



Portland General Electric
121 SW Salmon Street · Portland, Ore. 97204
PortlandGeneral.com

March 23, 2018

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
P.O. Box 1088
Salem OR 97308-1088

RE: UM 1856 Rebuttal Testimony for PGE's Energy Storage Proposal

Filing Center:

Enclosed for filing, in the above referenced matter, please find the following:

- Exhibit 300 - Rebuttal Testimony of Darren Murtaugh and Jim Riehl.

If you have any questions or require further information, please call Kalia Savage at (503) 464-7432. Please direct all formal correspondence and requests to the following email address: pge.opuc.filings@pgn.com.

Sincerely,

A handwritten signature in blue ink that reads "Robert Macfarlane". The signature is written in a cursive, flowing style.

Robert Macfarlane
Interim Manager, Pricing and Tariffs

Cc: Seth Wiggins, OPUC

Enclosure

1 **Q. Please state your name and position with Portland General Electric Company (PGE).**

2 A. My name is Darren Murtaugh. I am the Manager of Transmission & Distribution Planning
3 at PGE. My qualifications are at the end of this testimony.

4 My name is Jim Riehl. I am a Project Manager in the Generation, Transmission, and
5 Distribution Project Management Office. My qualifications appear in Section IX of PGE
6 Exhibit 100.

7 **Q. What is the purpose of your testimony?**

8 A. The purpose of this testimony is to address the remaining issue in this docket, third-party
9 ownership on PGE property sponsored by the Industrial Customers of Northwest Utilities
10 (ICNU) and the Northwest & Intermountain Power Producers Coalition (NIPPC).

11 **Q. Have Parties resolved any issues in settlement discussions?**

12 A. Yes. We believe Parties have reached a verbal agreement that resolves many of the issues in
13 this docket, and are drafting stipulation language to memorialize the agreement. As part of
14 the settlement, the remaining process in this case addresses only the issue related to third-
15 party ownership, as it pertains to the Coffee Creek energy storage system (ESS) proposal.
16 Thus, this testimony addresses only this issue.

17 **Q. Please summarize the positions of the parties in this docket as to third party ownership
18 of the Coffee Creek ESS.**

19 A. ICNU and NIPPC advocate that PGE should allow parties to submit projects that include
20 third-party ownership and that the following lessons could be learned:

- 21 • Contracting for and constructing utility-scale storage; and
22 • Develop a better understanding of procuring ESSs owned by third parties.

1 **Q. How does PGE respond to ICNU and NIPPC’s proposal?**

2 A. PGE opposes third-party ownership of the Coffee Creek ESS. In our proposal, we state that
3 the request for proposal (RFP) process would be a competitive bidding process for the
4 engineering, procurement, and construction of these ESS projects.¹ As stated in PGE’s
5 Response to ICNU Data Request No. 005 (provided as PGE Exhibit 301), and if this project
6 type moves forward with broader deployment, the learnings gained from construction and
7 operation are valuable. Further, we envision that the learnings derived from our proposal
8 will help drive the ESS market forward. Our knowledge of our transmission and distribution
9 system needs, paired with the learnings on how an ESS operates on our system, will allow
10 us to proactively identify areas where ESSs can be of most value to customers. That way we
11 can better partner with ESS providers to bring storage onto our system.

12 In addition, we have concerns about third-party ownership of the Coffee Creek ESS as
13 that presents risks outside of procurement and construction with a third party. First, there
14 are various risks for a third party to own this specific ESS, as it is located on PGE property
15 and would be connected directly to PGE’s Coffee Creek substation. Second, the
16 development of an appropriate lease and contract structure would be complex due to the
17 proposed site location (on PGE property) while reserving operational control for PGE. Due
18 to these concerns, PGE does not plan to allow third-party ownership of the Coffee Creek
19 ESS.²

¹ See PGE Exhibit 101, page 45.

² PGE also stated this position in PGE Response to ICNU Data Request No. 009. For the data request, see ICNU-NIPPC/102, page 12.

1 **Q. Is PGE generally opposed to third-party ownership of ESSs?**

2 A. No. In fact, third parties can develop and own an ESS and interconnect it to PGE’s system
3 today. For example, as of March 23, 2018, there are two such active requests in PGE’s
4 transmission interconnection queue on Open Access Same-time Information System
5 (OASIS)³. In the future, we anticipate that an array of ESS options will be available to meet
6 specific system needs, which includes third-party ownership of ESSs. The learnings from
7 Coffee Creek, and the other ESS proposals, will inform future contract structures, terms, and
8 price(s) to ensure the best value and application to PGE’s system.

9 **Q. If PGE does not generally oppose third party ownership, then why is it opposed here?**

10 A. As stated earlier, the site is PGE-owned and the ESS would be connected directly to PGE’s
11 Coffee Creek substation.⁴ As such, third-party ownership of the Coffee Creek ESS poses
12 safety, liability, cybersecurity, and financial risks.

13 **Q. Describe the risks of third-party ownership of the Coffee Creek ESS.**

14 *Safety and liability risks*

15 PGE is committed to the safety of our co-workers, customers and the public. Our major
16 concern is that the Coffee Creek ESS is in physical proximity to the substation, and without
17 full control of the asset, poses a safety risk. For example, during the operation and
18 maintenance of adjacent utility-owned assets (e.g., Coffee Creek Substation) if there were an
19 equipment malfunction from the third party asset, PGE personnel would be at risk.

20 Further, any incident (e.g., environmental, safety) that occurs on PGE property poses a
21 liability risk to PGE and our customers. In addition, in the case of an environmental issue,
22 such as Polychlorinated biphenyl (PCB) contamination, any third party associated with our

³ http://www.oasis.oati.com/PGE/PGEdocs/Active_-_Generator_Interconnection_Requests_2-26-18_update.pdf

⁴ For more information on the Coffee Creek Substation site, see PGE Exhibit 101, pages 73-74.

1 impacted property may be held jointly liable by the United States Environmental Protection
2 Agency (EPA) under the Comprehensive Environmental Response, Compensation, and
3 Liability Act (CERCLA), commonly known as Superfund.

4 Cybersecurity risks

5 Due to cybersecurity risks by connecting with a non-PGE owned asset, PGE would not
6 be able to fully integrate the ESS onto its substation Supervisory Control And Data
7 Acquisition (SCADA) system; thus, the substation-specific learnings would not be captured.
8 Access to the substation SCADA system would give the ESS owner/operator the ability to
9 manipulate PGE substation assets and data streams, potentially affecting power quality and
10 service reliability. This may be mitigated by connecting the ESS to a centralized control
11 system with no physical connection to the localized substation SCADA. However, such a
12 design would be subject to communication circuit latency issues and service interruptions
13 and therefore unable to support voltage optimization with other substation assets (i.e.,
14 capacitor banks and transformer load-tap changers). This would limit learnings that might
15 otherwise influence how PGE designs and builds substations and related controls in the
16 future.

17 Financial risks

18 If PGE were to allow third-party ownership, PGE, along with our customers, takes a
19 financial risk, for example, if the asset becomes stranded on our property due to bankruptcy
20 or insolvency of the third party. PGE would then be responsible for costs of the ESS,
21 including any decommissioning, disposal, or remediation costs related to the ESS, in
22 particular the metals (e.g., lithium-ion) that make up the battery.

1 **Q. How would the above risks be mitigated by PGE owning the Coffee Creek ESS?**

2 A. PGE faces these risks for assets on PGE property and has internal processes in place to
3 mitigate them. The Coffee Creek ESS proposal intends to give us insights to risks that exist
4 in ownership and operation. These lessons may be used to develop contracts with third-
5 party ESS vendors in the future.

6 **Q. As to your second issue with third party ownership, describe PGE's concerns with
7 regard to contracting with a third-party owner of the Coffee Creek ESS.**

8 A. Third party use of PGE property would require PGE and the third party to enter into either a
9 license or lease agreement. The contract would need to allow PGE the flexibility to test all
10 use cases and gain operational knowledge of how this type of ESS operates with PGE's
11 system. Further, the contract would have to contain provisions that mitigate the risks
12 mentioned above, including a commitment to make appropriate security upgrades per PGE's
13 direction as standards continue to evolve. Negotiating agreements can be a challenging and
14 protracted process, possibly causing project delays. Depending on the circumstances, PGE's
15 licensing or leasing of PGE property may require OPUC approval (ORS 757.480), again
16 potentially causing project delays. The ICNU and NIPPC proposal is premature; going
17 forward, the lessons of owning and operating this project are critical to develop a contract
18 structure for both utility and third-party ownership of ESSs in PGE's service territory.

19 **Q. INCU-NIPPC asserts that it is more expensive for customers if PGE were to own the
20 storage projects. Do you agree?**

21 A. No. ICNU bases its argument on projected cash flows of PGE's proposed costs compared to
22 Fractal's Benchmark. The costs are not comparable. Table 1, on Crotzer/3 of ICNU-NIPPC
23 Exhibit 200, is flawed as it compares market costs from Fractal's own RFP with our

1 proposed costs, in PGE Exhibit 101. As stated in PGE Exhibit 200 and reiterated in
2 Renewable Northwest (RNW) Exhibit 100, PGE’s proposed costs were from the request for
3 information (RFI) process and may not reflect current market prices or prices that we see
4 with the competitive RFP. Further, the last update to PGE’s proposed costs was in July
5 2017. We anticipate competitive pricing for ESSs through an RFP will be lower.⁵

6 **Q. ICNU and NIPPC’s testimony uses Pomona Battery as an example of third-party**
7 **ownership. Do you agree with this comparison?**

8 A. No. The Pomona Battery is located on “a portion of the existing San Gabriel Energy
9 Facility site, which is owned by AltaGas Pomona Energy Inc. (AEIP).”⁶ This battery is
10 located within Southern California Edison Company’s service territory, but not on their
11 property. Thus, this is not a reasonable comparison as the Coffee Creek ESS would be on
12 PGE-owned property.

13 **Q. What do you recommend?**

14 A. We recommend that the Commission reject ICNU and NIPPC’s advocacy to allow third-
15 party ownership of the Coffee Creek ESS. Third parties can compete in the competitive
16 bidding process in the RFP without ownership on PGE property.

⁵ See PGE Exhibit 100, pages 22-25.

⁶ According to the Public Utility Commission of California, Advice 3455-E, submitted on August 15, 2016, was accepted on October 28, 2016. For the advice filing, see: <https://www.sce.com/NR/sc3/tm2/pdf/3455-E.pdf>.

Qualifications

1 **Q. Mr. Murtaugh, please describe your qualifications.**

2 A. I received a Bachelor of Science degree from the University of Nevada in Electrical
3 Engineering in December 2002. I have also received advanced training and coursework
4 from a variety of schools and companies. I obtained my Professional Engineer license in the
5 State of Oregon in December 2007.

6 In 2012, I accepted my current position as a Manager of Transmission and Distribution
7 Planning at PGE. Previously I worked as a Lead Planning Engineer with PGE. Prior to
8 working for PGE, I worked in Transmission Operations with Sierra Pacific Power Company
9 in Reno, Nevada.

10 **Q. Does this conclude your testimony?**

11 A. Yes.

List of Exhibits

<u>Exhibit</u>	<u>Description</u>
301	PGE's Response to ICNU Data Request No. 005

February 6, 2018

TO: Benjamin Fitch-Fleischmann
Riley Peck
Tyler Pepple
Davison Van Cleve, PC

FROM: Robert Macfarlane
Interim Manager, Pricing and Tariffs

**PORTLAND GENERAL ELECTRIC
UM 1856
PGE Response to ICNU Data Request No. 005
Dated January 23, 2018**

Request:

Does PGE anticipate learning lessons related to contracting for and constructing utility-scale storage projects through its Baldock or Coffee Creek proposals? If so, please explain, and specify what lessons will be learned on a project-by-project basis.

Response:

Yes, PGE expects to learn from contracting and constructing the Baldock and Coffee Creek projects. The experience gained from executing one or both of these projects will allow us to develop lessons learned based on what worked well and didn't work well, how the scale affects the project, and what may be improved to apply to future projects.

Typical lessons relate to contracting structures, contract requirements, contractual guarantees, equipment selection and procurement, storage type/technology, system enclosure types, construction methods, scheduling, equipment testing and commissioning, and technical requirements as it relates to contracting for and constructing the Baldock and Coffee Creek projects.