Investigation No. 17-04-019
Exhibit PAC/1600-I
Witness: Rick T. Link

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

PACIFICORP

Rebuttal Testimony of Rick T. Link

Redline Version

ERRATA

December 2018

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Q. Are you the same ~~Shayleah LaBray~~Rick T. Link who previously submitted testimony in this proceeding on behalf of PacifiCorp d/b/a Pacific Power?

A. Yes.

I. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to rebut Dr. Fisher's testimony on behalf of Sierra Club related to PacifiCorp's system-wide least-cost, least-risk integrated resource planning (IRP) process.

Q. Please summarize your testimony.

A. As described in my opening testimony, PacifiCorp engages in least-cost, least-risk planning on a system-wide basis through its IRP, which is prepared on a biennial basis in odd-numbered years and updated in even-numbered years. The IRP requires extensive modeling and analysis of multiple scenarios, which examine projected fuel costs and market prices, possible dispatch options, potential regulatory compliance costs, and theoretical retirement of generating assets before the end of their depreciable lives. The IRP also takes into account input from stakeholders, including commissioners and commission staff, ratepayer and environmental advocates, market participants, and customers.[1] PacifiCorp's 2017 IRP shows that Dr. Fisher's conclusions are incorrect. Moreover, my testimony addresses factual inaccuracies in Dr. Fisher's testimony.

[1] PacifiCorp routinely has nearly 100 or more stakeholders participate in its IRP public input meetings. Formal proceedings before state commissions allow for interventions and additional discovery.

II. PACIFICORP'S LEAST-COST SYSTEM-WIDE PLANNING

Q. Does Dr. Fisher's testimony agree that PacifiCorp engages in least-cost planning on a system-wide basis?

A. No. While Dr. Fisher does acknowledge that PacifiCorp's planning is done on a system-wide basis, he does not believe that PacifiCorp plans on a least-cost basis.[2] Instead, he asserts that PacifiCorp's IRP "entirely follows the Company's business interests" and does not represent least-cost portfolio planning.[3]

Q. The first justification Dr. Fisher gives to support his view on PacifiCorp's portfolio planning is that the IRP is not conducted transparently or in an open public process. Is Dr. Fisher correct?

A. No. PacifiCorp's biennial IRP undergoes an extensive public input process spanning at least a nine- to ten-month period during which open discussion occurs with stakeholders, where feedback on planning assumptions is provided to the company. For example, beginning in June 2016, PacifiCorp held five state-specific meetings and seven public input meetings, many spanning two days, to facilitate information sharing and collaboration around the 2017 IRP. The public input process covered all facets of the IRP, ranging from specific modeling input assumptions to the portfolio modeling and risk analysis.

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A. No. Dr. Fisher misrepresents the open and transparent stakeholder process that developed and evaluated potential early retirement of PacifiCorp's coal generating assets. In addition to a reference case and five other regional haze scenarios developed and modified with input from stakeholders,[4] PacifiCorp also conducted an endogenous retirement case specifically in response to a request from Sierra Club (Regional Haze Case 6, or RH-6) that allowed its capacity expansion model to choose early retirement or selective catalytic reduction (SCR) equipment installation. This study selected one plant for early retirement and installed SCR equipment on the remaining plants, demonstrating that installation of SCR equipment is lower cost than retiring these coal units early. This scenario, and all regional haze scenarios and supporting assumptions, are detailed in the public input meeting presentation materials[5] and were discussed at the public input meetings by the company's senior vice president of strategy and development, who also responded to stakeholder questions regarding the assumptions and how they were initially developed.

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Among the intervening organizations that participated in formal state commission proceedings on PacifiCorp's 2017 IRP, 13 of them submitted in aggregate over 250 discovery questions. Among those, only two intervening organizations (other than Sierra Club) submitted questions that addressed the company's regional haze analysis, either as part of the question or tangentially as part of the company's response. Those two intervening organizations submitted fewer than 10 questions related to the regional haze analysis, and PacifiCorp provided a substantive response to all of those requests. Dr. Fisher specifically references a request from Public Utility Commission of Oregon (Oregon Commission) Staff to conduct unit-specific coal analysis, which was not submitted to PacifiCorp until September 2017, over five months after the 2017 IRP was filed.[7]

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Q. In regards to the September 2017 Oregon Commission Staff discovery request referenced by Dr. Fisher, he states that the Oregon Commission Staff was seeking an economic analysis of the coal fleet and "was refused."[8] Is this statement accurate?

A. No. PacifiCorp's response to Oregon Commission Staff's discovery request, which Dr. Fisher included as an exhibit to his testimony, contains a detailed explanation of why the Oregon Commission Staff's requested analysis was unworkable.[9] As PacifiCorp explained in its response, the requested analysis would require establishing as many as 24 unique data sets that would take several months to develop and apply to the IRP model runs (Oregon Commission Staff asked if the analysis could be done in 17 days).[10] Moreover, the company explained that the structure of the proposed unit-by-unit analysis did not capture system cost impacts that would result from early retirements at more than one facility, and the results therefore would have limited utility in establishing a least-cost, least-risk resource portfolio. The hypothetical retirement dates at the end of 2022 were also unlikely to influence the 2017 IRP action plan, which identifies resource actions required over the near-term two- to four-year period. For these reasons, PacifiCorp offered to hold a series of stakeholder workshops in early 2018 to define parameters for future coal-unit retirement analysis, with input and engagement from all IRP stakeholders.[11]

[8] Fisher Direct, p. 22 (lines 3–4).
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Q. Dr. Fisher claims that PacifiCorp agreed to undertake the coal asset-retirement analysis only after the Oregon Commission "expressed mounting concern" over PacifiCorp's "continuous refusal."[12] Is this accurate?

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Q. Did the Oregon Commission agree with PacifiCorp's proposal and timing when it acknowledged the company's 2017 IRP in December 2017?

A. Yes.

Q. Dr. Fisher states that PacifiCorp inserted $3 billion of new projects into the 2017 IRP a month before the resource plan was finalized and questions the transparency of the process, claiming that large-scale planning assumptions were altered outside an ongoing public process.[13] Do you agree?

A. No. Dr. Fisher mischaracterizes the nature of the resources selected in PacifiCorp's 2017 IRP preferred portfolio and the public process by which the resource scenarios were reviewed with stakeholders. In his critique, Dr. Fisher is specifically referring to the new wind, transmission, and wind repower projects selected in the 2017 IRP

[12] Fisher Direct, p.22 (line 5).
[13] Fisher Direct, p.22 (lines 11–12).

preferred portfolio. Specifically, the 2017 IRP preferred portfolio includes 1,100 MWs of new wind and a new 500 kV 140-mile transmission line in Wyoming, which are expected to be in service by the end of 2020. The 2017 IRP preferred portfolio also includes repowering 905 MWs of existing wind by the end of 2020. The new wind, transmission, and repowered wind are collectively referred to as the Energy Vision 2020 projects and were selected as part of the least-cost, least-risk combination of resources to offset other more costly resource combinations to meet system-wide load and resource needs over the 20-year planning horizon. Discussion of these projects and related analysis was part of the 2017 IRP public process.

Q. Please describe the timing of PacifiCorp's analysis that included the Energy Vision 2020 projects in the 2017 IRP.

A. In December 2016, PacifiCorp concluded that repowering wind units could generate cost savings if implemented on at least a subset of wind facilities in the fleet. To preserve the repowering option for application at additional facilities and to preserve the option to qualify new wind facilities for the full value of federal production tax credits (PTCs), subject to further review and analysis, PacifiCorp made safe harbor wind equipment purchases at that time. PacifiCorp completed its additional review and expanded economic analysis of wind repowering in early 2017, toward the end of the IRP's public input process. In February 2017, PacifiCorp finalized its IRP analysis of wind repowering.

Also in late 2016 and early 2017, PacifiCorp continued to study and refine its resource portfolios, all of which contained new Wyoming wind resources. In reviewing these resource portfolios, it became clear that the amount of Wyoming wind was limited by transmission constraints. This led PacifiCorp to assess whether additional wind resources enabled by sub-segments of PacifiCorp's Energy Gateway West transmission line, which extends from eastern Wyoming to western Idaho, would further lower system costs. Consequently, after the January public input meeting, PacifiCorp incorporated the sub-segment Aeolus-to-Bridger/Anticline transmission line as a specific sensitivity case in its broader Energy Gateway sensitivity analysis. In late February, PacifiCorp's modeling of four Energy Gateway transmission sensitivities indicated there were potential benefits to including the Aeolus-to-Bridger/Anticline transmission line in the portfolio.

PacifiCorp rescheduled the February 2017 public input meeting to the first of March to enable the company to complete and share its wind repowering analysis, initially incorporated into the IRP process as a portfolio scenario referred to as OP-REP, as well as its analysis of the Energy Vision 2020 new wind and transmission projects. PacifiCorp expedited its analysis of the Energy Vision 2020 projects in the IRP process even though these resource opportunities emerged just a few months before the IRP's filing date; simultaneously, PacifiCorp was also completing its analysis of 32 other potential resource portfolios initially presented in the January 2017 public input meeting.

At the March 2017 public input meeting, PacifiCorp presented this analysis to stakeholders, where it communicated its intention to further refine key assumptions for this sensitivity case. While the pre-filing stakeholder review process of Energy Vision 2020 projects was necessarily limited by the timing of PacifiCorp's analysis, it was in customers' interest to consider these resources and ultimately include them in the 2017 IRP. PacifiCorp explicitly chose to share the results of its analysis with stakeholders as they were being produced. Given the time-sensitivity of these resource opportunities, delaying the IRP to allow additional pre-filing review was not a viable option. Instead, PacifiCorp expeditiously completed the necessary analysis and shared it with IRP stakeholders in real-time. Filing of the 2017 IRP on April 4, 2017, signaled a new stage in the stakeholder review process, not the end of it.

Q. The second argument Dr. Fisher makes in support of his conclusion that PacifiCorp does not engage in least-cost planning is that PacifiCorp does not assess resources on a "consistent and comparable basis."[14] Is this accurate?

A. No. Contrary to Dr. Fisher's claims, PacifiCorp does not only assess new resources against other new resources while ignoring comparative analysis of new resources in relation to the existing coal fleet.[15] First, Dr. Fisher's assertion is based on a misrepresentation of PacifiCorp's response to a data request. The data request from Sierra Club asked if the purpose of an IRP is "'to identify the best mix of resources system wide' as 'least-cost, least-risk' or 'to fill any gap between changes in loads and existing resources.'"[16] PacifiCorp's response plainly states that "[t]he IRP identifies the best mix of least-cost, least-risk resources system wide, *including* the best mix of least-cost, least-risk resources to fill the gap between load and existing generation."[17] This response does not indicate that PacifiCorp believes resource

[14] Fisher Direct, pp. 23 (line 13)–24 (line 19).
[15] Fisher Direct, p. 24 (lines 4–19).
[16] Exhibit JIF-7, Data Request 1.3(b).
[17] *Id.* (emphasis added).

planning is only valuable in identifying new resources and not evaluating PacifiCorp's existing resource base.[18] More importantly, contrary to Dr. Fisher's claim, the 2017 IRP preferred portfolio assumes the early retirement of five existing units (a 3,650 MW reduction in coal capacity) in addition to selecting new, least-cost resources, as discussed above.

Q. Does PacifiCorp only evaluate whether to retire its coal resources when faced with the decision to make a significant capital investment, as Dr. Fisher claims?

A. No. As PacifiCorp's responses to Sierra Club's data requests plainly show, PacifiCorp considers early retirement of existing coal units based on economic analysis of early retirement relative to continued operation, in addition to evaluating early retirement as an alternative to major capital investments.[19] PacifiCorp's 2017 IRP also considered the economic retirement of coal resources, which assesses run-rate operating costs and potential resource replacement costs on a present-value revenue requirement basis.

PacifiCorp addressed its process for considering early retirement of existing coal resources in its supplemental response to Sierra Club Data Request 1.4(d).[20] This is the same data response that Dr. Fisher claims makes PacifiCorp sound like a "secretive government agency."[21]

This inappropriate characterization is refuted by the data response itself. Sierra Club asked if PacifiCorp "ever evaluated" potential early retirement of coal

[18] Fisher Direct, p. 24 (lines 15–19).
[19] *See* Exhibit JIF-16, First Supplemental Response 1.4(d).
[20] Exhibit JIF-16, Request 1.4(d).
[21] Fisher Direct, pp. 24 (line 28)–25 (line 2).

resources for purposes other than a comparison to major capital investments.[22] PacifiCorp responded that, after reviewing the available information and knowledge of its current employees involved in resource planning, it could not confirm or deny what studies may have been completed *over the existence of the utility*, which was the scope of Sierra Club's question.[23] PacifiCorp then proceeded to provide a substantive answer on its decision-making drivers, and confirmed that it does, in fact, consider early retirement of coal resources independent of potential capital investments in its resource planning.[24] PacifiCorp did not refuse to answer Sierra Club, nor was its answer evasive. Dr. Fisher is attempting to re-write facts contained in his own Exhibits.[25]

Q. Dr. Fisher draws three conclusions about PacifiCorp's evaluation of its coal assets: that PacifiCorp views the IRP as a mechanism for evaluating new resources only, not its long-term commitments to its coal plants; that PacifiCorp does not conduct, or intend to conduct, least-cost planning regarding its coal fleet, inside or outside of the IRP; and that PacifiCorp only evaluates its coal fleet on a piecemeal basis when faced with impending capital investment decisions.[26] Are Dr. Fisher's conclusions correct?

A. No. As my rebuttal testimony shows, Dr. Fisher's conclusions are based on misrepresentations or omissions. PacifiCorp uses the IRP as a mechanism to evaluate its existing resources, including early retirement of coal plants, in addition to

[22] Exhibit JIF-16, Request 1.4(d).
[23] Exhibit JIF-16, First Supplemental Response 1.4(d).
[24] *Id.*
[25] Fisher Direct, p. 25 (lines 2–5).
[26] Fisher Direct, pp. 24 (line 20)–25 (line 6).

evaluating how new resources can be used to meet our customer needs over a 20-year planning time frame. Contrary to Dr. Fisher's claims, PacifiCorp conducts least-cost, least-risk planning that considers the disposition of its existing coal fleet in the IRP, and intends to continue doing so in future IRPs. And PacifiCorp evaluates its coal fleet holistically in the IRP process under scenarios other than those that assume impending large capital investments. For example, the regional haze scenarios in the 2017 IRP examine PacifiCorp's entire generation fleet using flexible compliance scenarios to determine the optimal system-wide least-cost, least-risk resource portfolio. These scenarios appropriately consider, as applicable, whether early retirement of a specific unit can avoid the need for large capital investment.

Q. Has Dr. Fisher, or Sierra Club, made arguments in other state utility commission proceedings that are similar to the arguments being made in this docket?

A. Yes. Dr. Fisher filed similar comments on behalf of Sierra Club at the Public Service Commission of Utah (Utah Commission) in response to PacifiCorp's 2017 IRP challenging the company's coal analysis and requesting unit-specific economic coal studies. Sierra Club also filed comments in the 2015 IRP at the Oregon Commission.

Q. How were those arguments addressed by the commissions in other states?

A. The Utah Commission found that PacifiCorp's approach to modeling coal resources was reasonable for the 2017 IRP because PacifiCorp refined its analytical approach beyond that used in the 2015 IRP. In addition, the Utah Commission found that PacifiCorp presented regional haze obligations and incorporated stakeholder feedback in developing its regional haze cases during the public input process and used reasonable legal assumptions related to future compliance requirements, and that PacifiCorp increased the number of modeled scenarios.[27] The Utah Commission also acknowledged the voluntary commitment PacifiCorp made in its reply comments to conduct additional unit-specific coal plant analysis by June 30, 2018, to inform the 2019 IRP public process. The Utah Commission went on to note that it was "mindful, though, of the cautions PacifiCorp expressed in connection with that commitment," and stated that because the "additional analysis will be helpful only if it supplements, rather than replaces, the type of coal plant modeling PacifiCorp utilized for its 2017 IRP."[28]

The Oregon Commission was also unpersuaded by Sierra Club's claims regarding PacifiCorp's planning and regulatory compliance related to coal-fired generation in the 2015 IRP. The Oregon Commission acknowledged all aspects of PacifiCorp's coal resource analysis for compliance with the EPA's regional haze rule, which identified the need to install emissions control equipment or retire the specific coal plants under evaluation.[29] In addition, in its order acknowledging the 2015 IRP, the Oregon Commission directed PacifiCorp to "[u]se the same regional haze assumptions when directly comparing portfolios,"[30] which PacifiCorp did in the 2017 IRP analysis to which Sierra Club objects.

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[27] *PacifiCorp's 2017 Integrated Resource Plan*, Public Service Commission of Utah Docket No. 17-035-16, Report and Order (March 2, 2018), p. 28 (https://pscdocs.utah.gov/electric/17docs/1703516/3005351703516rao3-2-2018.pdf).
[28] *PacifiCorp's 2017 Integrated Resource Plan*, Public Service Commission of Utah Docket No. 17-035-16, Report and Order, p. 28.
[29] *In the Matter of PACIFICORP, dba PACIFIC POWER's 2015 Integrated Resource Plan*, Public Utilities Commission of Oregon Order No. 16-071 (February 29, 2016) pp. 7–8 (http://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=16-071).
[30] *Id.* at Appendix A, p. 2.

Q. Is there any other information in response to Dr. Fisher's testimony that you have not addressed above or would like to include?

A. Yes. Dr. Fisher makes reference to analysis conducted by Sierra Club that indicated over 40 percent of PacifiCorp's coal fleet was "likely" non-economic.[31] I have not reviewed this analysis or its underlying assumptions in detail. However, a cursory review of the structure of the analysis reveals that it cannot be viewed as a credible critique of PacifiCorp's least-cost, least-risk system-wide planning process. It is based on a static view of the future from a single point in time, it does not appropriately consider resource replacement costs, it does not consider system interactions, and it was performed under numerous assumptions. Dr. Fisher's analysis is not relevant to PacifiCorp's demonstration that it conducts its long-term planning on a least-cost, least-risk basis, that this planning is performed system-wide, and that this planning is used to develop the least-cost, least-risk combination of resources to meet projected need across its system over a 20-year planning horizon.

Q. Does this conclude your rebuttal testimony?

A: Yes.

[31] Fisher Direct, p. 22 (lines 10–11) (Dr. Fisher made the same claim in the Utah Commission 2017 IRP proceeding, but the Utah commission did not give credence to Dr. Fisher's argument. *See PacifiCorp's 2017 Integrated Resource Plan*, Public Service Commission of Utah Docket No. 17-035-16, Report and Order (March 2, 2018), pp. 23, 28.

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Q. Did the Oregon Commission agree with PacifiCorp's proposal and timing when it acknowledged the company's 2017 IRP in December 2017?

A. Yes.

Q. Dr. Fisher states that PacifiCorp inserted $3 billion of new projects into the 2017 IRP a month before the resource plan was finalized and questions the transparency of the process, claiming that large-scale planning assumptions were altered outside an ongoing public process.[13] Do you agree?

A. No. Dr. Fisher mischaracterizes the nature of the resources selected in PacifiCorp's 2017 IRP preferred portfolio and the public process by which the resource scenarios were reviewed with stakeholders. In his critique, Dr. Fisher is specifically referring to the new wind, transmission, and wind repower projects selected in the 2017 IRP

[12] Fisher Direct, p.22 (line 5).
[13] Fisher Direct, p.22 (lines 11–12).

preferred portfolio. Specifically, the 2017 IRP preferred portfolio includes 1,100 MWs of new wind and a new 500 kV 140-mile transmission line in Wyoming, which are expected to be in service by the end of 2020. The 2017 IRP preferred portfolio also includes repowering 905 MWs of existing wind by the end of 2020. The new wind, transmission, and repowered wind are collectively referred to as the Energy Vision 2020 projects and were selected as part of the least-cost, least-risk combination of resources to offset other more costly resource combinations to meet system-wide load and resource needs over the 20-year planning horizon. Discussion of these projects and related analysis was part of the 2017 IRP public process.

Q. Please describe the timing of PacifiCorp's analysis that included the Energy Vision 2020 projects in the 2017 IRP.

A. In December 2016, PacifiCorp concluded that repowering wind units could generate cost savings if implemented on at least a subset of wind facilities in the fleet. To preserve the repowering option for application at additional facilities and to preserve the option to qualify new wind facilities for the full value of federal production tax credits (PTCs), subject to further review and analysis, PacifiCorp made safe harbor wind equipment purchases at that time. PacifiCorp completed its additional review and expanded economic analysis of wind repowering in early 2017, toward the end of the IRP's public input process. In February 2017, PacifiCorp finalized its IRP analysis of wind repowering.

Also in late 2016 and early 2017, PacifiCorp continued to study and refine its resource portfolios, all of which contained new Wyoming wind resources. In reviewing these resource portfolios, it became clear that the amount of Wyoming wind was limited by transmission constraints. This led PacifiCorp to assess whether additional wind resources enabled by sub-segments of PacifiCorp's Energy Gateway West transmission line, which extends from eastern Wyoming to western Idaho, would further lower system costs. Consequently, after the January public input meeting, PacifiCorp incorporated the sub-segment Aeolus-to-Bridger/Anticline transmission line as a specific sensitivity case in its broader Energy Gateway sensitivity analysis. In late February, PacifiCorp's modeling of four Energy Gateway transmission sensitivities indicated there were potential benefits to including the Aeolus-to-Bridger/Anticline transmission line in the portfolio.

PacifiCorp rescheduled the February 2017 public input meeting to the first of March to enable the company to complete and share its wind repowering analysis, initially incorporated into the IRP process as a portfolio scenario referred to as OP-REP, as well as its analysis of the Energy Vision 2020 new wind and transmission projects. PacifiCorp expedited its analysis of the Energy Vision 2020 projects in the IRP process even though these resource opportunities emerged just a few months before the IRP's filing date; simultaneously, PacifiCorp was also completing its analysis of 32 other potential resource portfolios initially presented in the January 2017 public input meeting.

At the March 2017 public input meeting, PacifiCorp presented this analysis to stakeholders, where it communicated its intention to further refine key assumptions for this sensitivity case. While the pre-filing stakeholder review process of Energy Vision 2020 projects was necessarily limited by the timing of PacifiCorp's analysis, it was in customers' interest to consider these resources and ultimately include them in the 2017 IRP. PacifiCorp explicitly chose to share the results of its analysis with stakeholders as they were being produced. Given the time-sensitivity of these resource opportunities, delaying the IRP to allow additional pre-filing review was not a viable option. Instead, PacifiCorp expeditiously completed the necessary analysis and shared it with IRP stakeholders in real-time. Filing of the 2017 IRP on April 4, 2017, signaled a new stage in the stakeholder review process, not the end of it.

Q. The second argument Dr. Fisher makes in support of his conclusion that PacifiCorp does not engage in least-cost planning is that PacifiCorp does not assess resources on a "consistent and comparable basis."[14] Is this accurate?

A. No. Contrary to Dr. Fisher's claims, PacifiCorp does not only assess new resources against other new resources while ignoring comparative analysis of new resources in relation to the existing coal fleet.[15] First, Dr. Fisher's assertion is based on a misrepresentation of PacifiCorp's response to a data request. The data request from Sierra Club asked if the purpose of an IRP is "'to identify the best mix of resources system wide' as 'least-cost, least-risk' or 'to fill any gap between changes in loads and existing resources.'"[16] PacifiCorp's response plainly states that "[t]he IRP identifies the best mix of least-cost, least-risk resources system wide, *including* the best mix of least-cost, least-risk resources to fill the gap between load and existing generation."[17] This response does not indicate that PacifiCorp believes resource

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[14] Fisher Direct, pp. 23 (line 13)–24 (line 19).
[15] Fisher Direct, p. 24 (lines 4–19).
[16] Exhibit JIF-7, Data Request 1.3(b).
[17] *Id.* (emphasis added).

planning is only valuable in identifying new resources and not evaluating PacifiCorp's existing resource base.[18] More importantly, contrary to Dr. Fisher's claim, the 2017 IRP preferred portfolio assumes the early retirement of five existing units (a 3,650 MW reduction in coal capacity) in addition to selecting new, least-cost resources, as discussed above.

Q. Does PacifiCorp only evaluate whether to retire its coal resources when faced with the decision to make a significant capital investment, as Dr. Fisher claims?

A. No. As PacifiCorp's responses to Sierra Club's data requests plainly show, PacifiCorp considers early retirement of existing coal units based on economic analysis of early retirement relative to continued operation, in addition to evaluating early retirement as an alternative to major capital investments.[19] PacifiCorp's 2017 IRP also considered the economic retirement of coal resources, which assesses run-rate operating costs and potential resource replacement costs on a present-value revenue requirement basis.

PacifiCorp addressed its process for considering early retirement of existing coal resources in its supplemental response to Sierra Club Data Request 1.4(d).[20] This is the same data response that Dr. Fisher claims makes PacifiCorp sound like a "secretive government agency."[21]

This inappropriate characterization is refuted by the data response itself. Sierra Club asked if PacifiCorp "ever evaluated" potential early retirement of coal

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[18] Fisher Direct, p. 24 (lines 15–19).
[19] *See* Exhibit JIF-16, First Supplemental Response 1.4(d).
[20] Exhibit JIF-16, Request 1.4(d).
[21] Fisher Direct, pp. 24 (line 28)–25 (line 2).

resources for purposes other than a comparison to major capital investments.[22] PacifiCorp responded that, after reviewing the available information and knowledge of its current employees involved in resource planning, it could not confirm or deny what studies may have been completed *over the existence of the utility*, which was the scope of Sierra Club's question.[23] PacifiCorp then proceeded to provide a substantive answer on its decision-making drivers, and confirmed that it does, in fact, consider early retirement of coal resources independent of potential capital investments in its resource planning.[24] PacifiCorp did not refuse to answer Sierra Club, nor was its answer evasive. Dr. Fisher is attempting to re-write facts contained in his own Exhibits.[25]

Q. Dr. Fisher draws three conclusions about PacifiCorp's evaluation of its coal assets: that PacifiCorp views the IRP as a mechanism for evaluating new resources only, not its long-term commitments to its coal plants; that PacifiCorp does not conduct, or intend to conduct, least-cost planning regarding its coal fleet, inside or outside of the IRP; and that PacifiCorp only evaluates its coal fleet on a piecemeal basis when faced with impending capital investment decisions.[26] Are Dr. Fisher's conclusions correct?

A. No. As my rebuttal testimony shows, Dr. Fisher's conclusions are based on misrepresentations or omissions. PacifiCorp uses the IRP as a mechanism to evaluate its existing resources, including early retirement of coal plants, in addition to

[22] Exhibit JIF-16, Request 1.4(d).
[23] Exhibit JIF-16, First Supplemental Response 1.4(d).
[24] *Id.*
[25] Fisher Direct, p. 25 (lines 2–5).
[26] Fisher Direct, pp. 24 (line 20)–25 (line 6).

evaluating how new resources can be used to meet our customer needs over a 20-year planning time frame. Contrary to Dr. Fisher's claims, PacifiCorp conducts least-cost, least-risk planning that considers the disposition of its existing coal fleet in the IRP, and intends to continue doing so in future IRPs. And PacifiCorp evaluates its coal fleet holistically in the IRP process under scenarios other than those that assume impending large capital investments. For example, the regional haze scenarios in the 2017 IRP examine PacifiCorp's entire generation fleet using flexible compliance scenarios to determine the optimal system-wide least-cost, least-risk resource portfolio. These scenarios appropriately consider, as applicable, whether early retirement of a specific unit can avoid the need for large capital investment.

Q. Has Dr. Fisher, or Sierra Club, made arguments in other state utility commission proceedings that are similar to the arguments being made in this docket?

A. Yes. Dr. Fisher filed similar comments on behalf of Sierra Club at the Public Service Commission of Utah (Utah Commission) in response to PacifiCorp's 2017 IRP challenging the company's coal analysis and requesting unit-specific economic coal studies. Sierra Club also filed comments in the 2015 IRP at the Oregon Commission.

Q. How were those arguments addressed by the commissions in other states?

A. The Utah Commission found that PacifiCorp's approach to modeling coal resources was reasonable for the 2017 IRP because PacifiCorp refined its analytical approach beyond that used in the 2015 IRP. In addition, the Utah Commission found that PacifiCorp presented regional haze obligations and incorporated stakeholder feedback in developing its regional haze cases during the public input process and used reasonable legal assumptions related to future compliance requirements, and that PacifiCorp increased the number of modeled scenarios.[27] The Utah Commission also acknowledged the voluntary commitment PacifiCorp made in its reply comments to conduct additional unit-specific coal plant analysis by June 30, 2018, to inform the 2019 IRP public process. The Utah Commission went on to note that it was "mindful, though, of the cautions PacifiCorp expressed in connection with that commitment," and stated that because the "additional analysis will be helpful only if it supplements, rather than replaces, the type of coal plant modeling PacifiCorp utilized for its 2017 IRP."[28]

The Oregon Commission was also unpersuaded by Sierra Club's claims regarding PacifiCorp's planning and regulatory compliance related to coal-fired generation in the 2015 IRP. The Oregon Commission acknowledged all aspects of PacifiCorp's coal resource analysis for compliance with the EPA's regional haze rule, which identified the need to install emissions control equipment or retire the specific coal plants under evaluation.[29] In addition, in its order acknowledging the 2015 IRP, the Oregon Commission directed PacifiCorp to "[u]se the same regional haze assumptions when directly comparing portfolios,"[30] which PacifiCorp did in the 2017 IRP analysis to which Sierra Club objects.

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[27] *PacifiCorp's 2017 Integrated Resource Plan*, Public Service Commission of Utah Docket No. 17-035-16, Report and Order (March 2, 2018), p. 28 (https://pscdocs.utah.gov/electric/17docs/1703516/3005351703516rao3-2-2018.pdf).
[28] *PacifiCorp's 2017 Integrated Resource Plan*, Public Service Commission of Utah Docket No. 17-035-16, Report and Order, p. 28.
[29] *In the Matter of PACIFICORP, dba PACIFIC POWER's 2015 Integrated Resource Plan*, Public Utilities Commission of Oregon Order No. 16-071 (February 29, 2016) pp. 7–8 (http://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=16-071).
[30] *Id.* at Appendix A, p. 2.

Q. Is there any other information in response to Dr. Fisher's testimony that you have not addressed above or would like to include?

A. Yes. Dr. Fisher makes reference to analysis conducted by Sierra Club that indicated over 40 percent of PacifiCorp's coal fleet was "likely" non-economic.[31] I have not reviewed this analysis or its underlying assumptions in detail. However, a cursory review of the structure of the analysis reveals that it cannot be viewed as a credible critique of PacifiCorp's least-cost, least-risk system-wide planning process. It is based on a static view of the future from a single point in time, it does not appropriately consider resource replacement costs, it does not consider system interactions, and it was performed under numerous assumptions. Dr. Fisher's analysis is not relevant to PacifiCorp's demonstration that it conducts its long-term planning on a least-cost, least-risk basis, that this planning is performed system-wide, and that this planning is used to develop the least-cost, least-risk combination of resources to meet projected need across its system over a 20-year planning horizon.

Q. Does this conclude your rebuttal testimony?

A: Yes.

[31] Fisher Direct, p. 22 (lines 10–11) (Dr. Fisher made the same claim in the Utah Commission 2017 IRP proceeding, but the Utah commission did not give credence to Dr. Fisher's argument. *See PacifiCorp's 2017 Integrated Resource Plan*, Public Service Commission of Utah Docket No. 17-035-16, Report and Order (March 2, 2018), pp. 23, 28.