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| **TECHNICAL REQUIREMENTS & INTERCONNECTION PROCESSES FOR DISTRIBUTED ENERGY RESOURCES (DERS)** | §<br>§<br>§<br>§ | **PUBLIC UTILITY COMMISSION OF TEXAS** |

# INITIAL COMMENTS OF ALISON SILVERSTEIN CONSULTING ON DISCUSSION DRAFT AND ASSOCIATED FORMS FOR DER INTERCONNECTION RULES

Alison Silverstein Consulting respectfully submits these comments in response to the Commission's Request for Comments on Discussion Draft and Associated Forms for DER Interconnection Rules (§§25.210-25.212) under Project 54233. The recommendations below are intended to support the Commission's goals of modernizing distributed energy resource interconnection with particular attention to making it easier for small residential and commercial systems to get online without harming utilities' distribution systems.

As DER energy and protection technologies have matured and expanded, they offer extensive value to the customer, host communities, and often to the grid as a whole by providing additional energy and ancillary services. This rule update is welcome because it is past time to modernize Texas' DER interconnection rules to streamline and standardize DER interconnection.

Small residential and commercial distributed energy resources under 50 kW nameplate capacity have several characteristics that merit special interconnection treatment. These systems are made up of standardized commercial components that meet national lab certifications and are packaged in predictable ways; they are owned and hosted by residential and small commercial customers who in most cases don't export energy to participate in the ERCOT market; most such customers do not have deep energy expertise but are applying for interconnection through a DER installer or aggregator; and these small DER packages interconnect to utility distribution systems where each individual DER has a minimal impact on the feeder to which it will interconnect.

The interconnection rules proposed for larger DER systems leave too much latitude for transmission and distribution utilities to apply discretion and discrimination in DER interconnection processing. Even if the utility does not intentionally discriminate against smaller DER applicants, the rules as written leave too much room for utilities to constrain small DER package design and delay interconnection. And variations and inconsistencies between utilities' implementation of the DER rules raise costs and complications for the businesses that design and install small DERs. Standardization of DER interconnection requirements for DERs under 50 kW nameplate capacity across all Texas utilities (ideally including coops and munis) would make it easier, cheaper and faster for customers to invest in small DERs for personal and community resilience, and easier and cheaper for DER installers and aggregators to serve them.

For these reasons, the Commission should establish a separate, simplified and streamlined set of procedures and requirements for interconnecting DER systems under 50 kW nameplate capacity and 25 kW export capacity. These comments offer proposed rule language for that purpose.

**Staff questions**

How to weigh technological innovations v. standardized DER technical requirements? Technological innovations and standardized DER technical requirements need not contradict each other. The Commission should design these rules with clear technical requirements and procedures for DERs and clear performance protections for utility distribution and transmission equipment and personnel. DERs that meet all of the technical requirements and use standardized, certified equipment and set-points should protect the grid and utility personnel and should receive fast, predictable interconnection treatment. If DERs use technological innovations that haven't yet been certified under national technical standards, then the utility should be able to do additional analysis and modeling to determine whether those innovations might compromise risk grid safety and reliability – but the Commission should set procedural rules and limits to assure that the utility is not discriminating against innovative technologies and applicants.

Should §25.210 Large DER interconnection rules apply to municipally owned and cooperative utilities? Yes, if the Commission's authority allows, DER interconnection rules and processes should apply to all utilities – ideally, to all elements of all substantive rules on interconnection, not just §25.210. Given the rate of demand growth and reliability challenges across our state and the challenges of meeting customers' electricity needs and protecting customer and community resilience, we cannot afford to raise the costs of or delay the installation of customer-funded DERs. If all Texas utilities use prudent, consistent technical and procedural requirements for DER interconnection, that will reduce the soft costs of DER design, speed DER acquisition and interconnection, and make it easier for the utilities to assure that the new DERs protect the grid as well as customers.

**Create a simplified, fast-tracked application process for DERS under 50 kW**

Most residential and small commercial DER installations are sized below 50 kW, interconnect into the distribution system, and export less than 25 kW (if at all) into the grid. Because these systems are lower cost and use more standardized equipment and configurations, they should not require extensive evaluation of how the DER package will behave or how it will affect a distribution feeder. Therefore, it is appropriate to remove time-consuming application processing times and grid study requirements for these small, under 50 kW DER applications.

A proposed DER under 50 kW nameplate capacity and 25 kW export capacity should receive fast-track, two-week review processing if all of the equipment in the DER package is certified under national technical standards from National Recognized Testing Labs. This may include energy storage devices and a variety of generation devices, including distributed natural gas generation facilities, as long as the total DER package size is less than 50 kW nameplate capacity and 25 kW export capacity.

Please find attached a proposed fast-track rule for DERs under 50 kW nameplate and 25 kW export capacity, that redlines the staff draft 25.211 rule.

**Interconnection applications for DERs in the under 50 kW and under 250 kW classes**

The proposed application forms for DERs sized at 250 kW and less do not contain enough information to allow a small customer to clearly understand what should be submitted, nor to allow the utility to analyze the proposed DER and process the application quickly and easily. The application forms for DERs under 50 kW nameplate and 25 kW export in particular should be modified and simplified to use clearer language and collect additional information. The utilities should use more detailed application information to immediately identify whether all of the equipment in the proposed DER meets current technical standards and certifications (in which case it should qualify for fast track processing and

interconnection) and use that information to aggregate and model the impact of the DER applicant with other DERs on the utility distribution feeder and distribution and transmission systems.

The format and content of the Interstate Renewable Energy Council's August 2023 Model Interconnection Procedures offers an alternative application form that is much clearer, and collects explicit manufacturer, model and size information for every piece of equipment in the proposed DER.[1]

There should be a specific application form for use by DERs under 50 kW nameplate capacity and 25 kW export capability. Relative to the application form in the proposed rule package:

I. Applicant information (insert company information if the applicant is not an individual) – same information as in the proposed application, but modified for a generic applicant rather than a potential business entity applicant ("company").
   - Add a section collecting information on the application preparer and/or customer representative, which is likely to be a PV installer or DER aggregator.
   - Return completed application to – this should be an electronic form electronically uploaded to an on-line company portal. Paper application submitted through mail to a physical address should be feasible, but should be rare exceptions rather than the default procedure.
   - Move the Customer primary contact name and signature from page 3 to here, add email and phone details here.
   - Add meter ESIID.

II. Customer information – delete, since this appears to repeat the requested information in Part I

III. DER information – as drafted and organized, this makes it difficult to enter information on multi-technology DERs.

IV. Authorized release of information list – a DER under 50 kW may not have all these roles, so there should be an option for Not Applicable.

V. There should be a section added to address modifications to existing, operational DERs (as by adding more storage capacity or fossil generation or updating inverters)

The utilities should be required to maintain this application form on an on-line portal, so that the draft application is saved as data is entered and the full application and data are uploaded into the utility's system when the application is complete. The utility should provide near-instantaneous feedback on whether anything in the submitted application has been omitted or appears inaccurate.[2] The utility should be required to send the customer and their representative an immediate notification (online and via email) when the application has been completed properly and accepted into the utility system; that notification should include the projected dates when the utility will be required to issue its approval or non-approval of the application and how long the utility will have to interconnect the DER once it has been installed correctly at the customer premises.

**Managing applications from multiple DERs**

While DERs under 50 kW have limited and predictable impacts on a distribution feeder, larger DERs may have more complex configurations, soak up much more of available feeder capacity, and may have more complex feeder impacts than under 50 kW units. For these reasons, the Commission should give

[1] The IREC application form starts on document page 72 of the IREC report. This form could be modified for DERs under 50 kW by removing the sections for equipment that small DERs don't need.

[2] Consider automated online tax preparation software as a model for how small DER applications should be supported and processed.

interconnection priority to the small under 50 kW DER applicants, and treat larger DER applicants as the incremental units that might trigger the need for system impact studies and upgrades.

**Interconnection contracts for DERs under 50 kW**

It would be helpful to simplify the language of the utility-customer DER contract for DERs under 50 kW to improve clarity and reduce legalese. The IREC Model Interconnection Procedures (starting at document page 84) cited above offer alternate language that appears to cover all the elements in the staff proposal with admirable clarity.

**Miscellaneous items**

Definitions -- It may be useful to add National Recognized Testing Lab, IEEE (Institute of Electrical and Electronic Engineers) and UL (Underwriters Laboratory) and any other relevant national standard-setting organizations into the definitions section of these rules. It may also be helpful to define "export capacity," "nameplate rating," "secondary network" and "non-network interconnection." If export capacity assurance requires the use of dynamic export limiting measures, those should be defined and specified as well.

Certified DER equipment – Individual utilities should not have the ability to determine which DER generation, storage, protection, control or monitoring elements are appropriately certified. Such utility control creates inconsistencies and retards DER technology innovation and adoption. Instead, for at least the under 50 kW DER class, the Commission should compile and maintain a list of all certified DER equipment. Utilities and DER developers should use this list of certified DER equipment as the required reference and basis for fast track DER handling.

This list could be integrated directly into an online DER application form using dropdown lists, to improve application accuracy and evaluation.

The Commission could compile the Certified DER Equipment List by asking for the equipment lists that utilities are already using and adding recommendations from DER equipment manufacturers and vendors and the national testing labs. The Commission can publish the proposed list for review and consider feedback from utilities and other stakeholders on whether and why particular items on the list are not safe to include for fast track DER interconnection review and approval. This list should be updated at least annually to ensure that Texas' DER rules are keeping up with the rapid evolution of commercially available DER products.

Distributed Natural Gas Generation Facilities -- In the proposed draft rule §25.211 for DERs under 250 kW, the inclusion of Definition (5) (p. 27) on Distributed Natural Gas Generation Facilities (DNGGF) under 2,000 kW appears to say that the interconnection of any natural gas generator under 2,000 kW shall be handled under the procedures articulated for this small (under 250 kW) DER provision. This treatment is inappropriate because mid-sized natural gas generators intended to export into the wholesale market pose different technical challenges for safe interconnection than DERs sized under 250 kW. While expedited treatment of DNGGFs may be required under the statute, it would be cleaner and clearer to write a stand-alone rule section on DNGGFs and use that section to repeat or refer to other procedural rule elements that should apply to DNGGFs, rather than folding DNGGFs into other sections of the rule.

ISO Alternative requirements and standards – Proposed section (o) should be deleted for DERs under 50 kW nameplate capacity because those units will not be registering with ERCOT.

These comments do not address §25.210 or §25.212 except with respect to the points above.

Respectfully submitted,

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Alison Silverstein Consulting

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## EXECUTIVE SUMMARY OF INITIAL COMMENTS OF ALISON SILVERSTEIN CONSULTING ON DISCUSSION DRAFT AND ASSOCIATED FORMS FOR DER INTERCONNECTION RULES

Small residential and commercial distributed energy resources under 50 kW nameplate capacity have characteristics that merit special interconnection treatment. Most such systems are made up of standardized commercial components that meet national lab certifications and are packaged in predictable ways; they are owned and hosted by residential and small commercial customers who in most cases don't export energy to participate in the ERCOT market; most such customers do not have deep energy expertise but are applying for interconnection through a DER installer or aggregator; and these small DER packages interconnect to utility distribution systems where each individual DER has a minimal impact on the feeder to which it will interconnect.

For these reasons, the Commission should create a separate, fast-track process for DERs under 50 kW nameplate capacity and 25 kW export capacity to interconnect to utility distribution systems. These comments offer proposed rule language for that purpose. Standardization of DER interconnection requirements for DERs under 50 kW nameplate capacity across all Texas utilities (ideally including coops and munis) would make it easier, cheaper and faster for customers to invest in small DERs for host and community resilience, and easier and cheaper for DER installers and aggregators to serve them.

A proposed DER under 50 kW nameplate capacity and 25 kW export capacity should receive fast-track, two-week review processing if all the equipment in the DER package is certified under national technical standards from National Recognized Testing Labs. These DERs may include energy storage devices and a variety of generation devices, including distributed natural gas generation facilities, as long as the total DER package size is less than 50 kW nameplate capacity and 25 kW export capacity.

These comments recommend some specific details:

- The simplified, fast track interconnection application review, approval and interconnection process for DERs under 50 kW nameplate capacity should be completed within two weeks unless the utility identifies specific technical reasons why it would not be safe to approve.
- The Commission, rather than utilities, should develop the list of certified DER equipment and update it annually.
- The Under 50 kW application form should include more detailed technical information, use simpler and clearer language, and should be maintained online in a utility application portal for immediate upload and automated processing in the utility's interconnection evaluation system.
- Standard contracts for DERs under 50 kW should be simplified.
- DERs under 50 kW should receive review and interconnection priority over larger DER requests.
- There should be a separate rule section for Distributed Natural Gas Generation Facilities.