

Exh. RTL-1Tr
Docket UE-23~~0172~~
Witness: Rick T. Link

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFICORP dba
PACIFIC POWER & LIGHT COMPANY

Respondent.

Docket UE-23~~0172~~

PACIFICORP

DIRECT TESTIMONY OF RICK T. LINK

~~March 2023~~ **REVISED April 4, 2023**

TABLE OF CONTENTS

I. INTRODUCTION AND QUALIFICATIONS.....1

II. PURPOSE OF TESTIMONY2

III. GATEWAY SOUTH AND GATEWAY WEST SEGMENT D.16

 A. Need 6

 B. The 2020AS RFP 12

 C. Price-Policy Assumptions..... 17

 D. Modeling Methodology 21

 E. Price-Policy Scenario Results 28

 F. Post-Construction Economic Review 34

IV. CONCLUSION36

EXHIBITS

Exhibit No. RTL-2 Transmission Projects Analysis

1 2021 IRP Update shows a resource need in all years of the planning horizon—starting
2 at 1,584 MW in 2022 and increasing to 6,755 MW in 2040.² In 2025, the first full
3 year that includes Rock Creek I’s operation, the resource need is 1,867 MW, an
4 increase of 240 MW or approximately 15 percent from the 2021 IRP. The higher load
5 reflected in the 2021 IRP Update approaches the level analyzed in the high-load
6 sensitivity conducted in the 2021 IRP.³ And, as discussed later in my testimony, the
7 most recent load forecast is even higher than that assumed in the 2021 IRP Update.

8 Since the Company initiated construction of the Transmission Projects,
9 national tariff policies, global supply-chain issues, and inflationary pressures
10 eliminated some bids on the 2020AS RFP final shortlist. Consequently, PacifiCorp’s
11 procurement was reduced by 902 MW of solar resources and 497 MW of battery
12 storage resources. Additional resources are needed to reduce PacifiCorp’s reliance on
13 the market.

14 **Q. Why is it important to reduce PacifiCorp’s reliance on market purchases?**

15 A. There is a strong consensus that the western United States will face an increasing
16 capacity deficit in the near future.⁴ For example, in December 2020, the Western
17 Electricity Coordinating Council (WECC) issued its Western Assessment of Resource
18 Adequacy Report (WARA).⁵ The WARA was developed based on data collected
19 from balancing authorities describing their own demand and supply projections over
20 the next ten years. The WARA evaluated resource adequacy among six subregions

² *Id.* at Table 4.2.

³ *Id.* at 2.

⁴ *Id.* at Vol. I, Ch. 5.

⁵ *The Western Assessment of Resource Adequacy Report*, Western Electricity Coordinating Council (Dec. 18, 2020)

(<https://www.wecc.org/Administrative/Western%20Assessment%20of%20Resource%20Adequacy%20Report%2020201218.pdf>).

1 under two scenarios—one with and without imports to the subregion. PacifiCorp
2 serves load in three of these subregions—Northwest Power Pool Northwest (NWPP-
3 NW), Northwest Power Pool Northeast (NWPP-NE), and Northwest Power Pool
4 Central (NWPP-C). For each of these scenarios, the WARA considered variations of
5 supply. The most conservative assumes availability of only existing resources, and
6 the most liberal includes availability of new resources under construction, those
7 expected to come online, and those under development. The study found that for each
8 of the three subregions in which PacifiCorp serves load, imports are needed to meet a
9 one-day in ten-year planning threshold. The WARA shows that the NWPP-NW
10 subregion would fall short of the planning threshold in 194 hours (under the most
11 liberal supply case) to 208 hours (assuming availability of only existing resources)
12 without imports. In the NWPP-NE and NWPP-C subregions, the study found that
13 planning threshold is not met in 4,200 hours without imports.

14 These findings highlight that there are real reliability risks associated with
15 relying on supply being available in the market to meet projected load obligations. In
16 addition, WECC’s 2021 WARA issued December 2021 further concludes that not
17 only are resource adequacy risks to reliability likely to increase over the next
18 10 years, it recommends entities take immediate action to mitigate near-term risks
19 and prevent long-term risks. The 2021 WARA projects that “by 2025, each
20 subregion, and the interconnection, will be unable to meet the 99.98%-one-day-in-
21 ten-year-reliability threshold.”⁶

⁶ 2021 *Western Assessment of Resource Adequacy Report*, Western Electricity Coordinating Council (Dec. 17, 2021) (available [here](https://www.wecc.org/Administrative/WARA%202021.pdf) <https://www.wecc.org/Administrative/WARA%202021.pdf>).

1 portfolio that reflected a cost-conscious plan with near-term investments in renewable
2 resources that capture tax credits before they expire or decrease, and new
3 transmission infrastructure to facilitate the interconnection and delivery of these
4 resources. These new resources and transmission investments are lower cost than
5 other resource and transmission alternatives and are necessary to reliably serve our
6 customers.

7 **Q. Are the Transmission Projects a part of the 2021 IRP preferred portfolio?**

8 A. Yes. As described in Volume I, Chapter 4 of the 2021 IRP, the preferred portfolio
9 includes both Gateway South and Gateway West Segment D.1. In the 2021 IRP, the
10 Transmission Projects are assumed to be placed in service by the end of 2024,
11 consistent with current construction timelines discussed by Company witness Vail.
12 The Transmission Projects will enable the addition of new wind facilities that
13 contribute to meeting 1,627 MW of projected resource need beginning 2025.

14 **Q. Are the Transmission Projects part of the 2021 IRP Update?**

15 A. Yes.⁹

16 **Q. Are the Transmission Projects part of the 2021 Clean Energy Implementation
17 Plan?**

18 A. Yes.¹⁰

⁹ PacifiCorp's 2021 Integrated Resource Plan Update, Ch. 7, Action Plan Item 3a–3b, at 103–104 (Mar. 31, 2022) (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021_IRP_Update.pdf).

¹⁰ PacifiCorp's 2021 Clean Energy Implementation Plan, at 16, 21 (Dec. 30, 2021) (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/ceip/PAC-CEIP-12-30-21_with_Appx.pdf).

1 **Q. What new transfer capabilities and interconnection capacity do the**
2 **Transmission Projects add to PacifiCorp's system?**

3 A. The Transmission Projects will increase the transfer capability between the Aeolus
4 substation in eastern Wyoming and the Clover substation located near Mona, Utah by
5 1,700 MW, and enable the interconnection of 2,030 MW of new resources in eastern
6 Wyoming.

7 **Q. Please describe key factors supporting the inclusion of the Transmission Projects**
8 **as prudent investments in this case.**

9 A. The Transmission Projects allow PacifiCorp to implement system improvements,
10 support the full capacity rating of Gateway South and West, and enable the addition
11 of incremental Wyoming renewable resources to support customer needs and deliver
12 value for customers in the most cost-effective way. As discussed by Company
13 witness Vail, the Transmission Projects will also improve overall reliability of the
14 transmission system, and enhance PacifiCorp's ability to comply with mandated
15 reliability and performance standards. Importantly, the Transmission Projects ensure
16 the Company will meet its obligations to reliably accommodate nearly 2,500 MW of
17 interconnection and transmission service requests, including 13 executed
18 interconnection service and transmission service agreements for over 1,600 MW of
19 new wind resources. This includes 500 MW of firm PTP transmission service to a
20 third-party transmission customer under the FERC's jurisdiction.

21 **Q. Please describe the reliability benefits of the Transmission Projects.**

22 A The Transmission Projects directly connect eastern Wyoming to central Utah while
23 enhancing reliability throughout PacifiCorp-served regions. Connecting to the

1 Mona/Clover market hub provides additional flexibility in the use of least-cost
2 resources from eastern Wyoming or southern Utah.

3 Moreover, allowing additional generation resources to interconnect and serve
4 load will lessen PacifiCorp's reliance on volatile and potentially diminishing market
5 transactions to serve load. Given concerns over regional resource adequacy, reducing
6 reliance on the market ensures a stable and reliable supply of capacity and energy
7 going forward.

8 In addition, Gateway South improves reliability by relieving the stress on the
9 transmission system in eastern Wyoming and central Utah. Gateway South relieves
10 stress on the underlying 230-kV transmission system in Wyoming, and it unloads the
11 underlying 345-kV transmission system in central Utah, improving reliability in both
12 regions. Essentially, the 500-kV line brings two distant areas closer to each other in a
13 way that improves regional reliability.

14 Gateway West Segment D.1 creates a new transmission path that allows for
15 additional resource development in the area. The addition of this line improves the
16 reliability of the transmission system during certain identified outage conditions
17 (Dave Johnston to Amasa 230-kV outage or Amasa – Shirley Basin 230-kV outage).
18 Gateway West Segment D.1 is also a prerequisite for interconnecting new resources,
19 including those selected in the 2020AS RFP. Company witness Vail's testimony
20 addresses transmission system reliability and interconnection issues in greater detail.

21 **B. The 2020AS RFP**

22 **Q. Please provide an overview of the 2020AS RFP.**

23 A. The 2020AS RFP was issued to identify resources that could meet the Company's

1 projected resource need identified in the 2019 IRP. Based on the cost-and-
2 performance assumptions for proxy resources in the 2019 IRP, the Company expected
3 that new wind, solar and battery energy storage systems (BESS) were likely to be the
4 most cost-competitive types of resources offered into the 2020AS RFP. However,
5 bidders could offer proposals for other types of resources (*i.e.*, natural gas, pumped
6 storage, *etc.*).

7 **Q. When was the 2020AS RFP issued?**

8 A. After receiving approval from the Utah Commission (docket 20-035-05) and Oregon
9 Commissions (docket UM 2059), PacifiCorp issued the 2020AS RFP on July 7,
10 2020.¹¹

11 **Q. What was the market response to the 2020AS RFP?**

12 A. There was a robust market response that resulted in over 28,000 MW of conforming
13 bids, with an additional 12,500 MW of non-confirming bids. Bids for 24 projects
14 totaling over 9,000 MW of resource capacity located in eastern Wyoming were
15 submitted.

16 **Q. How did the Company evaluate submitted bids?**

17 A. The Company created an initial shortlist that was made public on October 29, 2020.
18 This shortlist included 5,453 MW of renewable resource capacity: 2,974 MW of solar
19 or solar with storage (1,130 MW of battery storage), 2,479 MW of wind, and

¹¹ In Oregon Administrative Rules 860-89-0010, et seq., the Oregon Commission has established competitive bidding requirements for certain resource acquisitions by Oregon's investor-owned utilities. *In the Matter of the Rulemaking Regarding Allowances for Diverse Ownership of Renewable Energy Resources*, Docket No. AR 600, Order No. 18-324, Appendix A (Aug. 30, 2018) (<https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=18-324>). In addition, Utah's Energy Resource Procurement Act requires a competitive solicitation process before the acquisition of renewable resources greater than 300 MW *See* Utah Code Ann. § 54-17-201 *et. seq.*

1 200 MW of standalone BESS. PacifiCorp then initiated a capacity factor evaluation
 2 process (performed by third-party expert WSP Global). The initial shortlist contained
 3 a mix of various ownership structures, including proposals for power-purchase
 4 agreements (PPAs), build-transfer agreements (BTAs), and battery storage
 5 agreements (BSAs).

6 **Q. What resources were selected to the final shortlist?**

7 A. After evaluating a range of potential bid portfolios, and accounting for bid updates
 8 from interconnection study results, the final shortlist included: 1,792 MWs of new
 9 wind capacity (590 MWs as BTAs and 1,202 as PPAs); 1,302 MW of solar capacity
 10 as PPAs; 697 MW of BESS (497 MW of BESS capacity paired with solar bids, and
 11 200 MW as standalone BESS capacity as a BSA).¹²

12 **Q. Which final shortlist resources depend on the Transmission Projects for**
 13 **interconnection?**

14 A. Six final shortlist resources, representing over 1,600 MW of wind generation, require
 15 the Transmission Projects to interconnect to PacifiCorp’s transmission system. Table
 16 1 summarizes the wind resources that require the Transmission Projects to achieve
 17 interconnection.

Table 1. 2020AS RFP Wind Bids Dependent on the Transmission Projects for Interconnection

Project	Bidder	Structure	Capacity (MW)
Cedar Springs IV	NextEra	PPA	350
Boswell Springs	Innergex	PPA	320
Two Rivers	BlueEarth Renewables LLC and Clearway Renew LLC	PPA	280
Anticline	NextEra	PPA	101
Rock Creek I	Invenergy	BTA	190
Rock Creek II	Invenergy	BTA	400

¹² The final shortlist originally included an additional solar bid collocated with BESS. Shortly after the bidder was notified its project was on the final shortlist, it withdrew the bid from the 2020AS RFP. This bid is not included in the total capacity.

1 **Q. Was the 2020AS RFP overseen by independent evaluators?**

2 A. Yes. Consistent with Utah and Oregon Commission’s requirements, the solicitation
3 process was overseen by two independent evaluators—one retained by PacifiCorp
4 and appointed by the Oregon Commission (PA Consulting Group, Inc.), and one
5 retained by the Utah Commission (Merrimack Energy Group).

6 **Q. What were the independent evaluators’ conclusions regarding the 2020AS RFP?**

7 A. Both independent evaluators concluded that the process was fair and transparent, and
8 that the bids selected for the final shortlist were reasonable.

9 **Q. Please describe the Utah independent evaluator’s conclusions regarding the**
10 **2020AS RFP.**

11 A. In its Shortlist Report, the Utah independent evaluator concluded that the RFP was
12 fair, reasonable, and in the public interest.¹³ In particular, the Utah independent
13 evaluator concluded:

- 14 • The market response to the RFP was robust and, “Based on the unbelievable
15 response from the market it is safe to say that the solicitation process resulted
16 in a very competitive process with many more proposals generally submitted
17 than the expected requirements by bubble identified by PacifiCorp.”¹⁴
- 18 • PacifiCorp engaged the bidders throughout the process in a timely manner to
19 ensure that all bidders were treated fairly.
- 20 • All bidders were treated the same, had access to the same information at the
21 same time, and had an equal opportunity to compete.
- 22 • PacifiCorp implemented its evaluation and selection process consistent with
23 its proposed evaluation and selection process as outlined in the RFP in a
24 structured and consistent manner designed to result in the selection of a
25 portfolio of projects that would result in a least cost solution.

¹³ *In re Rocky Mountain Power 2020AS RFP Application*, Docket No. 20-35-05 (Utah Public Service Commission; Sept. 2, 2021) (available ~~here~~ <https://psc.utah.gov/2020/01/24/docket-no-20-035-05/>).

¹⁴ Utah Independent Evaluator Shortlist Report at 74.

- 1 • PacifiCorp subjected all bidders to the same information requirements and
2 conducted a consistent evaluation process with all proposals treated equally in
3 terms of the evaluation methodology and information required of each bidder.
- 4 • The selection process was unbiased with respect to ownership structures, i.e.,
5 the process did not unreasonably favor bids that resulted in a utility-owned
6 resource.
- 7 • The selected bids resulted in lower system cost than a case where no bids were
8 selected and maximized customer benefits while managing risk.

9 **Q. Please describe the Oregon independent evaluator’s conclusions regarding the**
10 **2020AS RFP.**

11 A. In its Closing Report, the Oregon independent evaluator concluded that the final
12 shortlist reflected a diverse portfolio of competitive resources that achieves the
13 resource adequacy and least cost goals set forth in PacifiCorp’s IRP.¹⁵ This was based
14 on the following conclusions:

- 15 • PacifiCorp’s procurement process, scoring methodology and results were fair
16 and free of bias across all bids and bidders.
- 17 • PacifiCorp applied the rules of the 2020AS RFP in an unbiased manner,
18 communicated transparently with the independent evaluators regarding their
19 modelling processes and with stakeholders regarding their decisions.
- 20 • PacifiCorp’s bid price scores were on average consistent with the independent
21 evaluator’s independent scoring methodology.
- 22 • PacifiCorp’s utilization of an outside consultant, WSP Global, to evaluate
23 wind, solar, and battery storage benefitted stakeholders.
- 24 • The final shortlist was reasonably aligned with the 2019 IRP preferred
25 portfolio.

¹⁵ *In re PacifiCorp’s 2020AS RFP Application*, Docket No. UM 2059 (Oregon Commission; Jun. 15, 2021)
(available ~~here~~ <https://apps.puc.state.or.us/edockets/DocketNoLayout.asp?DocketID=22320>).

1 **Q. Did the Oregon Commission acknowledge the shortlist?**

2 A. Yes.¹⁶ Acknowledgement means that the Oregon Commission found that the “final
3 shortlist appears reasonable at the time of acknowledgment and was determined in a
4 manner consistent with [Oregon’s] competitive bidding rules.”¹⁷ The Oregon
5 Commission noted that the final shortlist “is a reasonable capacity and energy blend,
6 with diversity in contract structures (and therefore rate impact profiles), technology
7 types, and geography.”¹⁸

8 **C. Price-Policy Assumptions**

9 **Q. Please summarize the natural gas and CO₂ price assumptions used in the**
10 **economic analysis.**

11 A. The economic analysis of the Transmission Projects includes five price-policy
12 scenarios—MM, MN, HH, LN, and SCGHG. These assumptions can influence the
13 value of system energy, the dispatch of system resources, and PacifiCorp’s resource
14 mix. Consequently, wholesale-power prices and CO₂ policy assumptions affect net-
15 power costs (NPC) benefits, non-NPC variable-cost benefits, and system fixed-cost
16 benefits associated with the Transmission Projects. Because wholesale power prices
17 and CO₂ policy outcomes are both uncertain and important drivers to the economic
18 analysis, it is important to evaluate a range of assumptions for these variables. Table 2
19 summarizes the price-policy scenarios used to analyze the Transmission Projects.

¹⁶ Docket No. UM 2059, Order No. 21-437 (Nov. 24, 2021)
(<https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=21-437>).

¹⁷ *Id.* at 12.

¹⁸ *Id.* at 13.

1 **Q. Did PacifiCorp analyze how other assumptions affect its economic analysis of the**
2 **Transmission Projects?**

3 A. Yes. The economic analysis also included one sensitivity that quantified how changes
4 in new resource capital costs for the two BTA wind projects and capital cost
5 assumptions for the Transmission Projects influenced projected customer benefits.

6 **Q. Company witness Vail's testimony indicates that the Transmission Projects will**
7 **enable up to 2,030 MW of new resources to interconnect in eastern Wyoming.**
8 **Why does your analysis only account for 1,640 MW?**

9 A. The economic analysis reasonably accounted for only those wind resources that were
10 selected to the 2020AS RFP final shortlist.

11 **Q. Does PacifiCorp assume that all the up-front capital costs of the Transmission**
12 **Projects will be paid by its retail customers?**

13 A. No. The cost of the Transmission Projects will be shared between PacifiCorp's retail
14 and wholesale transmission customers. In my analyses, I assumed retail customers
15 would pay 80 percent of the revenue requirement from the up-front capital cost for
16 the Transmission Projects, after accounting for an assumed 20 percent revenue credit
17 from the Company's transmission customers.

18 **E. Price-Policy Scenario Results**

19 **Q. Please summarize the PVRR(d) results calculated from the PLEXOS model.**

20 A. Table 3 summarizes the PVRR(d) results for each price-policy scenario.²⁰

²⁰ Exhibit No. RTL-2 Transmission Projects Analysis

Exh. RTL-1Tr
Docket UE-230172
Witness: Rick T. Link

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFICORP dba
PACIFIC POWER & LIGHT COMPANY

Respondent.

Docket UE-230172

PACIFICORP

DIRECT TESTIMONY OF RICK T. LINK

REVISED April 4, 2023

TABLE OF CONTENTS

I. INTRODUCTION AND QUALIFICATIONS.....1

II. PURPOSE OF TESTIMONY2

III. GATEWAY SOUTH AND GATEWAY WEST SEGMENT D.16

 A. Need 6

 B. The 2020AS RFP 12

 C. Price-Policy Assumptions..... 17

 D. Modeling Methodology 21

 E. Price-Policy Scenario Results 28

 F. Post-Construction Economic Review 34

IV. CONCLUSION36

EXHIBITS

Exhibit No. RTL-2 Transmission Projects Analysis

1 2021 IRP Update shows a resource need in all years of the planning horizon—starting
2 at 1,584 MW in 2022 and increasing to 6,755 MW in 2040.² In 2025, the first full
3 year that includes Rock Creek I’s operation, the resource need is 1,867 MW, an
4 increase of 240 MW or approximately 15 percent from the 2021 IRP. The higher load
5 reflected in the 2021 IRP Update approaches the level analyzed in the high-load
6 sensitivity conducted in the 2021 IRP.³ And, as discussed later in my testimony, the
7 most recent load forecast is even higher than that assumed in the 2021 IRP Update.

8 Since the Company initiated construction of the Transmission Projects,
9 national tariff policies, global supply-chain issues, and inflationary pressures
10 eliminated some bids on the 2020AS RFP final shortlist. Consequently, PacifiCorp’s
11 procurement was reduced by 902 MW of solar resources and 497 MW of battery
12 storage resources. Additional resources are needed to reduce PacifiCorp’s reliance on
13 the market.

14 **Q. Why is it important to reduce PacifiCorp’s reliance on market purchases?**

15 A. There is a strong consensus that the western United States will face an increasing
16 capacity deficit in the near future.⁴ For example, in December 2020, the Western
17 Electricity Coordinating Council (WECC) issued its Western Assessment of Resource
18 Adequacy Report (WARA).⁵ The WARA was developed based on data collected
19 from balancing authorities describing their own demand and supply projections over
20 the next ten years. The WARA evaluated resource adequacy among six subregions

² *Id.* at Table 4.2.

³ *Id.* at 2.

⁴ *Id.* at Vol. I, Ch. 5.

⁵ *The Western Assessment of Resource Adequacy Report*, Western Electricity Coordinating Council (Dec. 18, 2020)

(<https://www.wecc.org/Administrative/Western%20Assessment%20of%20Resource%20Adequacy%20Report%2020201218.pdf>).

1 under two scenarios—one with and without imports to the subregion. PacifiCorp
2 serves load in three of these subregions—Northwest Power Pool Northwest (NWPP-
3 NW), Northwest Power Pool Northeast (NWPP-NE), and Northwest Power Pool
4 Central (NWPP-C). For each of these scenarios, the WARA considered variations of
5 supply. The most conservative assumes availability of only existing resources, and
6 the most liberal includes availability of new resources under construction, those
7 expected to come online, and those under development. The study found that for each
8 of the three subregions in which PacifiCorp serves load, imports are needed to meet a
9 one-day in ten-year planning threshold. The WARA shows that the NWPP-NW
10 subregion would fall short of the planning threshold in 194 hours (under the most
11 liberal supply case) to 208 hours (assuming availability of only existing resources)
12 without imports. In the NWPP-NE and NWPP-C subregions, the study found that
13 planning threshold is not met in 4,200 hours without imports.

14 These findings highlight that there are real reliability risks associated with
15 relying on supply being available in the market to meet projected load obligations. In
16 addition, WECC’s 2021 WARA issued December 2021 further concludes that not
17 only are resource adequacy risks to reliability likely to increase over the next
18 10 years, it recommends entities take immediate action to mitigate near-term risks
19 and prevent long-term risks. The 2021 WARA projects that “by 2025, each
20 subregion, and the interconnection, will be unable to meet the 99.98%-one-day-in-
21 ten-year-reliability threshold.”⁶

⁶ 2021 *Western Assessment of Resource Adequacy Report*, Western Electricity Coordinating Council (Dec. 17, 2021) (<https://www.wecc.org/Administrative/WARA%202021.pdf>).

1 portfolio that reflected a cost-conscious plan with near-term investments in renewable
2 resources that capture tax credits before they expire or decrease, and new
3 transmission infrastructure to facilitate the interconnection and delivery of these
4 resources. These new resources and transmission investments are lower cost than
5 other resource and transmission alternatives and are necessary to reliably serve our
6 customers.

7 **Q. Are the Transmission Projects a part of the 2021 IRP preferred portfolio?**

8 A. Yes. As described in Volume I, Chapter 4 of the 2021 IRP, the preferred portfolio
9 includes both Gateway South and Gateway West Segment D.1. In the 2021 IRP, the
10 Transmission Projects are assumed to be placed in service by the end of 2024,
11 consistent with current construction timelines discussed by Company witness Vail.
12 The Transmission Projects will enable the addition of new wind facilities that
13 contribute to meeting 1,627 MW of projected resource need beginning 2025.

14 **Q. Are the Transmission Projects part of the 2021 IRP Update?**

15 A. Yes.⁹

16 **Q. Are the Transmission Projects part of the 2021 Clean Energy Implementation
17 Plan?**

18 A. Yes.¹⁰

⁹ PacifiCorp's 2021 Integrated Resource Plan Update, Ch. 7, Action Plan Item 3a–3b, at 103–104 (Mar. 31, 2022) (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021_IRP_Update.pdf).

¹⁰ PacifiCorp's 2021 Clean Energy Implementation Plan, at 16, 21 (Dec. 30, 2021) (https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/ceip/PAC-CEIP-12-30-21_with_Appx.pdf).

1 **Q. What new transfer capabilities and interconnection capacity do the**
2 **Transmission Projects add to PacifiCorp's system?**

3 A. The Transmission Projects will increase the transfer capability between the Aeolus
4 substation in eastern Wyoming and the Clover substation located near Mona, Utah by
5 1,700 MW, and enable the interconnection of 2,030 MW of new resources in eastern
6 Wyoming.

7 **Q. Please describe key factors supporting the inclusion of the Transmission Projects**
8 **as prudent investments in this case.**

9 A. The Transmission Projects allow PacifiCorp to implement system improvements,
10 support the full capacity rating of Gateway South and West, and enable the addition
11 of incremental Wyoming renewable resources to support customer needs and deliver
12 value for customers in the most cost-effective way. As discussed by Company
13 witness Vail, the Transmission Projects will also improve overall reliability of the
14 transmission system, and enhance PacifiCorp's ability to comply with mandated
15 reliability and performance standards. Importantly, the Transmission Projects ensure
16 the Company will meet its obligations to reliably accommodate nearly 2,500 MW of
17 interconnection and transmission service requests, including 13 executed
18 interconnection service and transmission service agreements for over 1,600 MW of
19 new wind resources. This includes 500 MW of firm PTP transmission service to a
20 third-party transmission customer under the FERC's jurisdiction.

21 **Q. Please describe the reliability benefits of the Transmission Projects.**

22 A The Transmission Projects directly connect eastern Wyoming to central Utah while
23 enhancing reliability throughout PacifiCorp-served regions. Connecting to the

1 Mona/Clover market hub provides additional flexibility in the use of least-cost
2 resources from eastern Wyoming or southern Utah.

3 Moreover, allowing additional generation resources to interconnect and serve
4 load will lessen PacifiCorp's reliance on volatile and potentially diminishing market
5 transactions to serve load. Given concerns over regional resource adequacy, reducing
6 reliance on the market ensures a stable and reliable supply of capacity and energy
7 going forward.

8 In addition, Gateway South improves reliability by relieving the stress on the
9 transmission system in eastern Wyoming and central Utah. Gateway South relieves
10 stress on the underlying 230-kV transmission system in Wyoming, and it unloads the
11 underlying 345-kV transmission system in central Utah, improving reliability in both
12 regions. Essentially, the 500-kV line brings two distant areas closer to each other in a
13 way that improves regional reliability.

14 Gateway West Segment D.1 creates a new transmission path that allows for
15 additional resource development in the area. The addition of this line improves the
16 reliability of the transmission system during certain identified outage conditions
17 (Dave Johnston to Amasa 230-kV outage or Amasa – Shirley Basin 230-kV outage).
18 Gateway West Segment D.1 is also a prerequisite for interconnecting new resources,
19 including those selected in the 2020AS RFP. Company witness Vail's testimony
20 addresses transmission system reliability and interconnection issues in greater detail.

21 **B. The 2020AS RFP**

22 **Q. Please provide an overview of the 2020AS RFP.**

23 A. The 2020AS RFP was issued to identify resources that could meet the Company's

1 projected resource need identified in the 2019 IRP. Based on the cost-and-
2 performance assumptions for proxy resources in the 2019 IRP, the Company expected
3 that new wind, solar and battery energy storage systems (BESS) were likely to be the
4 most cost-competitive types of resources offered into the 2020AS RFP. However,
5 bidders could offer proposals for other types of resources (*i.e.*, natural gas, pumped
6 storage, *etc.*).

7 **Q. When was the 2020AS RFP issued?**

8 A. After receiving approval from the Utah Commission (docket 20-035-05) and Oregon
9 Commissions (docket UM 2059), PacifiCorp issued the 2020AS RFP on July 7,
10 2020.¹¹

11 **Q. What was the market response to the 2020AS RFP?**

12 A. There was a robust market response that resulted in over 28,000 MW of conforming
13 bids, with an additional 12,500 MW of non-confirming bids. Bids for 24 projects
14 totaling over 9,000 MW of resource capacity located in eastern Wyoming were
15 submitted.

16 **Q. How did the Company evaluate submitted bids?**

17 A. The Company created an initial shortlist that was made public on October 29, 2020.
18 This shortlist included 5,453 MW of renewable resource capacity: 2,974 MW of solar
19 or solar with storage (1,130 MW of battery storage), 2,479 MW of wind, and

¹¹ In Oregon Administrative Rules 860-89-0010, et seq., the Oregon Commission has established competitive bidding requirements for certain resource acquisitions by Oregon's investor-owned utilities. *In the Matter of the Rulemaking Regarding Allowances for Diverse Ownership of Renewable Energy Resources*, Docket No. AR 600, Order No. 18-324, Appendix A (Aug. 30, 2018) (<https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=18-324>). In addition, Utah's Energy Resource Procurement Act requires a competitive solicitation process before the acquisition of renewable resources greater than 300 MW *See* Utah Code Ann. § 54-17-201 *et. seq.*

1 200 MW of standalone BESS. PacifiCorp then initiated a capacity factor evaluation
 2 process (performed by third-party expert WSP Global). The initial shortlist contained
 3 a mix of various ownership structures, including proposals for power-purchase
 4 agreements (PPAs), build-transfer agreements (BTAs), and battery storage
 5 agreements (BSAs).

6 **Q. What resources were selected to the final shortlist?**

7 A. After evaluating a range of potential bid portfolios, and accounting for bid updates
 8 from interconnection study results, the final shortlist included: 1,792 MWs of new
 9 wind capacity (590 MWs as BTAs and 1,202 as PPAs); 1,302 MW of solar capacity
 10 as PPAs; 697 MW of BESS (497 MW of BESS capacity paired with solar bids, and
 11 200 MW as standalone BESS capacity as a BSA).¹²

12 **Q. Which final shortlist resources depend on the Transmission Projects for
 13 interconnection?**

14 A. Six final shortlist resources, representing over 1,600 MW of wind generation, require
 15 the Transmission Projects to interconnect to PacifiCorp’s transmission system. Table
 16 1 summarizes the wind resources that require the Transmission Projects to achieve
 17 interconnection.

Table 1. 2020AS RFP Wind Bids Dependent on the Transmission Projects for Interconnection

Project	Bidder	Structure	Capacity (MW)
Cedar Springs IV	NextEra	PPA	350
Boswell Springs	Innergex	PPA	320
Two Rivers	BlueEarth Renewables LLC and Clearway Renew LLC	PPA	280
Anticline	NextEra	PPA	101
Rock Creek I	Invenergy	BTA	190
Rock Creek II	Invenergy	BTA	400

¹² The final shortlist originally included an additional solar bid collocated with BESS. Shortly after the bidder was notified its project was on the final shortlist, it withdrew the bid from the 2020AS RFP. This bid is not included in the total capacity.

1 **Q. Was the 2020AS RFP overseen by independent evaluators?**

2 A. Yes. Consistent with Utah and Oregon Commission’s requirements, the solicitation
3 process was overseen by two independent evaluators—one retained by PacifiCorp
4 and appointed by the Oregon Commission (PA Consulting Group, Inc.), and one
5 retained by the Utah Commission (Merrimack Energy Group).

6 **Q. What were the independent evaluators’ conclusions regarding the 2020AS RFP?**

7 A. Both independent evaluators concluded that the process was fair and transparent, and
8 that the bids selected for the final shortlist were reasonable.

9 **Q. Please describe the Utah independent evaluator’s conclusions regarding the**
10 **2020AS RFP.**

11 A. In its Shortlist Report, the Utah independent evaluator concluded that the RFP was
12 fair, reasonable, and in the public interest.¹³ In particular, the Utah independent
13 evaluator concluded:

- 14 • The market response to the RFP was robust and, “Based on the unbelievable
15 response from the market it is safe to say that the solicitation process resulted
16 in a very competitive process with many more proposals generally submitted
17 than the expected requirements by bubble identified by PacifiCorp.”¹⁴
- 18 • PacifiCorp engaged the bidders throughout the process in a timely manner to
19 ensure that all bidders were treated fairly.
- 20 • All bidders were treated the same, had access to the same information at the
21 same time, and had an equal opportunity to compete.
- 22 • PacifiCorp implemented its evaluation and selection process consistent with
23 its proposed evaluation and selection process as outlined in the RFP in a
24 structured and consistent manner designed to result in the selection of a
25 portfolio of projects that would result in a least cost solution.

¹³ *In re Rocky Mountain Power 2020AS RFP Application*, Docket No. 20-35-05 (Utah Public Service Commission; Sept. 2, 2021) (<https://psc.utah.gov/2020/01/24/docket-no-20-035-05/>).

¹⁴ Utah Independent Evaluator Shortlist Report at 74.

- 1 • PacifiCorp subjected all bidders to the same information requirements and
2 conducted a consistent evaluation process with all proposals treated equally in
3 terms of the evaluation methodology and information required of each bidder.
- 4 • The selection process was unbiased with respect to ownership structures, i.e.,
5 the process did not unreasonably favor bids that resulted in a utility-owned
6 resource.
- 7 • The selected bids resulted in lower system cost than a case where no bids were
8 selected and maximized customer benefits while managing risk.

9 **Q. Please describe the Oregon independent evaluator’s conclusions regarding the**
10 **2020AS RFP.**

11 A. In its Closing Report, the Oregon independent evaluator concluded that the final
12 shortlist reflected a diverse portfolio of competitive resources that achieves the
13 resource adequacy and least cost goals set forth in PacifiCorp’s IRP.¹⁵ This was based
14 on the following conclusions:

- 15 • PacifiCorp’s procurement process, scoring methodology and results were fair
16 and free of bias across all bids and bidders.
- 17 • PacifiCorp applied the rules of the 2020AS RFP in an unbiased manner,
18 communicated transparently with the independent evaluators regarding their
19 modelling processes and with stakeholders regarding their decisions.
- 20 • PacifiCorp’s bid price scores were on average consistent with the independent
21 evaluator’s independent scoring methodology.
- 22 • PacifiCorp’s utilization of an outside consultant, WSP Global, to evaluate
23 wind, solar, and battery storage benefitted stakeholders.
- 24 • The final shortlist was reasonably aligned with the 2019 IRP preferred
25 portfolio.

¹⁵ *In re PacifiCorp’s 2020AS RFP Application*, Docket No. UM 2059 (Oregon Commission; Jun. 15, 2021)
(<https://apps.puc.state.or.us/edockets/DocketNoLayout.asp?DocketID=22320>).

1 **Q. Did the Oregon Commission acknowledge the shortlist?**

2 A. Yes.¹⁶ Acknowledgement means that the Oregon Commission found that the “final
3 shortlist appears reasonable at the time of acknowledgment and was determined in a
4 manner consistent with [Oregon’s] competitive bidding rules.”¹⁷ The Oregon
5 Commission noted that the final shortlist “is a reasonable capacity and energy blend,
6 with diversity in contract structures (and therefore rate impact profiles), technology
7 types, and geography.”¹⁸

8 **C. Price-Policy Assumptions**

9 **Q. Please summarize the natural gas and CO₂ price assumptions used in the**
10 **economic analysis.**

11 A. The economic analysis of the Transmission Projects includes five price-policy
12 scenarios—MM, MN, HH, LN, and SCGHG. These assumptions can influence the
13 value of system energy, the dispatch of system resources, and PacifiCorp’s resource
14 mix. Consequently, wholesale-power prices and CO₂ policy assumptions affect net-
15 power costs (NPC) benefits, non-NPC variable-cost benefits, and system fixed-cost
16 benefits associated with the Transmission Projects. Because wholesale power prices
17 and CO₂ policy outcomes are both uncertain and important drivers to the economic
18 analysis, it is important to evaluate a range of assumptions for these variables. Table 2
19 summarizes the price-policy scenarios used to analyze the Transmission Projects.

¹⁶ Docket No. UM 2059, Order No. 21-437 (Nov. 24, 2021)
(<https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=21-437>).

¹⁷ *Id.* at 12.

¹⁸ *Id.* at 13.

1 **Q. Did PacifiCorp analyze how other assumptions affect its economic analysis of the**
2 **Transmission Projects?**

3 A. Yes. The economic analysis also included one sensitivity that quantified how changes
4 in new resource capital costs for the two BTA wind projects and capital cost
5 assumptions for the Transmission Projects influenced projected customer benefits.

6 **Q. Company witness Vail's testimony indicates that the Transmission Projects will**
7 **enable up to 2,030 MW of new resources to interconnect in eastern Wyoming.**
8 **Why does your analysis only account for 1,640 MW?**

9 A. The economic analysis reasonably accounted for only those wind resources that were
10 selected to the 2020AS RFP final shortlist.

11 **Q. Does PacifiCorp assume that all the up-front capital costs of the Transmission**
12 **Projects will be paid by its retail customers?**

13 A. No. The cost of the Transmission Projects will be shared between PacifiCorp's retail
14 and wholesale transmission customers. In my analyses, I assumed retail customers
15 would pay 80 percent of the revenue requirement from the up-front capital cost for
16 the Transmission Projects, after accounting for an assumed 20 percent revenue credit
17 from the Company's transmission customers.

18 **E. Price-Policy Scenario Results**

19 **Q. Please summarize the PVRR(d) results calculated from the PLEXOS model.**

20 A. Table 3 summarizes the PVRR(d) results for each price-policy scenario.²⁰

²⁰ Exhibit No. TRL-2C Transmission Projects Analysis

Exh. RTL-2
Docket UE-230172
Witness: Rick T. Link

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFICORP dba
PACIFIC POWER & LIGHT COMPANY

Respondent.

Docket UE-230172

PACIFICORP

EXHIBIT OF RICK T. LINK

Transmission Projects Analysis

April 2023

THIS EXHIBIT HAS BEEN PROVIDED IN EXCEL FORMAT