change. Therefore, Ohio should not adopt any ride through requirements at this time and instead allow for more study with technical stakeholders prior to adopting the standard. In the meantime, Ohio should consider allowing, on a fully optional basis, large DER operators (> 1MW) and EDU's to work together to solve the technical issues regarding LVRT and ZVRT and allow those features for DERs on a case by case basis when it is

safe and technically feasible to do so. There should be a mechanism for compensation to occur among those parties to incentivize those conversations. This next step would be a logical progression from the current system rather than making LVRT and ZVRT mandatory for an industry that is not ready for such a change.

- c) **The Commission should use this rule review to provide clarity regarding whether a request for interconnection is subject to Ohio or PJM jurisdiction.**

Staff asks whether it is necessary for the Commission to clarify whether requests for interconnection are subject to Ohio or PJM jurisdiction. One Energy believes that it would be helpful for the Commission to make this clarification. It is One Energy's position that behind-the-meter interconnections, regardless of size, are and should be the exclusive jurisdiction of Ohio, not PJM and that jurisdiction over other interconnection requests (for non behind-the-meter generators) should be based on the system the generator is interconnecting with.

- d) **The level 3 interconnection process is broken and needs to be more standardized and provide more predictability on the timeline for the process.**

The Commission asks for feedback regarding the efficacy of the administrative procedures and processes for interconnection. It also asks whether costs are adequately addressed. Almost all of One Energy's interconnections have been level 3 interconnections. Therefore, One Energy will only be providing input on the level 3 process.

In One Energy's experience, the level 3 interconnection process is a quagmire of arbitrariness wrapped in a cloak of bureaucratic inefficiency. Different EDUs, and sometimes even the same EDU, make fundamentally opposite engineering decisions without rhyme or reason. Costs for engineering studies are all over the place without justification. Transmission groups inside the same EDU act entirely different than distribution groups without justification

for similar behind-the-meter interconnections. And the timing of the process is all over the place. Within two years, One Energy believes that the single biggest barrier to large renewable DER adoption in Ohio will be the level 3 interconnection process. One Energy has had applications take more than six months to come back with “no issues.” At the very least, the level 3 interconnection process should include a firm timeline for the process to be completed, and EDUs should be held accountable to that timeline. One Energy believes that no interconnection study should take longer than 60 days but would support a 90-day timeline.

Regarding the cost of the process, One Energy believes the cost structure for level 3 interconnection applications needs to be reevaluated. In the current and as proposed rules, level 3 fees include: 1) an application fee of up to \$100, plus \$2 per kilowatt of the system’s nameplate capacity, 2) the cost of engineering work done as part of any feasibility, system impact or facilities study, billed at actual cost, and 3) the actual cost of any modifications of the EDU’s system that would otherwise not be done but for the applicant’s interconnection request. See OAC 4901:1-22-08. On the other hand, the level 1 fee must not exceed \$50 and may be waived. This difference is stark. In Ohio, a DER can be up to 20 MW. This means that larger DERs may have to pay up to a \$40,000 application fee *in addition to paying all of the cost of the engineering work and modifications to the EDUs system*. One Energy agrees that DERs should pay the actual costs of studies and upgrades. However, One Energy struggles to understand how reviewing an application packet alone can cost \$40,000. As a DER owner and operator, One Energy should not be a profit center for EDUs. Currently it is. One Energy has already paid more than \$100,000 in application fees and then has still had to pay hundreds of thousands of dollars for the impact studies and system upgrades. That makes no sense. Either utilities should have a per-kilowatt fee that includes the impact study or they should have a flat level 1, level 2, and

level 3 application fee plus their actual costs. We suggest that the following structure be implemented:

- a. For all inverter-based systems less than 10kW, \$100
- b. For all other level 1 applications \$250
- c. For all level 2 applications, \$500
- d. For all level 3 applications, \$1,000 plus actual costs of engineering work, system impact studies, and modifications to the EDU's system.
- e) **The Commission should form a working group including technical stakeholders to aid in the continued development of these rules, both now and through future review.**

The Commission absolutely needs a technical working group to review the nuanced technical issues associated with these proposed rules. This working group should include a range of technical stakeholders steering the conversation with policy people and lawyers observing. The way the grid operates is a delicate balance between customers, EDUs, transmission operators, and large power producers. That balance is fundamentally changing. The power grid was not designed to operate with DERs and the technical issues and uncertainties abound. The only certainty is that these changes will continue at an accelerating pace. The Commission should create a technical team to try to stay on top of the fundamental technical changes in the grid as they happen. This team's focus should be on the *technical* issues of what can take place from an engineering perspective, not be a venue for a conversation on policy issues such as who pays for what.

II. One Energy's Comments on the Proposed Rules

a) 4901:1-22-05(B)(1)(b)(ii)

One Energy notes that for larger generation systems, such as wind generation systems, the equipment package is not a certified or listed system. Rather, testing of the generator and equipment package are performed pursuant to a detailed process contained in IEEE 1547. Therefore, applicants cannot identify that the integrated generator or electric source to be used with the equipment package is consistent with the testing and listing specified for the equipment package as proposed OAC 4901:1-22-05(B)(1)(b)(ii) states. To take this into account, OAC 4901:1-22-05(B)(1)(b)(ii) should be changed to read: "Consistency with the testing and listing specified for the equipment package *if testing and listing for the equipment package exists.*"

III. General Feedback of One Energy Regarding the Interconnection Process in Ohio

As a DER owner and operator, One Energy is unique in its active participation in Commission cases. Many DER companies do not have the resources to be part of these processes and are unfamiliar with what options they have if they feel they are being treated unfairly by the utility. Most believe their only option is to file an expensive and lengthy complaint at the Commission. Therefore, when issues arise in the interconnection process, many DER owners and operators get frustrated and give up rather than attempt to "fight" the goliath utility. Unfortunately, EDUs sometimes use this to their advantage. One Energy has had the experience of the utility saying "are you going to sue us over this?" when they were knowingly not adhering to the process. This is a tactic that concerns One Energy.

One Energy believes there should be some sort of simple process to request PUCO oversight or mediation in an interconnection dispute. That mediation option should be explained on the Commission's website. Then, if an issue arises where, for example, an EDU estimates two

months for a study but takes six, Staff and/or an Attorney Examiner can be involved to informally try to resolve the issue. Such a process would go a long way towards making the process more approachable for DER installers.

Respectfully submitted,

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Summary: Comments electronically filed by Ms. Katie Johnson Treadway on behalf of One Energy Enterprises LLC