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Via Electronic Mail

To: TransmissionProvider@pgn.com
From: Renewable Energy Coalition

Re: Portland General Electric Company's Draft Revised 2025 Interconnection Handbook

Dear Portland General Electric Company,

These comments regarding Portland General Electric Company's ("PGE") Draft Revised 2025 Distribution Interconnection Handbook ("Revised Handbook") are provided by the Renewable Energy Coalition (the "Coalition") in response to PGE's March 10, 2025 notice of opportunity to submit comments and April 7, 2025 notice of extended comment period, both posted to PGE's OASIS website in compliance with Oregon Public Utility Commission ("Commission" or "OPUC") Order No. 24-068. The Coalition has also filed these comments in OPUC Docket No. UM 2111 so that Commission Staff is aware of the concerns the Coalition is raising. The fact that the Coalition is not addressing certain aspects of the Revised Handbook should not imply the Coalition's agreement. The Coalition reserves the right to address other aspects of the Revised Handbook in the future.

The Coalition reviewed PGE's documents on OASIS under the following filenames:

- “2025 PGE Distribution Interconnection Handbook Draft” (referred to herein as “Revised Handbook”); and
- “PGE Distribution Interconnection Handbook Redline description” (referred to herein as “Redline Descriptions”).

A. Coalition Comments to the Revised Handbook

With respect to the PGE’s changes in the Revised Handbook, the Coalition submits the following comments.

Section 1.5.1, Pages 4-6, Small Generator (greater than 10 MW to 20 MW), Non-FERC Jurisdictional Interconnection

The Coalition is supportive of small generators greater than 10 MW to 20 MW not under FERC jurisdiction having the right to select the Commission’s small generator interconnection procedures, and PGE stating as a matter of default that these interconnection customers will be processed under the small generator interconnection rules and policies. The Coalition notes that the Commission has identified that it is an unresolved issue whether small generators greater than 10 MW to 20 MW should be interconnected under the small generator interconnection rules and policies, or the policies for larger generator interconnections above 20 MW.¹ One right that large generators above 20 MW have is that they will be compensated if they can demonstrate that their interconnection causes quantifiable system wide benefits.² Therefore, the Coalition recommends that the Revised Handbook state that interconnection customers greater than 10 MW be provided the option to select to use the Commission’s policies for larger generator interconnections above 20 MW.

Section 3.6, Page 29, Interconnection Study Methodologies and Requirements

The Coalition is concerned by PGE’s strike of “Alternate power factors can be modeled if mutually agreed upon by PGE and the applicant.” In some instances, varying power factor assumptions may help mitigate potential adverse system impacts and reduce the need for upgrades. The Coalition would appreciate continuing to work with the utility to determine the best reasonable power factor assumption for the System Impact Studies.

If PGE retains its proposed edits, we suggest the word “reasonable” be inserted between “other” and “settings”, along with the following edit: “...but may choose to apply other *reasonable* settings based on system impacts *if different settings may reduce or mitigate interconnection costs or impacts as mutually agreed by PGE and the applicant.*”

¹ *In Re Staff Investigation into Interconnection Process and Policies*, Docket No. UM 2111, Order No. 22-126, Appx. A at 10 (Apr. 22, 2022).

² *In Re Staff Investigation into Treatment of Network Upgrade Costs for QFs*, Docket No. UM 2032, Order No. 23-005 at 29-32 (Jan. 20, 2023).

Section 3.6, Page 30, Equipment and Conductor Loading

No comment.

Section 3.6.1, Pages 30-31, Power Flow and Voltage Stability

For the proposed voltage regulator edits, we request that PGE add language to the effect of “***PGE will recommend the least cost mitigation approach***”. This could be added after the sentence, “Retrofitting existing voltage regulation banks with microprocessor controls is labor intensive and may not be cost effective.”

Section 6.4, Page 39, Witness Testing

No comment.

Section 7.7, Pages 42-43, Frequency Stability

The purpose of frequency response is to have the distributed energy resource (“DER”) adjust operation in response to changes in grid frequency. Because the grid is not actually operated at exactly 60Hz, the first sentence either needs to delete “60Hz” or revise it to be “***60Hz (nominal)***”.

The Coalition appreciates PGE updating its handbook to conform to the latest IEEE 1547 Standard and reserves the opportunity for applicant DERs to review and scrutinize any misapplication of the frequency trip and ride-through requirements outlined in IEEE 1547-2018. These requirements may be relevant to Section 7.7 of PGE’s Distribution Interconnection Handbook to ensure that reasonable settings and/or requirements are used on applicant DER interconnections going forward.

Section 8.8.2, Pages 47-48, Medium Voltage Service

While PGE notes this section in its Revised Descriptions, the Coalition did not see any redlines to this section in the Revised Handbook and requests PGE confirm if there are any proposed changes to this section or not. The Coalition sees in Section 8 and elsewhere in the Revised Handbook, PGE references requirements in its Medium Voltage Requirements book “[are] to be followed in full” and this requirement has been referenced in prior Handbooks. The Coalition notes that PGE’s current Medium Voltage Requirements book was last updated in October 2024 and contained revisions that changed medium voltage switchgear requirements for applicants that are subject to PGE’s Distribution Interconnection Handbook; however, stakeholders were not given opportunity to comment on these changes. The Coalition is concerned that the changes in PGE’s October 2024 Medium Voltage Requirements book impose new switchgear requirements on applicants that add cost and time to designing and constructing interconnection facilities that function the same as interconnection facilities on prior similarly situated projects. In light of this, the Coalition members would appreciate a chance to review and provide comments on the redline changes that PGE implemented in the October 2024 Medium Voltage Requirements book because that document is referenced in the utility’s Distribution Interconnection Handbook and stakeholders were not given the opportunity to review or comment before PGE adopted the October 2024 changes.

Section 9.2.2, Page 50, Switchboard Enclosure PGE Requirements

No comments.

Section 9.7, Figure 4, Page 54, SCADA metering

No comments.

Section 10.1, Page 55, Secondary Grid Network Interconnection

No comments.

D.4.3, Page 81, Frequency Droop

No comments.

B. Coalition Comments to Other Portions of the Revised Handbook

In addition to the above comments, the Coalition submits the following broader comments to further improve PGE’s Draft Revised 2025 Distribution Interconnection Handbook.

Section 1.4.1, Page 3, Inverter-Based Facilities

This section refers to “ground reference” but this term is not defined. Is this “effective grounding” or “earthing”?

Section 3, Page 13, Interconnection Technical Screenings and Studies

In the third paragraph on page 13, the Coalition requests additional language in the nature of the following: ***“PGE will provide the applicant with a report that details the review results. The applicant may request, and PGE shall provide, sufficient information so the applicant can verify and validate the results of the PGE technical screening.”***

Section 3.3.2, Page 15, Short-Circuit Interrupting Capability Screen

The Coalition recommends that PGE add the following: ***“PGE will use manufacturer data, provided by the Applicant, for the short circuit contribution from the DER.”***

Section 3.3.2, Page 16, Short-Circuit Interrupting Capability Screen

Under Service Imbalance Screen, the phrase “If PGE’s distribution circuit uses high speed reclosing...” assumes that high-speed reclosing is already implemented and that there is no hot line checking (“HLC”) being performed. The issue of high-speed reclosing (“HSR”) and direct transfer trip (“DTT”) can be mitigated by hot line checking. There is no justification for DTT where HLC is being used.

Section 3.4.6.4, Page 23, Supplemental Grounding Screen

PGE mentions a “supplemental grounding software tool” but provides no description. If such a tool is being used, the Applicant should be allowed to request and obtain a copy of this tool and documentation of all the data and assumptions used in this tool.

Sections 3.5.4.1 and 3.5.4.2, Pages 26-27, Export Control Methods

These sections both include the same language requiring protective equipment for DERs interconnected to circuits already using HSR based on the rationale that where HSR is used it must be retained. Under this rationale, system upgrades including protective

equipment and possibly including DTT “on a case-by-case basis” can be required so that HSR is retained. This provides a neat justification for PGE to force DTT. However, the use of HLC can provide an effective alternative to DTT where HSR is desired. The language here puts PGE in sole control of what mitigations are needed once HSR is assumed. The Coalition recommends adding the following two sentences: ***“PGE will consider reasonable alternatives to direct transfer trip where high-speed reclosing is desired. Such alternatives shall include hot line checking.”***

Section 3.6.1, Page 30, Power Flow and Voltage Stability

PGE mentions the use of voltage regulators and capacitors. Capacitors are reactive power devices. Shunt reactors need to be an additional option studied.

Section 3.6.2, Page 31, Conductor Capacities

PGE states “Appropriate conductor and equipment upgrades are identified and quantified. For conductors and other equipment, the size, length, type, and thermal rating of the proposed upgraded materials is determined by PGE.”

This appears to put the entire decision as to what work to require in PGE’s hands. The Coalition recommends additional language to provide guiding principles or sideboards for that decision-making: ***“PGE will determine the recommended mitigations and strive to limit their scope to only that required to mitigate the adverse impacts while following good utility practice.”***

Section 3.6.3.2, Page 32, Circuit Reclosers

PGE may opt to require that existing main line fuses be replaced with expensive reclosers. The relocation of the fuse frequently can avoid the recloser upgrade. The Coalition recommends the following additional language: ***“Where an existing fuse is located between the DER and the substation, PGE will study whether it is feasible to relocate the fuse or whether fuse-to-recloser conversion is necessitated.”***

Section 3.6.4.4, Page 34, Conditions Requiring Transfer Trip

The sentence starting “If PGE determines that transfer trip is required...” raises the question of how that determination is to be made. As currently worded, the determination appears to be up to PGE with no guidance. The Coalition suggests adding: ***“If PGE determines there is the high probability of an unintentional island being formed that can lead to abnormal voltages and resulting equipment damage based on the electrical system achieving real time balance in real and reactive power flow at the moment of breaker operation, ...”***

Section 3.6.4.5, Page 35, Overvoltage (3V0) Protection

This entire section is hypothetical. It assumes, without support, that a stable power flow can exist when there is a transmission fault, transmission outage, enough voltage and power to damage a surge arrester, and continued DER generation that exceeds load. It fails to even consider the option, widely used at other utilities, of opening feeder breakers during transmission faults. The default assumption that surge arresters will be damaged

needs to be shelved until it is substantiated that this damage will be caused by a DER. At the least, alternative protection approaches need to be considered.

Section 8.3, Page 45, Effective Grounding

This section mixes earthing and effective grounding. These are distinct concepts, and this section needs to be modified to remove that confusion. Further, mitigation of transient overvoltages (“TOV”) that are historically mitigated by effective grounding means are now accepted to be mitigated by the TOV mitigation capabilities of IEEE 1547-2018-compliant inverters. The use of TOV-compliant inverters needs to be considered and discussed.

The Coalition appreciates PGE’s consideration of these comments.

Submitted respectfully,

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