

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 67

In the Matter of

PACIFICORP, dba PACIFIC POWER,

2017 Integrated Resource Plan.

ORDER

**DISPOSITION: 2017 IRP ACKNOWLEDGED WITH CONDITIONS AND
MODIFICATIONS**

This order memorializes our decision, made and effective at the December 11, 2017 Special Public Meeting, regarding the 2017 Integrated Resource Plan (IRP) filed by PacifiCorp, dba Pacific Power. We acknowledge all action items in PacifiCorp's action plan and adopt many modifications and conditions informed by recommendations from PacifiCorp, Staff and other intervenors. In particular, we condition and limit our acknowledgement of PacifiCorp's Energy Vision 2020 projects in order to respond to the unusual timing circumstances caused by expiration of federal Production Tax Credits (PTCs) while recognizing that material uncertainties and issues remain unresolved. Appendix A to this order lists the acknowledged action items and modifications. For a full background on PacifiCorp's 2017 IRP and the intervenors' comments,¹ see the Staff Report.²

I. INTRODUCTION

Our review of PacifiCorp's 2017 IRP involved a complex and dynamic conversation about our IRP acknowledgment standards, the proper timing of resource procurement, a reasonable balance of customer risk and benefits, and short deadlines to maximize the value of the PTC. We appreciate the robust engagement of Staff, intervenors, and interested members of the public, which gave us a broad context for considering PacifiCorp's IRP.

¹ In this proceeding, 11 intervenors submitted written comments: Commission Staff, Oregon Citizens' Utility Board (CUB), Northwest Energy Coalition (NVEC), Oregon Department of Energy (ODOE), Industrial Customers of Northwest Utilities (ICNU), Renewable Energy Coalition (REC), Renewable Northwest, Sierra Club, the Northwest and Intermountain Power Producers Coalition (NIPPC), National Grid USA, and Robert Proctor.

² Staff Report for the December 5, 2017 Special Public Meeting (Nov 21, 2017).

As our public meeting discussions revealed, each Commissioner had different reasons underlying the decisions reached at our December 11, 2017 Special Public Meeting. We also note that we did not reach consensus on all issues. Commissioner Bloom writes separately to address his vote against acknowledging three action items. Chair Hardie and Commissioner Decker also write separately to provide additional reasoning underlying their decisions to acknowledge those three action items with conditions and limitations.

We emphasize that this order does not address all arguments and recommendations raised by the intervenors during this IRP process. Many of our adopted conditions limited and narrowed the scope of our decisions. This order is intended to document those decisions and provide an explanation of key points.

II. IRP PROCESS

We require regulated energy utilities to prepare and file IRPs within two years of acknowledgment of the utility's last plan.³ The IRP is a road map for providing reliable and least cost and least risk electric service to the utility's customers, consistent with state and federal energy policies, while addressing, and planning for, uncertainties. The primary outcome of the process is the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers. After selecting a best cost/risk portfolio, the utility develops a proposed "Action Plan" of resource activities to undertake over the next two to four years to implement the plan.

Our IRP guidelines provide procedural and substantive requirements for utilities to meet in developing their IRPs.⁴ Consistent with our guidelines, a utility's IRP must include the following key components:

- Identification of capacity and energy needs to bridge the gap between expected loads and resources
- Identification and estimated costs of all supply-side and demand-side resource options
- Construction of a representative set of resource portfolios
- Evaluation of the performance of the candidate portfolios over the range of identified risks and uncertainties
- Selection of a portfolio that represents the best combination of cost and risk for the utility and its customers

³ OAR 860-027-0400(3).

⁴ See *In the Matter of Investigation into Integrated Resource Planning*, Docket No. UM 1056, Order No. 07-002 (Jan 8, 2007) and Order No. 07-047 (Feb 9, 2007) (adopting 13 IRP Guidelines); *In the Matter of Investigation into the Treatment of CO₂ Risk in the Integrated Resource Planning Process*, Docket No. UM 1302, Order No. 08-339 (Jun 30, 2008) (refining Guideline 8 addressing environmental costs).

- Creation of an Action Plan that is consistent with the long-run public interest as expressed in Oregon and federal energy policies

In our guidelines, we instruct utilities to use at least a 20-year planning horizon for analyzing resource choices and to account for end effects. To evaluate the cost implications of various portfolios, we direct utilities to use net present value of revenue requirement (NPVRR) as the key cost metric.

In reviewing an IRP, we examine the resource activities in the Action Plan and determine whether to acknowledge them based on the reasonableness of those actions, given the information available at the time. Our decision to acknowledge or not acknowledge an action item does not constitute ratemaking. The question of whether a specific investment made by a utility in its planning process was prudent will be fairly examined in the subsequent rate proceeding. Acknowledgment, or non-acknowledgment, of an IRP is a relevant but not exclusive consideration in our subsequent examination of whether the utility's resource investment is prudent and should be recovered from customers.

III. PacifiCorp's 2017 IRP

A. Projected Resource Needs

In producing its IRP, PacifiCorp quantifies its resource need over a 20 year planning horizon. PacifiCorp states that, in the near-term, it has less contracted or owned generation resources than needed to meet customer load, as evidenced by the presence of front office transactions (FOTs) throughout the planning horizon.⁵ Rather than identifying a specific capacity or energy resource need, PacifiCorp presents a portfolio of incremental acquisition to meet its load projection, including a 13 percent target planning reserve margin, RPS requirements of three states, and planned coal retirements. PacifiCorp's three-prong near-term action plan uses incremental acquisition of: (1) new and repowered wind resources, (2) new demand-side management (DSM), and (3) wholesale power market purchases/FOTs.

B. Preferred Portfolio Development and Overview

PacifiCorp's 2017 IRP modeling and evaluation approach consists of three screening stages used to select a preferred portfolio, including Regional Haze screening, eligible portfolio screening, and final screening. PacifiCorp used System Optimizer (SO) to produce 43 SO portfolios across a range of different planning assumptions. For each SO portfolio, Planning and Risk (PaR) studies are developed for three natural gas price scenarios (low, base, and high) and two carbon dioxide (CO₂) emissions limit assumptions. These cost and risk metrics are used to compare portfolio alternatives.

⁵ FOTs are proxy planning resources that represent short-term firm market purchases to meet customer load.

PacifiCorp developed 24 sensitivity cases that highlight the impact of specific planning assumptions. The result of the final screening stage is the preferred portfolio.

PacifiCorp's preferred portfolio includes a resource procurement plan called "Energy Vision 2020"—with the addition by 2020 of 905 megawatts (MW) of repowered wind resources, 1,100 MW of new wind resources, and a new 140-mile 500 kilovolt (kV) transmission line in Wyoming to access the new wind resources and relieve congestion for existing capacity. The preferred portfolio also assumes retirement of 667 MW of coal-fired generation by the end of 2020. In the longer time frame, PacifiCorp plans for 1,040 MW of additional solar resources to come online from 2028 to 2036, new natural gas resources added in 2029 and 2030, and additional coal retirements of approximately 2,074 MW by 2036.

1. New Wind Resources and Transmission

PacifiCorp identifies Energy Vision 2020 as the least-cost, least-risk option to meet near-term need within the two- to four-year period that otherwise would be filled by uncommitted FOTs, and to meet a long-term energy and capacity need. PacifiCorp states that the timing of its proposed near-term acquisition is intended to capture the maximum value of the PTC,⁶ which is available for resources that satisfy safe harbor requirements and comply with the assumed construction period. PacifiCorp states that its Energy Vision 2020 plan also reduces risks related to market reliance and future compliance with renewable portfolio standards (RPS).

2. Repowered Wind

PacifiCorp's IRP analysis supports repowering 905 MW of existing wind resources by the end of 2020. PacifiCorp explains the scope of the repowering project involves the installation of new rotors with longer blades and new nacelles with higher-capacity generators, which will increase energy output without changing the footprint, towers, foundations or energy collector systems of the wind facilities.

3. Renewable Portfolio Standards

PacifiCorp uses Renewable Energy Certificates (RECs) to meet the annual requirements of Oregon's RPS. RECs, issued per megawatt-hour of qualifying generation produced, may be either bundled with energy or unbundled, where the REC and energy are exchanged separately.⁷ PacifiCorp's current RPS obligation is 15 percent of annual retail

⁶ 26 USC § 45 (establishing a per-kilowatt-hour tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year).

⁷ Use of unbundled RECs is limited to 20 percent of the RPS requirement; this limit does not apply to RECs issued for generation in Oregon by a PURPA qualifying facility. ORS 469A.145.

sales; this increases to 20 percent in 2020, with further increases every five years to arrive at a 50 percent obligation in 2040.

PacifiCorp's proposed Oregon RPS compliance strategy through 2036 includes the addition of the Energy Vision 2020 repowered wind, new wind resources, and transmission in the 2017 IRP preferred portfolio, as well as annual purchases of unbundled RECs, beginning at under 160,000 RECs in 2018.

4. *Demand-Side Management*

PacifiCorp states that, over the first 10 years of the planning horizon, accumulated acquisition of incremental energy efficiency resources meets 88 percent of forecasted load growth from 2017 through 2026 (up from 86 percent in the 2015 IRP). PacifiCorp states that decreased selection of energy efficiency resources relative to the 2015 IRP is driven by reduced loads and reduced costs for wholesale market power purchases and renewable resource alternatives. PacifiCorp states that, in addition to continued investment in energy efficiency programs, the preferred portfolio identifies an increasing role for direct load control programs with total capacity reaching 365 MW by 2036, the end of the planning period.

5. *Wholesale Power Market Purchases*

PacifiCorp explains that market conditions for firm wholesale power purchases, or FOTs, remain favorable, but that reduced loads and continued investment in energy efficiency programs reduce the need for wholesale power purchases relative to the 2015 IRP Update through 2027. Over this period, PacifiCorp estimates that average annual wholesale power purchases are on par with wholesale power purchases projected in the 2015 IRP.

6. *Coal Resources*

PacifiCorp's 2017 IRP preferred portfolio does not include any incremental selective catalytic reduction (SCR) equipment throughout the planning horizon. PacifiCorp states that the 2017 IRP studies a range of Regional Haze compliance scenarios, reflecting potential bookend alternatives that consider early retirement outcomes as a means to avoid installation of expensive SCR equipment. PacifiCorp states that individual unit retirements presented in the IRP are reasonable for planning purposes, but the unit-specific outcomes will ultimately be determined by on-going rulemaking, results of litigation, and future negotiations with partner plant owners, regulatory agencies, and

other vested stakeholders. By the end of the planning horizon in 2036, PacifiCorp assumes 3,650 MW of existing coal capacity will be retired.

7. *Natural Gas Resources*

PacifiCorp explains the first natural gas resource, a 200 MW frame simple cycle combustion turbine (SCCT), is added to the portfolio in 2029, one year later than the first natural gas resource in the 2015 IRP. The first combined cycle combustion turbine (CCCT), 436 MW, is added to the system in 2030, two years later than the first CCCT in the 2015 IRP.

C. *Proposed Action Plan*

PacifiCorp's action plan identifies steps to be taken in the next two to four years to acquire the resources in its preferred portfolio. PacifiCorp proposes supply-side actions of implementing the wind repowering project, issuing a RFP for new wind resources, and acquiring front office transactions. PacifiCorp proposes demand-side management actions through acquisitions of incremental energy efficiency. PacifiCorp proposes transmission actions of pursuing a portion of the Energy Gateway segment D.2 (Aeolus to Bridger/Anticline) and completing the Wallula to McNary transmission segment.

IV. DISCUSSION

We focus our discussion on PacifiCorp's proposed action items. For each proposal, we summarize PacifiCorp's proposal, very briefly note some intervenors' comments, and explain our resolution.

A. *Energy Vision 2020*

Three action items comprise Energy Vision 2020, covering wind repowering, new wind resources, and the Aeolus to Bridger/Anticline transmission line. Specifically, Action Item 1a describes PacifiCorp's plan to repower existing wind resources. PacifiCorp asserts the wind repowering project will provide net benefits to customers by increasing energy production, reducing operating costs, and requalifying PacifiCorp's existing wind resources for PTCs, which expire 10 years after a facility's original commercial operation date. To achieve the full PTC benefits, PacifiCorp must complete the wind repowering project by the end of 2020.

Action Items 1c and 2a describe PacifiCorp's plan for new wind resources and a new transmission line. Action Item 1c describes the company's acquisition of at least 1,100 MW of new Wyoming wind resources that will capture a time-limited resource opportunity arising from the expiration of PTCs. The proposed wind resources will be acquired in conjunction with Action Item 2a, which describes a new 140-mile, 500 kilovolt (kV) transmission line and associated infrastructure running from the new Aeolus

substation near Medicine Bow, Wyoming, to a new annex substation, Bridger/Anticline, which will be located near the existing Jim Bridger substation (Aeolus to Bridger/Anticline line). PacifiCorp states the transmission resource is necessary to relieve existing congestion and will enable interconnection of the proposed wind resources into PacifiCorp's transmission system. PacifiCorp asserts that the proposed new wind resources net of PTC benefits, when combined with the transmission resource, are expected to provide economic benefits for PacifiCorp's customers, if both resources are operational by the end of 2020.

1. Comments

Staff recommends we not acknowledge these action items, or alternatively incorporate strong ratepayer protections against several different risks, including capacity factor shortfall, PTC decrease, commercial operation date delay, changes in official forward price curve for energy, and construction cost overruns. Staff's recommendations are grounded in its view that there is no resource need to which the Energy Vision 2020 projects respond. CUB and ICNU largely share this view and agree with Staff that the benefits are too small compared to the risks.⁸ They propose either modeled revenues being used for net power cost proceedings, or an alternative form of ratemaking that would allow rate recovery with a showing of net benefits. ODOE generally supports early renewable acquisition as consistent with the state's decarbonization goals, but asks PacifiCorp to quantify the carbon reductions. NWEC recommends acknowledgement of the new wind and repowering projects and a broader transmission assessment prior to acknowledging new transmission. Renewable Northwest supports acknowledgment of these items.

PacifiCorp responds that Energy Vision 2020 is a continuation of its renewable trajectory. The company states that the Energy Vision 2020 projects leverage PTCs to provide least-cost, committed resources to serve customer load. PacifiCorp states that these resources will otherwise be procured at some later date without the PTC savings. PacifiCorp argues that the IRP is not narrowly focused on a short-term capacity need, but rather represents a long-term plan that balances short-term opportunities with long-term risks.

2. Resolution

We acknowledge Energy Vision 2020 Action Items 1a, 1b, and 2a, subject to the following conditions and limitations that we adapted from proposals by Staff and PacifiCorp:

⁸ CUB supports acknowledgment of repowering because the benefits were larger and the action could be viewed in context of a company's continuing obligation to optimize efficiency and performance of its existing resource fleet.

- Given the uncertainty at this time regarding the outcome of the 2017R RFP, the result of any RFP for the engineering, design, and construction of the Aeolus to Bridger/Anticline transmission projects, and the outcome of recent tax reform efforts on the federal level, PacifiCorp must:
 - Provide an updated economic analysis with the request for acknowledgement of the final shortlist from the 2017R RFP;
 - Update its analysis of the Energy Vision 2020 projects as part of its 2017 IRP Update, including any changes resulting from the 2017R RFP or changes to critical assumptions, such as availability of tax credits, corporate tax rate, then-current cost-and-performance data for repowered wind resources, cost-and-performance data from the 2017R RFP final shortlist, and cost assumptions for the transmission projects; and
 - Provide quarterly updates to the Commission and Staff as development of the projects chosen in the 2017R RFP and the transmission projects proceed (through the date the projects go into service).
- The risk of proceeding with the Energy Vision 2020 projects remains with PacifiCorp unless and until the Commission completes a prudence review and approves cost recovery of these resources in rates. Recovery may be conditioned or limited to ensure customer benefits remain at least as favorable as IRP planning assumptions.
 - For uncertainties that will be resolved by the time of the projects' commercial operation date (pre-COD risks), we acknowledge the projects only insofar as customers do not bear the risk of construction cost overruns, delays or other factors that impact PTC value, or project costs and expected capacity factors that are less favorable than the assumptions presented in the IRP.
 - For uncertainties that may persist beyond project commercial operation date (post-COD risks), such as project performance, tax policy changes, and resource value relative to market, we will carefully scrutinize the net benefits during future shortlist acknowledgement, IRP Update filing, and rate recovery proceedings. We intend to ensure that customer risk exposure is mitigated appropriately, and recovery may be structured to hold PacifiCorp to the cost and benefit projections in its analysis.

- PacifiCorp must provide the Dave Johnston early retirement transmission analysis to the Commission and parties in this proceeding once the third-party review and validation has been finalized.

In making this decision on PacifiCorp's Energy Vision 2020 action items, we share Staff's and the intervenors' struggles with the abrupt presentation of PacifiCorp's plan and rigidity of its procurement proposal. PacifiCorp's procurement plans presented in pre-IRP planning meetings changed dramatically to what the company proposed in its filed IRP and supplemental analysis. This left many stakeholders unable to support the 2017 IRP, as they had little chance for input and for comparing the proposal with alternatives.

Intervenors presented us with vigorously opposing viewpoints not only as to whether the projected customer economic benefits of PacifiCorp's Energy Vision 2020 projects outweigh the risks of changing cost assumptions and future conditions, but also as to whether our IRP policy limits acknowledgment to resources that are needed during the action plan window to avoid system reliability impacts to customers that market purchases are unable to address. Essentially, PacifiCorp determined there was customer benefit to displacing FOTs with long-term resource investment while stakeholders saw the level of past FOT activity to be a reasonable level of FOTs going forward, thus making the EV 2020 investments unnecessary. We were unable to reach a full consensus on this complex issue through public meeting deliberations. Going forward, we expect the planning process to be transparent and to provide a robust forum for all stakeholders and the Commission to address system resource needs and evaluate all available resource options to meet system needs in the least cost and least risk manner.

Nonetheless, we recognize that expiring tax incentives represent a time-limited opportunity that could significantly benefit customers. Consequently, we have narrowed our acknowledgement in an unusual manner. Since the company must act soon to capture the full value of the expiring tax incentives, we have explicitly limited our acknowledgement in order to make clear that we intend to protect customers going forward, while still giving the company the flexibility to try to capture the significant economic benefits that the company's planning assumptions show PTC-enabled resources would deliver to customers.

Limiting our acknowledgment to PacifiCorp's planning assumptions is an unusual step that responds to the unusual difficulties of this planning cycle. Although we do not definitively resolve questions surrounding need, it should be apparent that when a utility does not need to take action within the action plan window to address regulatory

compliance or reliability needs in the near-term, we will pay significantly more attention to near-term cost impacts and longer-term cost risks.⁹

We reaffirm our commitment to the fundamentals of our IRP precedent, identifying a preferred portfolio that is a least-cost, least-risk portfolio of resources to meet customer capacity and energy needs. We have adopted the above conditions and limitations in response to the timing exigencies associated with PTC availability.

The adopted conditions and limitations also highlight and make explicit the fundamental principle that, regardless of acknowledgment, any resource investment decisions ultimately rest firmly with the company.¹⁰ PacifiCorp has explained that in the next few months it will have third-party validation of performance assumptions, and more clarity on regulatory and commercial uncertainties. We recognize the off-ramps in PacifiCorp's action plan, and acknowledge only the plan as presented, recognizing that any number of variables may change. Changes in material assumptions, as always, require a utility to re-evaluate and course correct from the plan presented.¹¹

B. Additional Transmission Action

PacifiCorp requests acknowledgement of an action item to complete construction of the Wallula to McNary transmission line. Staff recommends acknowledgement of this action item.

We acknowledge this action item, but noted the concerns previously raised in our review of PacifiCorp's 2015 IRP.¹²

C. Energy Efficiency/Class 2 DSM

PacifiCorp's Action Item 4a requests acknowledgement of cost-effective Class 2 DSM (energy efficiency resources) as shown in its action plan.

⁹ *In the Matter of Portland General Electric Co., 2016 Integrated Resource Plan*, Docket No. LC 66, Order No. 17-386 (Oct 9, 2017).

¹⁰ *See In the Matter of the Investigation into Least-Cost Planning for Resource Acquisitions by Energy Utilities in Oregon*, Docket No. UM 180, Order No. 89-507 at 6 (Apr 20, 1989) (explaining, "The Commission does not intend to usurp the role of utility decision-maker. Utility management will retain full responsibility for making decisions and for accepting the consequences of the decisions. Thus, the utilities will retain their autonomy while having the benefit of the information and opinion contributed by the public and the Commission * * *").

¹¹ *See e.g.*, PacifiCorp's Response to Independent Evaluator's Comments on PacifiCorp's Termination of the 2012 RFP Process at 9, Docket No. UM 1208 (May 21, 2009) ("The Company's ultimate obligation is to find the best solution for its customers with the lowest risk-adjusted cost. It is not the purpose of the RFP to displace management's prudent judgment in seeking the lowest cost solutions for customers or to justify a decision to acquire a resource costing over double historical costs just because it is the best result of an RFP.").

¹² *In the Matter of PacifiCorp, dba Pacific Power, 2015 Integrated Resource Plan*, Order No. 16-071 at 9-10 (Feb 29, 2016).

1. Comments

Staff believes energy efficiency is underrepresented as a resource because the Energy Trust of Oregon (ETO) historically acquires more savings than identified in the IRP. NWECC recommends not acknowledging Action Item 4a until PacifiCorp improves its methodology for Class 2 DSM that identifies all cost effective conservation throughout its system. NWECC maintains that PacifiCorp must improve their conservation potential studies and produce more accurate and effective forecasting of energy efficiency.

PacifiCorp responds that ETO uses a blended utility value to assess the cost effectiveness of energy efficiency measures, and this blended value may inflate the value of energy efficiency and lead to higher levels of acquisition than what is modeled in the IRP. However, PacifiCorp agreed to modifications to Action Item 4a, described below.

2. Resolution

We acknowledge PacifiCorp's energy efficiency action item with the addition of the modification agreed to by PacifiCorp and Staff. PacifiCorp agrees to hire an independent consultant to conduct an analysis by the next IRP that identifies and compares the differences between ETO and PacifiCorp's energy efficiency forecasts with ETO's actual achieved savings in Oregon and PacifiCorp's achievements in other states. Early in the 2019 IRP process, PacifiCorp will hold a DSM technical workshop to review and receive input regarding how the company models energy efficiency potential in the IRP.

D. Wholesale Power Market Purchases (FOTs)

Several intervenors discussed issues with FOTs, including whether displacing FOTs could constitute a resource need, whether PacifiCorp underestimated seasonal price impacts and overestimated availability, and the proper energy, capacity, and hedging value for FOTs.

To help address these issues in future IRPs, we adopted Staff's three modifications to the FOT action item. First, PacifiCorp is to report back in its 2017 IRP Update as to current and forecasted FOTs through the planning window and any changes in assumptions since the 2017 IRP. Second, in the 2019 IRP, PacifiCorp is to repeat its studies to support reliance on market purchases. Finally, in the 2019 IRP, PacifiCorp is to specifically address the cost and risk tradeoffs between any generating resource and the market. This additional analyses should be helpful and relevant to how we approach this question in the future.

E. Miscellaneous Items

Staff, Sierra Club, CUB, and ODOE request the company perform additional analysis on the economics of coal unit retirements. PacifiCorp agrees to perform 25 system

optimizer (SO) runs, one for each coal unit and a base case. PacifiCorp agrees to summarize the results providing a table of the difference in present value of revenue requirement (PVRR) resulting from the early retirement of each unit, an itemized list of coal unit retirement costs assumptions used in each SO run, and a list of coal units that would free up transmission along the path from the proposed Wyoming wind projects if retired. PacifiCorp is to provide this information by June 30, 2018. If there is a dispute about modeling in the meantime, PacifiCorp, Staff and intervenors should first attempt to resolve it informally, but if that fails, Staff may report back to us at a public meeting before the 2019 IRP is filed. A Commissioner workshop will be scheduled to review this analysis once it is complete.

In addition, Renewable Energy Coalition asserts that the company should be required to actually study the capacity benefits that qualifying facilities (QFs) provide, as directed in docket UM 1610.¹³ PacifiCorp responds that it has complied with the order by not assuming QFs will renew. We acknowledge that non-renewal may not be the best planning assumption when many (or most) QFs do, in fact, renew, but question the value of additional studies of the capacity of renewing QFs. We direct Staff to work with intervenors and bring this issue to a public meeting so that we can make a decision regarding whether a new study of existing QF capacity would be useful and how existing QF contract renewals should be modeled in the IRP.

V. ORDER

IT IS ORDERED that:

1. The Integrated Resource Plan filed by PacifiCorp is acknowledged as described with the terms of this order and the attached Appendix A.
2. PacifiCorp is directed to provide updated economic analysis with its request for acknowledgment of the final shortlist from the 2017R RFP.
3. PacifiCorp is directed to update its analysis of the Energy Vision 2020 projects as part of its 2017 IRP Update.
4. PacifiCorp is directed to provide quarterly updates to the Commission and Staff as development of the projects chosen in the 2017R RFP and the transmission projects proceed (through the date the projects go into service).

¹³ *In re Investigation into Qualifying Facility Contracting and Pricing*, Docket No. UM 1610, Order No. 16-174 at 19 (May 13, 2016) (“We agree with Staff and the Joint QFs that a certain amount of capacity may not be valued if utilities assume in their IRPs that existing QFs nearing contract expiration will automatically renew. We direct each utility to work with parties to address this issue in its next IRP.”).

5. PacifiCorp is directed to provide Dave Johnston early retirement transmission analysis to the Commission and parties in this proceeding.
6. PacifiCorp is directed to perform the system optimizer runs for each coal unit and a base case and provide the results to the parties in LC 67 by June 30, 2018, and Staff to update the Commission prior to June of any delays or difficulties.

Made, entered, and effective APR 27 2018.

By the Commission. Chair Hardie is concurring in part with a separate statement below.
Commissioner Bloom is dissenting in part with a separate statement below.
Commissioner Decker is concurring in part with a separate statement below.

Chair Hardie, concurring in part:

Given the unique facts and the time-limited opportunities presented here, I agree with Commissioner Decker that acknowledging PacifiCorp's EV 2020 action items with conditions to protect customers is both within our authority and consistent with the public interest. I write separately to clarify a few points regarding my view of our "need" standard. I also address my decision to acknowledge PacifiCorp's EV 2020 investments.

A. The Concept of Need Is a Meaningful Part of Our IRP Analysis

In my view, the concept of utility need continues to be a meaningful part of our IRP analysis, though it was subject to a fair amount of criticism in these proceedings. Our current regulatory system contemplates that ratepayers and utilities share certain risks of a utility's long-term investment so the utility can continue to provide safe, reliable electric service and to attract the capital to do so.¹⁴ An identified need (whether that is a system need or a regulatory compliance need) can provide a reasoned basis for regulators to acknowledge a long term investment, even if that investment presents risks. In fact, a projected need provides good reason for regulators to actively encourage certain resource investments and expenditures of capital.¹⁵

¹⁴ For example, in the 1980s, state and federal energy policy encouraged utility investment in new nuclear plants, believing those plants to be the least-cost, least-risk response to projected energy shortages. By providing some assurance of rate recovery for prudently incurred costs, our system made the construction of such projects possible despite their high cost and long construction times.

¹⁵ Consistent with this theme, our IRP process has minimized discussion of rate impacts of proposed near-term investments. If an investment is unavoidable in the near term, the near-term rate impacts may be unavoidable to some extent, too.

A hypothetical pure “economic opportunity,” by contrast, involves investments that, in theory, could be shifted to later years without impacting reliability or regulatory compliance. An “economic opportunity” could raise the question of whether *current* ratepayers should be forced to pay for resources that will not be needed for a decade. A large early investment could provide benefits over the long-term, but might have considerable near-term rate impacts or long-term risks which we might feel compelled to mitigate as part of our regulatory oversight. And, as we discussed in PGE’s most recent IRP docket, the modeling required by our current IRP process cannot always comfortably take into account the risks associated with longer-term investments in an industry that is rapidly changing.

If an investment opportunity is a clear winner by all measures, I agree there may be good reason to acknowledge that investment well ahead of need.¹⁶ But Commission-mandated utility resource planning is a precursor to a Commission ratemaking determination and ordinarily informs a later prudence finding.¹⁷ The closer in time the need for a utility investment is, the more certain the Commission can be that the proposed investment is not excessive and that the cost projections behind it are sound. In short, I believe the concept of need has provided a check to keep our IRP acknowledgement and later ratemaking treatment reasonably aligned, and has helped to ensure that ratepayers are not required to fund excessive capital investment.

I recognize that our approach to the concept of need and the appropriate time horizon for investments is something we will continue to grapple with. Society is increasingly asking utilities and our regulatory system to do more than they have in the past. We may need to find new ways of thinking about how to properly evaluate investments that fall more on the economic opportunity side of the spectrum than on the side of nearer-term need, particularly when other benefits can be attributed to the investments. Until then, however, I believe we should be reluctant to discard historical ratepayer safeguards that are implicitly part of our current IRP review process without adequate replacement.

B. EV 2020’s Ratepayer Benefits and Evaluating Long-Term Risk

On the whole, PacifiCorp’s modeling shows that the EV 2020 projects have net ratepayer benefits. As we have stated in the past, however, a modeling result alone is not enough to demonstrate that an investment is least-cost and least-risk. We must also apply “subjective judgment when reviewing [a utility’s IRP] modeling and risk analysis

¹⁶ Appropriate timing also depends on the resource at issue: energy storage can be deployed in months, while transmission lines can require decades of planning—the appropriate time horizon for planning, first steps, and investment are relative.

¹⁷ As the Commission noted when it adopted least-cost planning, consistency of resource investments with least-cost planning principles is a factor the Commission will consider in judging prudence. Order 89-507 at 7. “Rates are relevant to the planning process.” *Id.* at 10.

results.”¹⁸ The modeling results must be backed up with a thoughtful evaluation of the relative risks and benefits of modeled results while keeping in mind the ends our regulation is intended to accomplish. The facts in this case are challenging.

First, there is reasonable disagreement about whether PacifiCorp’s EV 2020 investments respond to a system “need.” PacifiCorp explains that in the near-term, FOTs are partially displaced; and, in the long-term, the proposed EV 2020 resources defer the need for other, higher-cost resources.¹⁹ FOTs have proven to be flexible, reliable, and affordable market options to serve PacifiCorp’s load. While technically uncommitted, FOTs have also been viewed as filling a resource need, and the company has been considered resource sufficient while relying on them. Thus, it is not surprising that there was some confusion over how to view the company’s current resource position and the proposal to invest in long-term resources. Given this ambiguity, it is not clear that the time horizon for the company’s generation and transmission needs would itself cause us to encourage significant long-term investments.

Second, although PacifiCorp’s modeling reasonably demonstrates net customer benefits, several important risk elements stand out. Capital investments carry certain risks, but just as importantly, assumptions about market conditions, policy and tax incentives, regulatory issues, technology costs, and a host of other factors could all be meaningfully different well before the investments are strictly needed. This challenge is exacerbated when certain economic benefits ascribed to the investments are nearly a decade away.²⁰ As Staff notes, even minor changes to modeling assumptions could mean the costs of the new investments outweigh their potential financial benefits. Overall, it is not evident that the ratepayer benefits of the EV 2020 investments are so clear—or that the costs and risks so low—that they justify acknowledgement and the shifting of investment risk that follows.

C Reasons to Consider Acknowledgement with Conditions

Despite these concerns above, I ultimately believe there is good cause to acknowledge the investments with the conditions imposed during our deliberations.²¹ PacifiCorp is

¹⁸ Order No. 10-066 at 14.

¹⁹ PacifiCorp’s Response to Staff’s Public Meeting Memo at 7. Over the longer term, PacifiCorp explains that it has a 395 MW energy and capacity need beginning in 2028. *Id.* at 4.

²⁰ See, e.g., Richard J. Pierce, Jr., *The Regulatory Treatment of Mistakes in Retrospect: Canceled Plants and Excess Capacity*, 132 U. Pa. L. Rev. 497 a 509 (1984) (*Pierce*) (observing that the difficulty of forecasting customer demand, fuel prices, availability of power from other sources, construction costs, and costs of capital over the construction timeframe for a major plant—let alone its operational life—is nearly impossible, and that “[e]ven forecasts of only a few of these factors made by well-qualified specialists and covering much shorter time periods have often proven extremely unreliable.”).

²¹ As we noted in the majority opinion, the risk of proceeding with the EV 2020 projects remains with PacifiCorp unless and until the Commission completes a prudence review and approves cost recovery of these resources in rates. Recovery may be conditioned or limited to ensure customer benefits remain at least as favorable as IRP planning assumptions.

confident the benefits of the EV 2020 projects will materialize; other parties are less confident, and still others see their promise. An acknowledgement with conditions recognizes the potential benefits of the investments, particularly those related to the expiration of PTCs, while the conditions will help protect ratepayers from some of the more uncertain benefits of the projects.²²

An acknowledgement with conditions is not particularly satisfying, but I believe it is appropriate here. The EV 2020 projects have a now-or-never fact pattern that makes it difficult from a timing perspective to seek additional analysis; moreover, the uncertainties of analyzing long-term risk discussed above makes it impractical to think that additional information will meaningfully assist our review.

Although our decision to acknowledge with conditions does not dictate any future ratemaking decision, it will help inform any future request for rate recovery. The conditions explicitly affirm that the risks of proceeding with the EV 2020 investments remain with PacifiCorp until this Commission completes a prudence review and approves cost recovery of these resources. During any future rate proceeding, the Commission may condition or limit recovery to ensure customer benefits remain at least as favorable as IRP planning assumptions.²³ PacifiCorp can proceed with these risks in mind.



Lisa D. Hardie / g'
Lisa D. Hardie
 Chair

²² PacifiCorp argues that we can address the ratepayer risks through our traditional prudence review. A prudence review asks whether a utility action was reasonable given what was known or should have been known at the time the decision was made. As prudence reviews can only consider information known at the time the investment was made, any negative impacts from industry and market changes would likely be borne by ratepayers.

²³ A public utility commission "is not bound to the use of any single formula or combination of formulae in determining rates," as ratemaking inherently involves the making of "pragmatic adjustments" over time. *Federal Power Comm'n. v. Hope Natural Gas Co.*, 320 U.S. 591 at 602 (1944); see also *Verizon Commc'ns., Inc. v. FCC*, 535 U.S. 467, 486-489, 526-527 (2002).

Commissioner Bloom, *dissenting in part:*

Throughout two Commissioner workshops and two public meetings, I raised questions about the need for Energy Vision 2020 projects, about the risks of such large investments, and about the purpose and effect of conditional acknowledgement. Ultimately, I declined to acknowledge the Energy Vision 2020 action items, and I write separately to explain my vote.

Along with many of the parties, I questioned PacifiCorp on the abrupt presentation of Energy Vision 2020 projects. I noted the radical shift from early IRP drafts that proposed no new resources for 10 years. Staff, parties, and my fellow Commissioners raised extensive concerns about whether the company had a “resource need” that Energy Vision would meet, or whether the projects were more accurately characterized as an economic benefit for the company and customers. For such an unusual investment of this size, I expected a consistent, clear showing of a resource need that justifies the expense. New resource acquisition cannot and should not be divorced from need.

My concerns over the resource need are compounded by the risks associated with Energy Vision 2020. I questioned PacifiCorp over changing corporate tax rates and changing PTC benefits, recognizing that changes to either of these would significantly affect the project economics. I opined that Energy Vision is too big, too costly, and too risky for the potentially small benefits.

I considered PacifiCorp’s proposed conditions to acknowledgement, including that our acknowledgement could not be used in a future proceeding to support favorable rate-making prudence. I declined to adopt this condition because I question the meaning of such a conditioned-acknowledgment in light of the scope, standards, and precedent of our IRP least-cost and least-risk planning principles.

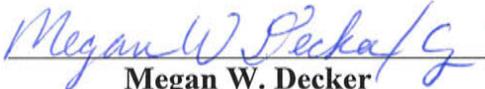
Because of my questions over whether Energy Vision 2020 is needed, whether project risks outweigh its benefits, and my reluctance to modify our IRP standards with novel conditions, I voted a “soft” no on acknowledging these action items. My vote was soft because I am generally very sympathetic to renewable development, and do not seek to prevent PacifiCorp from going forward with its investment plans without acknowledgement, with a full opportunity to establish prudence of its actions in a future rate proceeding.



Stephen M. Bloom
Stephen M. Bloom
Commissioner

Commissioner Decker, concurring in part:

I agree with my colleagues' comments that resource need plays an important role in our oversight of resource planning. As we recognized recently in Order No. 17-386, "[h]ow utilities characterize need and assess risk and uncertainty within their IRPs and how we integrate that analysis into our review, however, must evolve."²⁴ I look forward to working with all stakeholders as we examine our resource planning process to meet changes within the utility industry.


Megan W. Decker
Commissioner



²⁴ *In the Matter of Portland General Electric Co., 2016 Integrated Resource Plan*, Docket No. LC 66, Order No. 17-386 at 14 (Oct 9, 2017).

Appendix A

Acknowledged Action Items with Modifications and Additions

Action Items 1a, 1b, 2a: (Energy Vision 2020)

- 1a – Wind Repowering - Repower over 900 MW of existing wind resources.
- 1b – New Wind - Issue a Request for Proposals (RFP) for up to 1,270 MW of new wind resources.
- 2a – Aeolus to Bridger/Anticline- Build a 140-mile 500kV transmission line from the Aeolus substation to the Jim Bridger Power Plant.

Modifications:

- Given the uncertainty at this time regarding the outcome of the 2017R RFP, the result of any RFP for the engineering, design, and construction of the Aeolus to Bridger/Anticline transmission projects, and the outcome of recent tax reform efforts on the federal level, PacifiCorp must:
 - Provide an updated economic analysis with the request for acknowledgement of the final shortlist from the 2017R RFP;
 - Update its analysis of the Energy Vision 2020 projects as part of its 2017 IRP Update, including any changes resulting from the 2017R RFP or changes to critical assumptions, such as availability of tax credits, corporate tax rate, then-current cost-and-performance data for repowered wind resources, cost-and-performance data from the 2017R RFP final shortlist, and cost assumptions for the transmission projects; and
 - Provide quarterly updates to the Commission and Staff as development of the projects chosen in the 2017R RFP and the transmission projects proceed (through the date the projects go into service).
- The risk of proceeding with the Energy Vision 2020 projects remains with PacifiCorp unless and until the Commission completes a prudence review and approves cost recovery of these resources in rates. Recovery may be conditioned or limited to ensure customer benefits remain at least as favorable as IRP planning assumptions.
 - For uncertainties that will be resolved by the time of the projects' commercial operation date (pre-COD risks), we acknowledge the projects only insofar as customers do not bear the risk of construction cost overruns, delays or other factors that impact PTC value, or project costs and expected capacity factors that are less favorable than the assumptions presented in the IRP.

- For uncertainties that may persist beyond project commercial operation date (post-COD risks), such as project performance, tax policy changes, and resource value relative to market, we will carefully scrutinize the net benefits during future shortlist acknowledgement, IRP Update filing, and rate recovery proceedings. We intend to ensure that customer risk exposure is mitigated appropriately, and recovery may be structured to hold PacifiCorp to the cost and benefit projections in its analysis.
- PacifiCorp must provide the Dave Johnston early retirement transmission analysis to the Commission and parties in this proceeding once the third-party review and validation has been finalized.

Action Items 1c, 1d: Other Renewable Resource Actions

- 1c - RFP for Renewable Energy Credits (RECs) – Issue an RFP for RECs to meet state RPS compliance requirements as needed.
- 1d - REC Optimization – Evaluate potential opportunities to re-allocate and sell RECs as appropriate for compliance purposes before filing the 2017 IRP Update.

Action Items 2b – 2d: Other Transmission Actions

- 2b - Energy Gateway Permitting – Continue efforts to permit and implement the Energy Gateway transmission plan.
- 2c - Wallula to McNary Construction – Complete the Wallula to McNary project.
- 2d - Planning Studies – Complete planning studies to refine the coal unit retirement assumption inputs that go into transmission assumptions and provide studies in the 2017 IRP Update.

Action Item 3a: Front Office Transactions – Acquire economic short-term firm market purchases for on-peak summer deliveries from 2017 to 2019.

Modifications:

- PacifiCorp is to report back in its 2017 IRP Update as to the current and forecasted use of front office transactions through 2036 and any changes in assumptions impacting front office transaction use from the initial filing of LC 67 in April 2017.
- PacifiCorp should repeat its study of trading hub liquidity and also the market reliance risk analysis of front office transactions prior to the next IRP.
- For the 2019 IRP, if a generating resource is included in the preferred portfolio with an associated action item, then PacifiCorp will report on the cost and risk tradeoffs between the preferred portfolio and alternatives that do not include a generating resource.

Action Item 4a: Class 2 Demand-Side Management – Acquire cost-effective Class 2 DSM (energy efficiency) from 2017-2020 as listed in the action plan.

Modifications:

- PacifiCorp is to hire an independent consultant, in coordination with Staff and the Energy Trust of Oregon, to conduct an analysis by the next IRP that identifies and compares the ongoing differences between ETO's and PacifiCorp's near to long term energy efficiency forecast with ETO's actual achieved savings. The consultant's report should include recommendations to both organizations regarding forecasting improvements that should be considered for the 2019 IRP.
- Early in the public input process for the 2019 IRP, prior to finalizing energy efficiency supply curves, PacifiCorp will hold a DSM technical workshop to review and receive input regarding how the company models energy efficiency potential in the IRP and supporting studies such as the Conservation Potential Assessment.

Action Items 5a – 5h: Coal Resource Actions

- 5a through 5h – Complete economic analysis subject to litigation outcomes, regional haze analysis, natural gas conversion analysis, and review of other actions.

Modifications:

- PacifiCorp will perform 25 system optimizer (SO) runs, one for each coal unit and a base case. PacifiCorp will summarize the results providing a table of the difference in PVRR resulting from the early retirement of each unit, an itemized list of coal unit retirement costs assumptions used in each SO run, and a list of coal units that would free up transmission along the path from the proposed Wyoming wind projects if retired. PacifiCorp is to provide this information by June 30, 2018. If there is a dispute about modeling in the meantime, PacifiCorp, Staff and parties should first attempt to resolve it informally, but if that fails, Staff may report back to us at a public meeting before the 2019 IRP is filed. A Commissioner workshop will likely be scheduled to review this analysis once it is complete.

Additional General IRP Action Items:

- Modeling and Portfolio Approach: PacifiCorp will continue to model the assumption that EPA regional haze litigation against the company is successful and that PacifiCorp will be required to comply with the current requirements of the State Implementation Plan (SIP) and Federal Implementation Plan (FIP).
- Stochastic Parameters: In the IRP Update PacifiCorp will explain the reasons for the (sometimes) low correlations in the short-term forecast.

- Flexible Reserve Study: In the IRP Update PacifiCorp will model natural gas and storage for meeting flexible reserve study needs.
- Distribution System Planning: PacifiCorp will work with Staff and parties to advance distributed energy resource forecasting and representation in the IRP, and define a proposal for opening a distribution system planning investigation.
- Smart Grid Report: PacifiCorp will work with Staff and parties to explore the use of AMI data in future IRPs.
- Qualifying Facilities: PacifiCorp, Staff and parties should discuss a potential study of the capacity value of renewing QFs, and Staff shall bring this issue to a public meeting before the 2017 IRP Update.