

BEFORE THE OREGON PUBLIC UTILITIES COMMISSION

Investigation into Interconnection Process and Policies

UM 2111

**COMMENTS OF THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC.
ON THE PHASE 1 SCOPING ANNOUNCEMENT**

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I. Introduction

On July 6, 2020 the Oregon Public Utilities Commission (Commission or PUC) issued Order No. 20-211, opening an investigation into its interconnection processes and policies. On February 10, 2022, the Commission Staff issued a Scoping Announcement proposing to open Phase 1 of the proceeding to address distribution-level hosting capacity analysis (HCA) thresholds, the use of advanced inverters through IEEE 1547-2018, and the flexibility of energy storage systems through a work group process. The Scoping Announcement requested written comments on Staff’s approach, including issues omitted, prioritization, phasing, and process by February 24, 2022. Pursuant to the Scoping Announcement, the Interstate Renewable Energy Council, Inc. (IREC) respectfully submits these comments and requests the opportunity to make a presentation at the March 9, 2022 workshop.

IREC is a 501(c)(3) non-partisan, non-profit organization working nationally to build the foundation for rapid adoption of clean energy and energy efficiency to benefit people, the economy and our planet. In service of our mission, IREC advances scalable solutions to integrate distributed energy resources (DERs), e.g., renewable energy, energy storage, electric vehicles, and smart inverters, onto the grid safely, reliably, and affordably. IREC supports the creation of robust, competitive clean energy markets, though IREC does not have a financial stake in those markets. IREC is an unaffiliated, independent public interest organization, whose vision is a 100% clean energy future that is reliable, resilient and equitable. IREC works across numerous diverse states to improve the rules, regulatory policies and technical standards that enable the streamlined, efficient and cost-effective interconnection of DERs. IREC publishes Model Interconnection Procedures that compile the best practices developed by states across the country into one set of procedures.¹

IREC supports prioritizing the three topics identified in the Scoping Announcement. To fully address these three topics, IREC anticipates the Commission will need to revise almost every section of the Small Generator Interconnection Rules in OAR 860-082 (SGIP). For example, facilitating the use of energy storage systems with advanced inverters that limit export will require adding certain concepts and revising certain definitions used throughout the rules. Similarly, unlocking the full potential of limited-export systems and HCA requires revising the

¹ Interstate Renewable Energy Council, *Model Interconnection Procedures* (2019), <https://irecusa.org/resources/irec-model-interconnection-procedures-2019/>.

rules for interconnection screening and study. When the work group considers changes to rule language, the Commission may want to allow all parties to propose changes to that section's rule language at the same time, even when unrelated to the three priority topics. This will result in a more efficient process, as the Commission will not need to revise the same rule sections multiple times in this proceeding.

IREC agrees with the Scoping Announcement that most interconnection issues can be addressed in a single work group, however Staff should consider establishing a separate IEEE 1547-2018 work group so that parties can assign appropriate staff to cover that topic.

II. To prevent unnecessary duplication of efforts, the Commission should first review the value of separate interconnection rules for net metering projects.

IREC encourages Commission to first decide if all small projects should use SGIP or if the Commission plans to retain a separate interconnection process for net metering projects in OAR 860-039 (Net Metering Rules). If the Commission decides to use SGIP for all small projects, the work group could focus its efforts on making the Tier 1 and Tier 2 process the most efficient possible for all small projects. On the other hand, if the Commission decides to retain the interconnection requirements of the Net Metering Rules, the work group will need to develop separate procedures for the interconnection of small energy storage projects in SGIP and the Net Metering Rules, or draft language that incorporates the same process in both rules.² To prevent unnecessary duplication of effort, IREC recommends that the Commission first decide if it plans to retain a separate interconnection process in the Net Metering Rules or use a single process for all small projects.

III. IREC supports prioritizing the three topics identified in the Scoping Announcement and allowing parties to propose revised rule language on related topics.

The Commission should instruct the work group to first consider the three topics identified in the Scoping Announcement and set a date by which it should conclude its first phase of work. However, the Commission should not prohibit parties from raising other topics where parties offer specific modifications to a section of the rule the work group is revising. For example, IREC is contemplating offering straightforward modifications to SGIP's reporting requirements and adding a supplemental review process designed to increase transparency and decrease delays.

Whether an interconnection work group efficiently reaches a conclusion is typically not based on the number of issues the group considers, but rather the way it considers the issues. IREC has found that work groups operate efficiently when parties present specific proposals for modifications to rule language, followed by discussion; then other parties may present specific counterproposals concerning the same rule language followed by discussion. In contrast, work groups that discuss hypothetical concepts tend to have extended discussions without reaching conclusions. Therefore, IREC recommends that the Commission allow parties to propose

² The electric system impacts, and the hosting capacity of the line, are the same if a project is compensated via the net metering program or a different tariff.

specific modifications to the SGIP rule language and discourage vague discussions of general concepts. Such guidance will focus the work group's efforts more effectively than limiting the issues to be considered.

IV. To guide the discussion on hosting capacity thresholds, the Commission should ask the work group to describe which screens a hosting capacity analysis can supplant.

One reason HCAs were originally developed was to improve the interconnection screening process.³ The goal was to replace or supplement interconnection screens that use a conservative approximation of feeder conditions with a more sophisticated power flow simulation of the actual conditions on the feeder. HCAs provide a more accurate assessment of system impacts than is currently used in several of the more commonly failed screens.

For example, the California Public Utilities Commission authorized the use of HCA results instead of the 15% screen.⁴ The 15% screen was designed as a conservative rule-of-thumb based on generic feeder assumptions to approximate when the increased penetration of DERs on a feeder could trigger voltage, thermal, or protection problems.⁵ In contrast, the HCA actually examines if the project will result in any specific voltage, thermal, and protection problems based on the historic load at that precise node rather than using a heuristic that approximates problems based on a generic feeder. As a result, in certain circumstances new DERs can interconnect safely using the fast track process even when the project would have failed the legacy 15% screen, and in some cases it may flag an issue where the more generic screen failed to.

To focus the work group's efforts, the Commission should ask the work group to describe which screens the selected hosting capacity analysis can supplant and provide rule language that accomplishes this goal.

³ See CA Pub. Util. Comm, Dkt. R.14-08-013, Decision No. 17-09-026, Decision on Track 1 Demonstration Projects A (Integration Capacity Analysis) and B (Locational Net Benefits Analysis), at 27 (Oct. 6, 2017) (HCA is called Integration Capacity Analysis or ICA in Calif.).

⁴ CA Pub. Util. Comm., Dkt. R.17-07-007, Interconnection of Distributed Energy Resources and Improvements to Rule 21, Decision No. 20-09-035, Decision Adopting Recommendations from Working Groups Two, Three, and Subgroup (Sept. 30, 2020) (Issue 8m replaces Screen M with ICA results).

⁵ Robert J. Broderick & Abraham Ellis, *Evaluation of Alternatives to the FERC SGIP Screens for PV*, Interconnection Studies, Photovoltaic Specialists Conference (PVSC), 2012 38th IEEE, 10.1109/PVSC.2012.6317712; Michael Coddington, et al., *Updating Interconnection Screens for PV System Integration*, National Renewable Energy Laboratories (Feb. 2012), <https://www.nrel.gov/docs/fy12osti/54063.pdf>.

V. IREC supports the Commission’s inclination to swiftly adopt IEEE 1547-2018, allowing Oregon to take advantage of the capabilities of inverters to mitigate grid impacts and allow potentially higher penetrations of DERs at a lower cost.

The Scoping Announcement proposes to prioritize implementing IEEE 1547-2018 and policies needed to incorporate advanced inverters via a work group process. The Scoping Announcement proposes to convene a single work group on all the Phase 1 topics “due to the issues and the interested parties overlapping across items.” IREC agrees that the Commission should convene a work group, however, adopting IEEE 1547-2018 requires consideration of topics more technical in nature than most other interconnection issues. As a result, IREC has found that fewer parties often participate in these discussions, and many parties assign specialized engineering staff to participate in IEEE 1547-2018 discussions. For example, while IREC’s attorneys typically lead our work in interconnection work groups, IREC’s engineers typically lead our work on IEEE 1547-2018 implementation. Therefore, it may be reasonable for the Commission to establish a separate 1547-2018 work group, or identify separate meetings for the 1547-2018 implementation work so that parties can assign appropriate staff to cover this topic. IREC recommends the Commission consider using the following basic process:

- 1) Identify the stakeholder work group to engage in the adoption discussions, including, but not limited to, Commission staff, utilities, DER developers, regional reliability coordinators, DER advocates, consumer advocates, 1547 standard experts, and technical assistance providers.⁶
- 2) Plan a schedule for addressing all 1547 adoption topics within the work group, including, but not limited to, those described below.
- 3) Engage the work group to discuss the conceptual topics and decision points, with the goal of gaining consensus on which decisions will be addressed by formal guidance.
- 4) Determine the suitable location for formal guidance, whether within the interconnection rules, another tariff, Commission guidance document, or utility documentation.
- 5) Determine the timeline for implementation. For example, IREC recently surveyed inverter manufacturers and many expect availability of 1547-2018 compliant equipment in April 2023.
- 6) Identify and engage a writing group to formalize conceptual agreement and decision points within the draft guidance document(s).
- 7) Distribute the draft guidance document(s) to the work group for one or more rounds of comment and revision.
- 8) Shepherd the guidance document(s) through any necessary regulatory process for final inclusion in the appropriate rules, tariffs, or other documentation.

⁶ Experts and technical assistance may potentially be provided by the National Renewable Energy Laboratory, Sandia National Laboratory, Electric Power Research Institute, IREC or others.

Items 4 and 5 would not necessarily occur in sequential order, and likely should be discussed throughout the process.

IEEE 1547-2018 includes many new requirements compared to 1547-2003, including voltage and frequency ride-through, voltage regulation, frequency regulation, interoperability (communications), power quality, intentional islands (microgrids) and new concepts including the Reference Point of Applicability. The utility and applicant should have the same understanding of how these requirements apply to a particular project such that it can be interconnected successfully, and thus the requirements should be spelled out clearly in a technical interconnection requirements document.

VI. IREC supports modernizing Oregon’s interconnection rules to account for the flexibility provided by energy storage systems.

IREC is currently leading a three-year initiative funded by the Department of Energy to develop a comprehensive toolkit and guidance document for the interconnection of energy storage and solar-plus-storage technologies. The Building a Technically Reliable Interconnection Evolution for Storage (BATRIES) initiative is a collaboration between IREC, the Electric Power Research Institute, PacifiCorp, and several other DER industry associations and utilities.⁷ Together the BATRIES team has developed model rule language for energy storage interconnection that are ripe for inclusion in Oregon’s interconnection rules. IREC expects to publish the final BATRIES Toolkit in late March 2022 and looks forward to sharing it with the Commission and stakeholders at that time.

VII. Conclusion

IREC thanks the Commission for the opportunity to submit these comments and looks forward to future discussions regarding the modernization of Oregon’s interconnection rules.

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⁷ The BATRIES initiative partners are the: California Solar and Storage Association; Electric Power Research Institute; Energy Storage Association; New Hampshire Electric Cooperative; PacifiCorp; Solar Energy Industries Association; and Shute, Mihaly & Weinberger LLP.