

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: April 19, 2022**

REGULAR X CONSENT EFFECTIVE DATE N/A

DATE: April 12, 2022

TO: Public Utility Commission

FROM: Ted Drennan

THROUGH: Bryan Conway, Caroline Moore, and Scott Gibbens **SIGNED**

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF:
(Docket No. UM 2111)
Request to adopt the scope for Group 1 issues in the Interconnection
Modernization Investigation.

STAFF RECOMMENDATION:

Staff recommends the Oregon Public Utility Commission (OPUC or Commission) adopt the Staff Final Proposed Scope for Group 1 issues in the Interconnection Modernization Investigation.

DISCUSSION:

Issue

Whether the Oregon Public Utility Commission adopt the final scope for Group 1 issues in the Interconnection Modernization Investigation.

Applicable Rule or Law

Under ORS 756.515(1), whenever the Commission believes that an investigation of any matter relating to any public utility or telecommunications utility or other person should be made, the Commission may, on its own motion, investigate any such matter.

Analysis

Background

Commission Order No. 20-211 opened Docket No. 2111 as an umbrella docket to, “consider the broad range of interconnection issues in a manner that is inclusive of all generator types; organized into manageable segments; and builds off of existing efforts and pilot activities.”¹ At the time the docket was opened, the range of potential issues were placed in three broad categories:

- **Cost:** prohibitive interconnection upgrade costs assigned to individual generators in serial queue order with limited opportunity to vet utility studies, propose alternative solutions, or otherwise consider modern standards and best practices;
- **Certainty and control:** limited ability to predict and mitigate interconnection costs through siting, sizing, and project design;
- **Process:** administrative practices and enforceability measures (or lack thereof) that cause delays, increase costs, and create additional uncertainty for generators and utility interconnection Staff.²

On February 11, 2022, Staff released a scoping announcement containing Staff’s approach to grouping and prioritizing the wide range of interconnection issues that have surfaced through dockets, disputes, consumer complaints, and waiver requests (See Attachment A for Staff’s full proposal). Stakeholders including Interstate Renewable Energy Council, Inc. (IREC), PacifiCorp, Portland General Electric (PGE), Oregon Solar + Storage Industries Association (OSSIA), and the Interconnection Trade Associations (Trade Associations) made up collectively of: Community Renewable Energy Association (CREA), Northwest & Intermountain Power Producers Coalition (NIPPC), and Renewable Energy Coalition (REC) filed comments on the scope on February 24, 2022, followed by a Staff-led workshop on March 9. There was a second workshop on March 28, 2022, to discuss additional Staff questions posted March 11, 2022.

Staff’s initial prioritization strategy was informed by several developments since the docket was opened including new legislation, *i.e.*, HB 2021 (2021) and HB 3141 (2021), and other incidents such as extreme weather events, driving smaller-scale and community-based DERs, resiliency driven projects (e.g., microgrids), and the need for more flexible non-emitting resources to support deep decarbonization requirements.

¹ See Docket No. UM 2111, Commission Order No. 20-211, July 6, 2020, Appendix A, p. 5.

² *Id.*, p. 6.

Staff's initial proposal looked to prioritize the underlying methodologies used to identify interconnection upgrades and readiness for community, resiliency, and flexible projects through addressing the following issues first:³

- Modernizing the screening and interconnection study thresholds, and the technologies considered when an upgrade is needed.
- Incorporating updated standards such as IEEE 1547-2018.
- Incorporating advanced inverters, storage, islanding, and other modern configurations.

The original proposal put the remaining issues into the following groups, to be addressed sequentially:

- Group 2: Focused on cost allocation, any remaining issues related to the identification of upgrades and costs.
- Group 3: Focused on generator ability to manage costs.
- Group 4: Focused on efficient processes and predictability.

Feedback on Initial Proposal

The comments received from Stakeholders were generally supportive of Staff's proposal of a phased approach that addresses the more pressing needs first. Parties did not identify major omissions from Staff's issues list, but many suggested prioritizing additional issues. Staff also appreciates parties' suggestions on how to structure the work group and work through the wide range of potentially contentious issues. Staff was able to answer most of the clarifying questions raised in initial comments during workshops, too.

Interconnection process

Most commenters advocated for higher prioritization of the procedural issues Staff included as Group 4 issues. For example, PGE stated in comments that, "addressing the "Interconnection Process" issues at the outset of the docket will help avoid disputes, ensure that interconnection requests are timely processed, and establish predictable interconnection timelines, thus benefiting customers navigating the interconnection process."⁴ In addition, OSSIA highlighted that "cost increases and delays are the two main reasons that solar projects don't move forward and the two should be addressed together and should have higher priority."⁵

³ See Appendix A for further details on Staff's initial proposal.

⁴ PGE's Response to Scoping Announcement, p. 1.

⁵ OSSIA UM 2111 Interconnection scoping comments, p. 2.

Staff response: Given the broad support, Staff is open to accelerating interconnection process issues above the Group 2 and 3 issues in Staff's initial proposal, but not Group 1. Based on the issues raised in various dockets, complaints, and disputes, process improvements are more likely to provide the intended benefits to generators after the Group 1 issues are addressed i.e., Staff is concerned that process changes will not actually prevent delays or lower costs if the results of the interconnection screens and studies are heavily contested. Workshop discussion highlighted that the procedural issues will not be easy to resolve without a Staff-led process, and Staff has clarified that it does not have the ability to add all of these issues to Group 1.

Transparency

OSSIA commented that, "[i]t is possible that many if not most interconnection issues could be more easily solved if there were a high level of transparency and access to data regarding the utilities system, costs, equipment, equipment ratings, and process."⁶ Parties also asked important clarifying questions about the relationship between UM 2111 issues and the ongoing discussion of Hosting Capacity Analysis (HCA) in the Distribution System Planning (DSP) Docket No. UM 2005.

OSSIA and PGE suggest that HCA methodology has momentum in UM 2005 and should remain a topic for that investigation. PacifiCorp further suggests that DSP is the venue where utilities will receive direction about how sophisticated of a hosting capacity analysis they should invest in, but that UM 2111 policies for how interconnection screens and analysis are performed needs to eventually inform the HCA requirements developed in the DSP docket.

IREC explained that HCA has several use cases. The interconnection use case involves guiding site selection and system design and, in some jurisdictions, use in the interconnection process's fast track screens the interconnection process. The distribution planning use case is for identifying constraints that need to be understood and addressed by DSP. IREC provided a summary of the key decisions that the Commission should make when establishing an HCA for a use case:

- Determine whether implementation should be phased, and if so, how.
- Identify HCA data validation methods that should be used.
- Select the HCA methodology to be used for the interconnection use case.
- Determine how frequently the HCA should be updated.
- Select the number of load hours that will be evaluated in the HCA.

⁶ OSSIA UM 2111 Interconnection scoping comments, p. 1.

- Determine whether the HCA will evaluate hosting capacity for load, generation, or both DER types.
- Define how granular the analysis will be and how the results of the analysis will be shared.
- Select the limiting criteria and thresholds to be used for the interconnection use case.
- Determine what HCA data will be publicly accessible and how it will be provided.
- Evaluate any security risks associated with sharing HCA data and determine how to manage those risks.
- Evaluate whether sharing of HCA data creates customer privacy issues and how to manage those risks.

IREC also notes that HCA methods may need to vary between use cases and warns that addressing HCA decisions in different dockets can lead to duplication. If the HCA work is bifurcated between dockets, IREC suggests that the work groups establish similar schedules and that access to data may be more appropriate for the DSP discussion to align with Staff's description of the separation of work between UM 2111 and DSP.

Figure 1. Staff's overview of the division of efforts between UM 2111 and DSP from the DSP investigation⁷

Docket No. UM 2111	DSP
Focus on underlying interconnection practices	Focus on transparency of system data
Examine the underlying data sources that will be used in the interconnection screening and study process	Consider the system data that is published
Examine the underlying methodologies that will be used in the interconnection screening and study process	How the system data is published
	System investments required to collect and publish the system data

Staff response: Staff believes that HCA roll out should occur under DSP and can be phased so that the HCA methods can be enhanced as UM 2111 Group 1 issues are resolved. Staff agrees the interconnection modernization investigation should not disturb the momentum of the interconnection transparency and planning use case discussions underway in DSP, but recognizes that the methods used to screen and study projects that apply for interconnection should

⁷ Docket Nos. UM 2196, UM 2197, UM 2198, Staff report, February 28, 2022, p. 30.

be reviewed in UM 2111. IREC's first key decision is whether the HCA should be phased. The options provided for this answer include:

- Full rollout of HCA at one time*
- Phased implementation starting with a map that includes a narrow set of HCA results and includes more features over time*
- Phased implementation starting with a map that includes only basic distribution system data, with HCA results to be included later⁸*

Staff believes that phasing is required in order for HCA conversations to continue in DSP without investing too much resource in analysis that will not be reflective of the interconnection review. DSP stakeholders can continue to discuss the majority of the HCA key decisions; however, the following key decisions are likely to change following resolution of UM 2111 Group 1, at minimum:

- Select the HCA methodology to be used for the interconnection use case*
- Select the number of load hours that will be evaluated in the HCA*
- Select the limiting criteria and thresholds to be used for the interconnection use case*
- Identify HCA data validation methods that should be used*

A joint meeting of DSP and UM 2111 stakeholders can consider the appropriate approach to phasing the HCA roll out to account for updated screening and study methods.

In addition to the data transparency provided in HCA, OSSIA raised the near-term benefit of access to data regarding the utilities system, costs, equipment, equipment ratings, and process. Staff believes that this is an issue that stakeholders could try to reach agreement on and bring a proposal forward concurrent with Staff's efforts to address Group 1 issues. If parties cannot agree, transparency issues can be addressed with the procedural issues that Staff is proposing to accelerate ahead of Cost Allocation Issues (Staff's initial Group 2) and Generator's Ability to Manage Costs (Staff's initial Group 3).

Generator ability to manage costs

The Interconnection Trade Associations believe that issues related to cost control are the highest priority to address first, reasoning they are heavily litigated, demonstrating their importance. These issues are mostly reflected in Staff's Group 3 issues:

Generators' ability to perform studies and construct upgrades; and ensuring there is an efficient, effective, and accessible dispute resolution process(es) for all generator types,

⁸ IREC, Key Decisions for Hosting Capacity Analyses, Sept. 2021, pp. 10-12.

and any other processes to ensure sufficient ability to verify and challenge interconnection studies and results.

OSSIA further responded to Staff's follow-up questions about prioritization by stating "while improving the analysis process and transparency would be helpful, without a way to give interconnection customers a full and active role in the process, the interconnection process will still be a utility driven process without a way for a specific project to challenge, verify and contest utility findings."

The Interconnection Trade Association and OSSIA also advocated for high prioritization of Staff's Group 4 issue of whether to adopt a requirement that utilities must be reasonable, non-discriminatory and act in good faith in the interconnection process.

Staff response: Staff is concerned that prioritizing the issues identified as paramount by the Trade Associations will not actually prevent delays or lower costs in the interconnection process. Staff believes prioritizing issues related to study methods and transparency will have a greater impact costs and delays whereas the issues identified by the Trade Associations would not minimize disputes, but change their nature or how they are resolved.

Cost allocation

OSSIA suggests that cost allocation between generators and other system beneficiaries should be considered when discussing the identification of upgrades in Group 1.

Staff response: Staff agrees that this issue is closely related to the identification of upgrades and may be touched on in Group 1 discussions. Staff cannot take on a comprehensive review of this issue as part of Group 1, though.

O&M requirements

PacifiCorp and the Interconnection Trade Associations suggest inclusion of an issue to address the party responsible for ensuring the continuation of current quality of service standards. This would be, "Maintenance of and responsibility for customer quality of service."⁹

Staff response: Staff appreciates the parties raising this issue and finds that it may fit best in the cost allocation issues group since it is about the allocation of responsibility between generators and the utility (originally Staff's Group 2).

⁹ Ibid.

Rule Structure

In addition to having no rules or orders that apply specifically to generators between 10 and 20 MW, IREC notes that the interconnection rules that apply to net energy metering (NEM) facilities and small generators are in separate divisions and that the LGIP is not in rule but is in Commission order. IREC proposes that a Commission decision to consolidate its interconnection policies into a single division early in the UM 2111 investigation could streamline the process, requiring changes to one set of rules, as opposed to two sets.

Staff response: Staff is supportive of the suggestion; however, this topic has not been well vetted by parties. Staff proposes to discuss further in the work group and bring this issue to the Commission by the time it launches the second group of issues.

Procedural suggestions for the investigation

In comments and workshops, parties discussed the likelihood that work groups could form consensus on these issues. This led to recognition of points made by IREC that 1) Commission deadlines for bringing issues to them for decision would be helpful; and 2) Staff should try to articulate a process by which issues will be brought to the Commission when productive discussion within the work group ends.

Parties are supportive of the workgroup concept for moving the investigation forward. PGE suggests modeling on the structure for UM 2005.¹⁰ The Interconnection Trade Associations, “believe working groups should identify which issues can be resolved through a collaborative working group process and which cannot.”¹¹ OSSIA believes a pre-meeting or scoping meeting should be held to discuss issues to be considered in the workgroup. PacifiCorp believes the workgroup structures will be dependent on the issue at hand. The most extensive comments here came from IREC, and had many helpful suggestions related to the work group process including:

- Initial meeting to discuss topics, goals and interested stakeholders.
- Let parties collaborate on potential rule change proposals – circulate prior to next meeting.
- Additional meeting to discuss proposal.
- Parties provide counterproposal prior to third meeting.
- Third meeting to discuss counterproposals.
 - In cases without consensus, Stakeholders to provide final proposals with justification.

¹⁰ PGE Comments dated March 24 at page 3.

¹¹ Interconnection Trade Association comments dated March 25 at page 6

- Staff submits final report documenting process, detailed enough for the Commission to make a final decision.

In comments, IREC also notes that issue resolution in Group 1 may require revision of the Commission's rules related to interconnection. If rules are revised, IREC suggests allowing changes to all sections of the rules, not just the section specifically related the group of issues at hand, reasoning it will lead to a more efficient process overall.

IREC suggests a separate work group for IEEE 1547-2018 due to the highly technical nature of the standards. This type of issue generally requires specialized engineering staff to participate in implementation work required for adopting the new standards. IREC proposes an eight-step basic process for this work. They include a list of potential experts to help with the technical details including: NREL, Sandia National Laboratory, EPRI, IREC, and others.¹²

Finally – IREC pointed to resources that can help the work group work through several issues. First, the *BATRIES Toolkit and Guidance for the Interconnection of Energy Storage and Solar-Plus-Storage* which they state, “provides solutions to regulatory and technical barriers to the interconnection of energy storage and solar-plus-storage systems to the distribution grid.” This was developed with input from IREC, the Electric Power Research Institute, PacifiCorp, and others.

Staff response: Staff agrees with parties that the workgroup structure is the best way to move the investigation forward at this point. Staff agrees that a kick-off meeting should be used to scope the need for sub groups and further articulate the issues to be addressed in Group 1. IREC's approach to working through issues in the work group seems to be straightforward; Staff will endeavor to follow this approach. Depending on the complexity of the issue(s) at hand, there may be need for more than three meetings. Staff will also look to use independent third-party sources when available, especially with highly technical issues as subject matter experts for presentation, or facilitation as needed.

Staff appreciates IREC's comments related to allowing recommendations to be made for interconnection rules other than those specifically related to the topics in the groupings. Staff is focused on discussing methods for interconnection analysis in Group 1. To the extent that rule changes come up in this discussion Staff will track all suggestions and manage their resolution as needed.

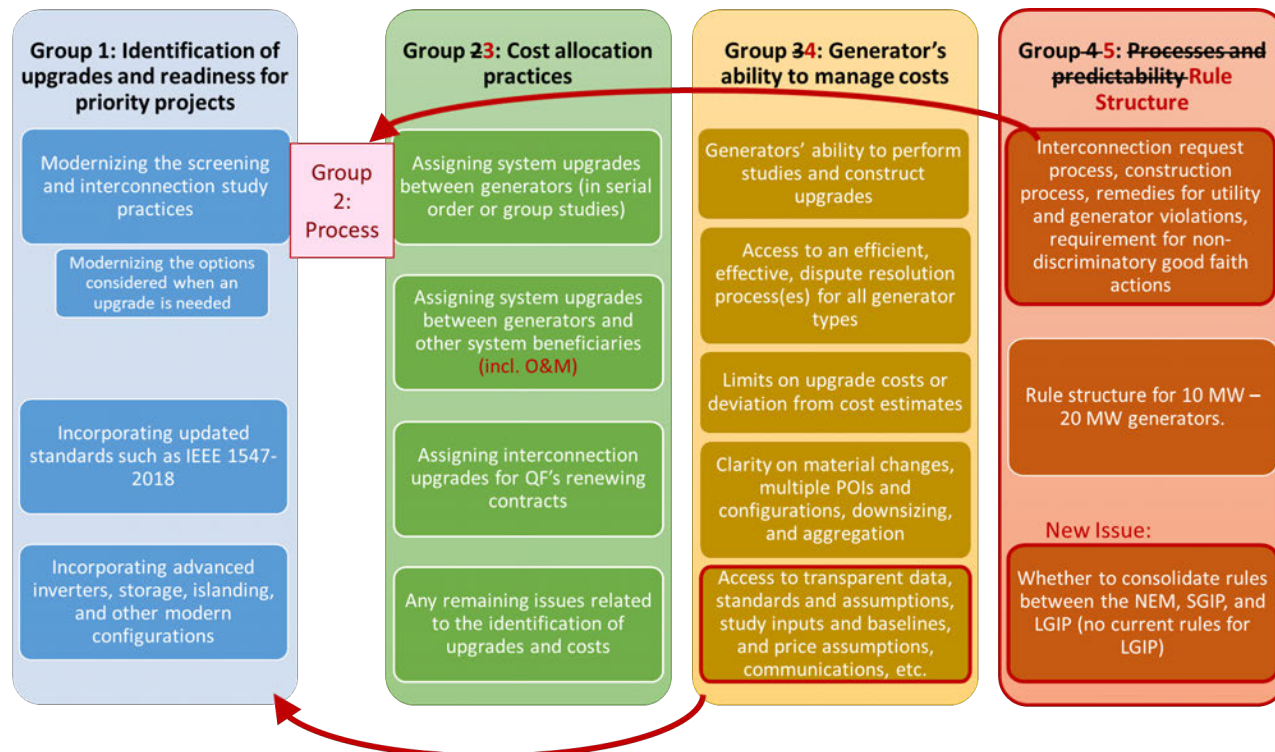
¹² IREC comments dated February 24 at page 4.

Recommended Investigation Framework

Staff appreciates all the thoughtful comments submitted, as well as the discussion at both of the scoping workshops. The stakeholder input has been incorporated into Staff's revised proposal. Staff preferred approach is similar to the initial approach, with some modifications and clarifications described above. Staff continues to believe a phased approach looking at issues sequentially is the appropriate approach. Staff also believes the proposed Group 1 issues remain the most important to address first, with some adjustments.

Figure 2 below shows Staff's revised UM 2111 scope proposal. This is based on feedback received, in addition to legislative priorities. As is shown, Staff has elevated issues related to the interconnection process from Group 4 to a new Group 2 issue list. The originally labeled Group 2 and Group 3 are now Group 3 and Group 4 respectively. Data transparency has been moved into Group 1 issues from the original Group 3 issues list. This transparency is in line with the investigation of the appropriate screening thresholds.

Figure 2. Staff's Final UM 2111 scope proposal



Work Group Process

The work groups will be Staff-facilitated, and meet on a monthly basis, at a minimum. The process will look to have an initial meeting to help identify subgroups and roles for participants. Staff finds the IREC suggestion to address IEEE 1547-2018 issues in its own workgroup intriguing and would like to see if Stakeholders likewise agree at the initial meeting. In addition to roles, approaches, roadmaps, will be developed for moving the issues forward to resolution.

Staff intends to follow the IREC proposed process to bring issues to the Commission for decisions. There will be attempts to reach consensus on as many issues as possible. Issues that are not agreed on will be brought to the Commission, with recommendations, for additional guidance. As discussed above, Staff is amenable to a Stakeholder-led process for at least a subset of issues, if Stakeholders agree. To ensure progress, Staff will report back to the Commission on progress in six months, and target completion of Group 1 issues in twelve months. Note, if there are consensus issues these will likely be brought to the Commission when ready, they will not be limited to six-month reports.

Staff is also looking for other, external resources that may aid in resolving the Group 1 issues. Staff has had discussion with NARUC, who earlier this year offered an opportunity to apply for NARUC-NIST Smart Grid technical assistance. Support may include opportunities for subject matter experts, as well as opportunities to optimally structure the workgroups. This assistance with the Group 1 issues can also be leveraged for later Group issues. In addition to NARUC, Staff is looking to National Renewable Energy Laboratory (NREL), who have experience with the IEEE 1547 standards.

Next steps

Upon Commission approval, Staff will convene a kick-off meeting for the initial work group by June 30, 2022. This meeting will help identify subgroups and roles for participants. In addition to roles, approaches, roadmaps, will be developed for moving the issues forward to resolution.

The overall approach is to use assistance from stakeholders and independent external groups as available to help this investigation proceed on a timely basis, resolving issues, and to ensure interconnection issues are not an impediment to successful implementation of the Oregon legislature's objectives.

Conclusion

In line with the discussion above, Staff recommends addressing Group 1 issues in a work group setting with regular reports to the Commission at a minimum of six-month intervals. Issues to be considered in the first phase of the investigation include:

- Modernizing the screening and interconnection study practices;
- Incorporating advanced inverters, storage, islanding, and other modern configuration;
- Incorporating IEEE 1547-2018 standards; and
- Access to transparent data about utility standards, costs, and study assumptions per OSSIA's comments (Stakeholder-led).

PROPOSED COMMISSION MOTION:

Adopt Staff's Final proposed scope for Group 1 issues in the Interconnection Modernization Investigation.

Docket No. UM 2111
April 19, 2022
Appendix A
Page 1



February 10, 2022

UM 2111 Scoping Announcement

UM 2111 Stakeholders:

This announcement describes Oregon Public Utility Commission (OPUC) Staff's plan to resume activities under the UM 2111 Investigation into Interconnection Process and Policies, including a proposed scope and process, as well as, a comment opportunity and a workshop invitation.

Background

Commission Order No. 20-211 opened [Docket No. 2111](#) as an umbrella docket to, "consider the broad range of interconnection issues in a manner that is inclusive of all generator types; organized into manageable segments; and builds off of existing efforts and pilot activities."¹

At the time the docket was opened, the range of potential issues were placed in three broad categories:

- **Cost:** prohibitive interconnection upgrade costs assigned to individual generators in serial queue order with limited opportunity to vet utility studies, propose alternative solutions, or otherwise consider modern standards and best practices;
- **Certainty and control:** limited ability to predict and mitigate interconnection costs through siting, sizing, and project design;
- **Process:** administrative practices and enforceability measures (or lack thereof) that cause delays, increase costs, and create additional uncertainty for generators and utility interconnection Staff.²

Scoping process

Included in this announcement is Staff's proposal for addressing the interconnection issues. This plan looks for a phased approach to address issues Staff considers priorities, with a desire to target root cause solutions and remove barriers for the generator types at the focus of state policy. Staff is looking for stakeholder's concise comments on Staff's approach, including: any issues omitted, issue prioritization, phasing, and the overall process. Staff would appreciate comments be limited to five pages if possible.

Following receipt of comments will be a workshop to discuss both the plan scope, as well as the issues to be addressed. See Attachment A for workshop details. Additionally, Staff would like to extend an invitation to stakeholder groups to make a brief (15 minutes) presentations on their comments at the workshop, if desired.

After the issues workshop Staff will finalize its plan for moving forward with the docket. This will be presented to the Commission at a public meeting for the Commission to opine on the proposed approach. Staff's schedule for the relaunch phase is shown in the table below. This timeline will get the investigation to the starting point.

Date	Activity
Feb 11	Release Relaunch Announcement

¹ See Docket No. UM 2111, Commission Order No. 20-211, July 6, 2020, Appendix A, p. 5.

² Id, p. 6.

February 11, 2022

Feb 24	Comments on Issues, Prioritization, Phase 1 work group process from Stakeholders
March 9	Workshop to discuss issues lists and prioritization
April 5	Public Meeting for Commission to opine on Staff's suggested approach
April →	Work sessions scheduled

Staff looks forward to working with stakeholders to develop a comprehensive issues list and prioritization strategy for UM 2111 in the coming months.

Scope and Process Proposal

This section provides a straw proposal to tackle the wide range of interconnection issues raised in different venues over many years. A detailed inventory of the interconnection issues raised by stakeholders in specific dockets is provided in Attachment B. This reflects Staff's understanding of the issues identified on the record to date; Staff does not take a position on any of the issues at this time and looks forward to further refining the issues list with Stakeholders.

Prioritization

Several developments since UM 2111 opened in 2020 should be considered in prioritizing issues for this investigation. House Bill 2021 requires electric utilities to decarbonize their retail electricity sales by 2040 in a manner that provides direct benefits to local communities. The bill includes elements such as \$50 million in grant funds for community renewable energy projects and programs for local governments and utilities to work together to develop green products that meet local goals.

Other legislation passed in the session included House Bill 3141 which expanded Public Purpose Charge (PPC) uses to include "distribution system-connected technology" (DSCT). The interim definition of DSCT will begin directing PPC funds to smart inverters and battery energy storage systems used at customer sites.³

Since the docket was opened there have been other developments pointing to the need to prioritize with UM 2111. The Pacific Northwest, in addition to other areas of the country are seeing more instances of extreme weather, such as last summer's unprecedented heat wave or the potential for de-energization to mitigate wild fire risk. This has drawn attention to value of more resilient distributed resources, such as micro-grids. The UM 2005 investigation into distribution system planning, and subsequent filed plans that provide some transparency into the state of the system for interconnection. UM 2005 has explored hosting capacity analysis, UM 2111 will look to further some of those discussions.

Relaunching Docket No. UM 2111 will require careful issue identification and prioritization. Based on recent developments, and a desire to target root cause solutions that will help a range of generator types, Staff proposes the following prioritization strategy to begin tackling major interconnection issues:

- **Root cause:** Issues that address the root causes of interconnection barriers, complaints, and disputes; Issues that reduce interconnection barriers across multiple state-jurisdictional generator types.
- **Customer and community benefits:** Issues that reduce barriers to projects that provide direct customer and community benefits, including resiliency-focused projects, small-scale projects,

³ See Docket No. UM 2195, Staff Report, November 24, 2021.

February 11, 2022

and community-based projects; issues that best position utilities to interconnect and help maximize the impact of incentives and grant opportunities.

- **Decarbonization:** Issues that will help enable smarter, flexible resources that minimize the costs and maximize the benefits of decarbonization, e.g., fossil dispatch offset, grid services, T&D avoidance.

Issue grouping

With the extensive list of issues, Staff suggests a phased approach to the docket. Below are Staff's proposed issue groups in order of prioritization. The first set of issues listed above would comprise Phase 1 of the docket. Phase 2 and beyond would be comprised of remaining issues in digestible chunks, which may be tackled in sequence or, depending on resources and current priorities, could address more than one issue group in a subsequent phase. Staff would continue to prioritize issues with the biggest impact and/or the most consensus. The consensus approach would look for issues where stakeholders agree on potential solutions, then move forward with finalization of said solutions.

- **Group 1: Focus on underlying methodologies and ensuring readiness for the types of projects being promoted by state policy (community, resiliency, flexible decarb)**
 - Ensuring rules, policies, and practices for identification of upgrades account for modern technologies and industry best practices including, but not limited to:
 - Modernizing the screening and interconnection study practices
 - Incorporating updated standards such as IEEE 1547-2018⁴
 - Incorporating advanced inverters, storage, islanding, and other modern configurations
 - Modernizing and right-sizing the upgrade options considered when an upgrade is needed
- **Group 2: Focused on cost allocation practices**
 - Assigning system upgrades between generators, including use of cluster studies
 - Assigning system upgrades between generators and other system beneficiaries (utilities and customers), e.g., more clarity on "reasonable costs" to be borne by a generator
 - Assigning interconnection upgrades for QF's renewing contracts
 - Explore any additional improvements to rules and utility practices for identification of upgrades that account for modern technologies and industry best practices that weren't addressed in Group 1
- **Group 3: Focused on generator ability to manage costs**
 - Generators' ability to perform studies and construct upgrades
 - Ensuring there is an efficient, effective, and accessible dispute resolution process(es) for all generator types, and any other processes to ensure sufficient ability to verify and challenge interconnection studies and results
 - Limits on upgrade costs or deviation from cost estimates
 - Clarity on material changes, option to request multiple POIs and other configurations, downsizing, and aggregation (includes net metering)
 - Requirements for transparent communications, access to in-person meetings with engineers, professional engineer stamps, access to standards and assumptions, study inputs, baseline data, and price assumptions
- **Group 4: Focused on efficient processes and predictability**

⁴ See <https://site.ieee.org/sagroups-scc21/standards/1547rev/>.

February 11, 2022

- Interconnection process
 - Predictability and enforcement of timelines, responsiveness, and preventing congestion in the queue. Includes publishing interconnection application processing metrics.
 - Predictability, speed, and enforcement of construction timelines
 - Remedies for utility and generator violations of rules/processes, reasonable, non-discriminatory, good faith actions.
- Rule structure
 - Whether to adopt rules for 10 MW – 20 MW Oregon jurisdictional generators.
 - Whether to continue to have separate rules for NEM, SGIP and separate LGIP.
- **Parallel process: Issues that will be addressed occur in other processes**
 - UM 2032:
 - Utilities requirement for QFs to interconnect under Network Resource Interconnection Service (NRIS).
 - Assigning network upgrades to generators without reimbursement
 - Some exploration of “reasonable costs” to be borne by a generator
 - Distribution System Planning
 - How to account for interconnection constraints in utility system planning activities
 - Providing pre-emptive data and visualizations necessary to predict and/or mitigate upgrades through siting, sizing, and project design (a.k.a. Hosting Capacity Analysis)
 - AR 631
 - Power Purchase Agreement terms and conditions will have some impact on:
 - Study and construction timelines for generators
 - Requirements to hit milestones and avoid congestion in the queue
 - Modifying point of interconnection (POI) and other configurations

Approach to Group 1 Issues/Phase 1 strategy:

In light of the grouping and prioritization strategy described above, Staff proposes to form a work group that will focus on identifying solutions to the following, interrelated issues first:

Distribution-level “hosting capacity” thresholds:

- Exploration of the thresholds used to screen generators and identify the need for major distribution-level protective equipment during the interconnection process. Focused on analytical methods and threshold levels used in interconnection process e.g., calculating low loading conditions, setting thresholds for the ratio of generation to loading, geographic and temporal granularity of assumptions and inputs. Can also include exploration reasonable technologies to mitigate impacts when thresholds are reached in the interconnection study analysis e.g., transfer trip, 3vO sensing, smart inverters, storage, fiber or radio frequency, and etc.
- Expected to inform and, potentially be informed by, the work in Distribution System Planning to increase the transparency and visualization of system data.⁵

⁵ Staff sees the division of efforts between UM 2111 and Distribution System Planning (DSP) as: DSP will consider the data that is published, how its published, and the system investments required to collect and publish it. UM 2111 will examine the underlying data sources and methodologies. DSP efforts will be most impactful if they provide information that reflects the screening thresholds and analyses examined in UM 2111.

February 11, 2022

- **Advanced inverters:** Incorporate IEEE 1547-2018 and policies needed to incorporate advanced inverters into existing interconnection rules and practices.
 - Expected to impact the threshold analysis and technologies used to mitigate impacts when thresholds reached in #1.
- **Storage and flexibility:** Integrate storage, islanding, and other modern configurations more explicitly into interconnection rules, policies, and practices.
 - Expected to impact the threshold analysis and technologies used to mitigate impacts when thresholds reached in #1.

Staff's approach for Phase 1 would include three issues as discussed above. Staff considered separating the items in three workstreams, but due to the issues and interested parties overlapping across items, a single, consolidated workstream is proposed. Following discussion with stakeholders, if the issues are separable, with different subject matter experts involved, Staff could see three separate workstreams. Parties can discuss the approach in the March 9 workshop.

Whether it is a single- or multi-workgroup path, the schedule would be set for meetings on at least a monthly basis. The objective of the workgroup would be to fully refine issues and develop recommendations (consensus or document different positions) for the refined issues. Depending on the process selected, Phase 1 issues could be presented for Commission decision on an ad-hoc basis, or once recommendations are available for all of the issues. Commission decisions on the work group issues will be dependent on the conclusions presented.

After Phase 1, issues would be queued for upcoming phases. Staff and stakeholders would address successes and failures with the initial approach. This should allow for continual improvements in the process.

Staff anticipates presenting recommendations to the Commission at the Public Meeting scheduled for April 5. Following Commission guidance, Staff will schedule workshops, tentatively on a monthly basis. While final timelines are not known at this point, Staff would envision updating the Commission on the status of UM 2111 every six months, or sooner if there are reasons, such as consensus on issues.

Conclusion

Staff appreciates the interest in this docket and looks forward to working with stakeholders to resolve issues as expeditiously as possible.

Questions

If you have questions on the process or content of this workshop, contact:

Ted Drennan
Utility Strategy & Integration Division
503-580-6380
ted.drennan@puc.oregon.gov

Attachment A
February 11, 2022



Announcement

Wednesday, March 9th, 2022

1:00-3:00 a.m.

Zoom Meeting

[Link to Meeting](#)

Dial-in: 1-971-247-1195

Meeting ID: 827 2678 0497

Passcode: 6789423059

Staff of the Public Utility Commission of Oregon (OPUC) will hold a scoping workshop for UM 2111 investigation into Interconnection Process and Policies. This workshop will focus on interconnection issues to address, and prioritization of issues. Staff is extending an invitation for stakeholder groups to make presentations of approximately 15 minutes to describe interconnection issues of most relevance, prioritization, and process.

[Workshop overview](#)

OPUC Order No. 20-211 opened Docket No. UM 2111 which staff proposed to act as “a general investigation, serving as an umbrella docket to organize, track, and monitor the range of interconnection issues and efforts to address them.”⁶ Changing technology, policies, markets, and consumer interests continue to highlight a need to update the interconnection framework. Staff proposes a strategic approach to bring holistic, fair, and efficient reform to Oregon jurisdictional interconnections. At the workshop, stakeholders will provide feedback on Staff’s proposal. Following the workshop, Staff will incorporate feedback into its proposal and submit a formal request for the Commission to approve the approach, and issues covered.

[Logistics](#)

Staff will provide an agenda for the workshop to this distribution list in advance of the March 9, 2022 meeting.

[Questions](#)

If you have questions on the process or content of this workshop, contact:

Ted Drennan
Utility Strategy & Integration Division
503-580-6380
ted.drennan@puc.oregon.gov

/s/ Ted Drennan

To receive meeting notices and agendas for this docket, send an email to puc.hearings@state.or.us, and ask to be added to the service list for Docket No. UM 2111. You will then receive emails with workshop details, when new documents have been added to the docket, or there is a change to the schedule.

⁶ See Docket No. UM 2111, Commission Order No. 20-211, July 6, 2020, Appendix A, p. 9.

Attachment B: Issues Inventory

Staff's intent in UM 2111 is to investigate issues related to the modernization of interconnection policies and practices in Oregon. The following table is Staff's summary of interconnection issues that have been raised in past and current OPUC dockets.

Oregon Jurisdictional Interconnection Issues Recently Identified by Stakeholders		UM 1930	UM 2000	UM 2032	UM 2108	UM 2099	Other *
Costs							
Identification of upgrades and costs	Ensuring rules, policies, and practices for identification of upgrades account for modern technologies and industry best practices including, but not limited to: <ul style="list-style-type: none"> Modernizing the screening and interconnection study practices Incorporating updated standards such as IEEE 1547-2018 Policies and practices required for smart inverters, storage, islanding, and other modern configurations Modernizing and right-sizing the upgrade options considered when an upgrade is needed. 	X	X			X	X
	Ensuring there is an efficient, effective, and accessible dispute resolution process(es) for all generator types, and any other processes to ensure sufficient ability to verify and challenge interconnection studies and results.	X	X	X	X	X	X
	Generators' ability to perform studies and construct upgrades.	X	X	X			X
	Utilities requirement for QFs to interconnect under Network Resource Interconnection Service (NRIS).	X	X	X	X		X
Allocation of upgrades and costs	Assigning system upgrades between generators, including use of cluster studies.	X	X	X	X	X	X
	Assigning system upgrades between generators and system beneficiaries (utilities, customers), including: <ul style="list-style-type: none"> More clarity on "reasonable costs" to be borne by a generator How to account for interconnection constraints in utility system planning activities Assigning <i>network upgrades</i> to generators without reimbursement. 	X	X	X		X	X
	Assigning interconnection upgrades for QF's renewing contracts.			X			X
Certainty and Control							
Transparency	<ul style="list-style-type: none"> Providing pre-emptive data and visualizations necessary to predict and/or mitigate upgrades through siting, sizing, and project design (a.k.a. Hosting Capacity Analysis). Requirements for transparent communications, access to in-person meetings with engineers, professional engineer stamps, access to standards and assumptions, study inputs, baseline data, and price assumptions. 	X	X	X		X	
Certainty of cost estimates	Limits on upgrade costs or deviation from cost estimates.	X	X	X		X	X
Changes and optionality	Clarity on material changes, requesting multiple POIs and other configurations, downsizing, and aggregation.		X	X			X
Processes							
Application and study process	Predictability and enforcement of timelines, responsiveness, and preventing congestion in the queue. Includes publishing interconnection application processing metrics.	X	X	X	X		X
Construction	Predictability, speed, and enforcement of construction timelines. Includes publishing construction metrics.	X		X	X		X
Rules Violations	Remedies for utility and generator violations of rules/processes, reasonable, non-discriminatory, good faith actions.		X	X			X
Rule structure	<ul style="list-style-type: none"> Whether to adopt rules for 10 MW – 20 MW Oregon jurisdictional generators. Whether to have separate rules for NEM, SGIP and separate LGIP 	X		X			

- UM 1930: See [Staff Report](#), October 22, 2019, p. 5 and Attachment C, pp. 44 – 48
- UM 2000: See [Staff's Draft Whitepaper](#), May 28, 2019, pp. 16 – 17 and [April 5 Workshop Notes](#) pp. 5-7.
- UM 2032: See [NIPPC, the Coalition, and CREA Comments on Staff Issues List](#), April 9, 2020, pp. 9-10.
- UM 2108: See [Staff Report](#), October 6, 2020.
- UM 2099: See [Staff Report](#), November 3, 2020.
- *"Other" includes disputes, complaints, waivers, other PURPA dockets such as AR 631, distribution system planning and the comments filed by the ICC on UM 2111 on January 4, 2022.

The table below helps to illustrate how Staff's issue grouping translates to the issues inventory:

Oregon Jurisdictional Interconnection Issues Recently Identified by Stakeholders		Activity
Costs		
Identification of upgrades and costs	Ensuring rules, policies, and practices for identification of upgrades account for modern technologies and industry best practices including, but not limited to: <ul style="list-style-type: none"> Modernizing the screening and interconnection study practices Incorporating updated standards such as IEEE 1547-2018 Policies and practices required for smart inverters, storage, islanding, and other modern configurations Modernizing and right-sizing the upgrade options considered when an upgrade is needed. 	Group 1 (Group 2 if issues remaining to be addressed)
	Ensuring there is an efficient, effective, and accessible dispute resolution process(es) for all generator types, and any other processes to ensure sufficient ability to verify and challenge interconnection studies and results.	Group 3
	Generators' ability to perform studies and construct upgrades.	Group 3
	Utilities requirement for QFs to interconnect under Network Resource Interconnection Service (NRIS).	UM 2032
Allocation of upgrades and costs	Assigning system upgrades between generators, including use of cluster studies.	Group 2
	Assigning system upgrades between generators and system beneficiaries (utilities, customers), including:	
	• How to account for interconnection constraints in utility system planning activities	UM 2005
	• More clarity on "reasonable costs" to be borne by a generator	Group 2 UM 2032 – for network upgrades only
	• Assigning network upgrades to generators without reimbursement.	UM 2032
	Assigning interconnection upgrades for QF's renewing contracts.	Group 2
Certainty and Control		
Transparency	Providing pre-emptive data and visualizations necessary to predict and/or mitigate upgrades through siting, sizing, and project design (a.k.a. Hosting Capacity Analysis).	UM 2005
	Requirements for transparent communications, access to in-person meetings with engineers, professional engineer stamps, access to standards and assumptions, study inputs, baseline data, and price assumptions.	Group 3
Certainty of cost estimates	Limits on upgrade costs or deviation from cost estimates.	Group 3
Changes and optionality	Clarity on material changes, requesting multiple POIs and other configurations, downsizing, and aggregation.	Group 3 AR 631 – similar rules for contracting
Processes		
Application and study process	Predictability and enforcement of timelines, responsiveness, and preventing congestion in the queue. Includes publishing interconnection application processing metrics.	Group 4 AR 631 – similar rules for contracting
Construction	Predictability, speed, and enforcement of construction timelines. Includes publishing construction metrics.	Group 4 AR 631 – similar rules for contracting
Rules Violations	Remedies for utility and generator violations of rules/processes, reasonable, non-discriminatory, good faith actions.	Group 4
Rule structure	<ul style="list-style-type: none"> Whether to adopt rules for 10 MW – 20 MW Oregon jurisdictional generators. Whether to have separate rules for NEM, SGIP and separate LGIP 	Group 4

Below is a summary of key interconnection issues presented in recent dispute dockets at the Commission

MEMORANDUM

To: Ted Drennan
From: AHD
Re: Summary of Current Interconnection Complaints
Date: January 31, 2022

I. INTRODUCTION

The purpose of this memorandum is to update staff on the interconnection complaints that are active at this time. There are five interconnection complaints that are currently open. Below is a short discussion of each interconnection complaint.

II. LIST OF CASES

Case Number	Caption
UM 2164	Zena Solar, LLC v. Portland General Electric Company
UM 1971	Waconda Solar, LLC v. Portland General Electric Company
UM 2177	Sunthurst Energy, LLC v. PacifiCorp
IC 18	Sunthurst Energy, LLC v. PacifiCorp
UM 2125	Dalreed Solar v. PacifiCorp

III. SUMMARY OF CASES

UM 2164 Zena Solar, LLC v. Portland General Electric Company

This case was initially filed on May 24, 2021. It is currently in its final stages; the record is closed and the final brief will be filed on January 31, 2022. In this case a three day in person hearing was held, which has been recorded. Additionally, transcripts of this hearing have been developed.

This case involves a dispute between Zena Solar, LLC and PGE regarding an interconnection agreement. The complaint alleges PGE resisted an independent interconnection study, and is ignoring its results as well as the results of subsequent analysis, and is ultimately requiring expensive upgrades that go beyond what is functionally need to protect the substation in question.

Zena Solar does not think that they should be liable to pay for the contested upgrades at PGE's substation because Zena argues the substation was exposed to the overvoltage issues in question in this case before Zena's interconnection. Secondarily, if they are found liable for these

upgrades, Zena disagrees regarding the equipment that PGE is requiring for the upgrades because that equipment is more expensive than other options, including the utilization of existing equipment. PGE argues both parties previously agreed the upgrades were necessary, and states that no evidence has been presented that those previous determinations should be re-examined. In this case, Zena has completed a competing interconnection study, which has been supplemented with additional analysis that has been provided throughout the litigated proceeding.

The parties have disputed the equipment required with the testimony of expert witnesses. At issue is how we interpret our rules regarding what upgrades are reasonable, or consistent with good utility practice, the competing claims of experts, as well as claim preclusion questions. The final order in this case is expected to be issued no later than March 17.

UM 1971 Waconda Solar, LLC v. Portland General Electric Company

This case was initially filed on September 28, 2018. Currently, this case is in a Motions for Summary Judgment phase.

Waconda's complaint centers on PGE's handling of its interconnection application. PGE has not consented to permit Waconda to hire a third-party consultant to complete an independent SIS. Waconda alleges that PGE refuses to give Waconda information about its system configuration and overall won't cooperate with Waconda. PGE argues it has provided adequate cooperation, and that Waconda has refused routine requests, such as signing an NDA, that would facilitate detailed exchanges of information. Waconda also claims that PGE has effectively prevented it from conducting an independent system impact study, because it has not provided assurances that PGE will review that study in a reasonable, non-discriminatory manner consistent with Commission rules and contractual duties. The parties dispute whether or not the interconnection application has been effectively withdrawn given Waconda's failure to meet specific deadlines, or PGE's non-compliance with study requirements as alleged by Waconda.

The request for Summary Judgment has been filed by PGE; Waconda may file a subsequent counter request, but has not yet done so.

UM 2177 Sunthrust Energy, LLC v. PacifiCorp

This is not technically a complaint yet, as counsel for Sunthrust indicated a complaint would be forthcoming in the summer of last year, and to date the complaint has not been filed. Sunthrust requested extensions on deadlines until PacifiCorp addresses their questions on the interconnection studies. PacifiCorp gave an extension but there are remaining issues. Sunthrust sent and docketed letters regarding the SIS for this project, and various IEEE standards.

Sunthrust has also filed an official notice of intent to file a complaint (described below), but no complaint has been filed.

IC 18 Sunthrust Energy, LLC v. PacifiCorp

Submitted in 2020, Sunthurst indicates it plans to file to enforce an interconnection agreement with PacifiCorp and that there are violations of the IA including PacifiCorp requiring unnecessary upgrades to be paid for by Sunthurst. No complaint has been forthcoming.

UM 2125 Dalreed Solar, LLC v. PacifiCorp

In this case, Dalreed Solar sought to negotiate a 20 MW non-standard PPA with PacifiCorp. Dalreed repeatedly requested a PPA, and filed a complaint alleging PacifiCorp sought to delay negotiations, and violated PURPA standards by not furnishing the PPA. After the complaint was filed, PacifiCorp produced the PPA.

In an order resolving the case on summary judgment, the Commission found the matter moot, because PacifiCorp essentially provided the relief requested by Dalreed. However, the Commission also determined that PacifiCorp's engagement with QF's required greater diligence to ensure that good-faith negotiations occurred between the parties, given interconnection challenges with PacifiCorp.

The Commission stated that:

PacifiCorp's actions to date have not reassured us that encouraging PacifiCorp to act proactively to avoid a QF contracting backlog is sufficient. Accordingly, we separately direct Commission Staff in the time remaining before PacifiCorp's Transition Cluster Study results to monitor PacifiCorp's behavior toward qualifying facilities in the Transition Cluster. If Staff determines that additional procedural requirements are appropriate to ensure an efficient and fair processing of requests for power purchase agreements for the transition cluster and/or future clusters, Staff should take action to address this by providing us timely recommendations at a regularly scheduled public meeting or in an appropriate docket.¹

Additionally, instead of closing the docket after this decision, the Commission left the docket open, until such time as the Commission would "receive a status update from Dalreed Solar indicating Dalreed Solar has executed a PPA with PacifiCorp or alternatively, has decided to abandon the project."²

On January 20, 2022 Dalreed filed such an update, in a notice of dismissal without prejudice. Though this filing does not request any action in the docket from the Commission, it does lay out allegations the PacifiCorp did not negotiate in good faith, noting that it does not have the capacity at this time to litigate the issues associated with that negotiation further. Dalreed outlines some of those issues in the motion, identifying delay that caused lowered avoided cost prices, as well as non-renewable pricing that PacifiCorp was obligated to provide, but never did.

¹ *In the Matter of Dalreed Solar LLC, v. PacifiCorp, dba Pacific Power*, Docket No. UM 2125, Order No. 21-097 at 8. (Mar 30, 2021).

² *Id.* At 7.

The final issue outlined in this filing involves an allegation that PacifiCorp failed to follow the provisions of its own tariffs regarding deliverability issues in load pockets. Despite several lower cost alternatives, PacifiCorp states that Dalreed is obligated to construct a \$77 million dollar transmission upgrade that is expected to take 10 years to complete. Dalreed states: “While Dalreed Solar is unwilling to litigate this issue, Dalreed Solar asks the Commission to independently investigate and take action against PacifiCorp for refusing to use the third-party PTP transmission process in the Commission approved tariff for wheeling power out of load pockets.”³

On January 31, 2022, PacifiCorp filed its response to Dalreed Solar’s Notice of Dismissal Without Prejudice. PacifiCorp does not object to the requested dismissal.⁴ PacifiCorp does object to Dalreed Solar’s request directing Staff to independently take action against PacifiCorp for alleged violations of PURPA. PacifiCorp rebuts Dalreed Solar’s alleged potential claims, stating PacifiCorp did provide Dalreed Solar with a draft PPA and negotiated in good faith, reasonably updated its avoided cost prices, provided non-renewable avoided cost prices, and conducted an interconnection study process consistent with Commission policy. PacifiCorp argues Dalreed Solar’s termination of its interconnection request renders its complaints regarding the PPA negotiation process moot. PacifiCorp concludes that the Commission should reject Dalreed Solar’s request to initiate an investigation and pursue action for alleged violations of PURPA.

³ *In the Matter of Dalreed Solar LLC, v. PacifiCorp, dba Pacific Power*, Docket No. UM 2125, Notice of Dismissal Without Prejudice at 10. (Jan 20, 2022).

⁴ See PacifiCorp Response at 1.