

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

[Docket LC 62]

In the Matter of PACIFICORP, dba
PACIFIC POWER's 2015 Integrated
Resource Plan

Comments of Renewable Northwest

I. INTRODUCTION

Renewable Northwest is grateful to the Public Utility Commission (“Commission”) for the opportunity to comment on PacifiCorp’s 2015 Integrated Resource Plan (“IRP”). We would like to congratulate PacifiCorp (the “Company”), on the high degree of stakeholder involvement and communication during its 2015 IRP Public Process, which can be continued into future IRPs and used as a model for other utilities.

PacifiCorp’s Action Plan relies heavily on front office transactions (FOTs) and demand-side resources, and the preferred portfolio does not anticipate significant resource procurement for over a decade.¹ However, looking towards the IRP update, where we expect PacifiCorp to begin structuring its approach to complying with federal carbon dioxide reduction requirements, Renewable Northwest recommends that the Commission direct PacifiCorp to explore compliance in ways that: (1) reflect existing State law; (2) provide Oregon with a sufficient range of insights into potential compliance options; and (3) do not inhibit the State’s ability to achieve significantly more progress than the minimum federal requirement toward climate change mitigation.

At the beginning of the IRP Public Process, the U.S. Environmental Protection Agency (“EPA”) issued a major proposed rule under §111(d) of the Clean Air Act (“111(d)”) that would regulate carbon dioxide emissions from existing fossil fuel power plants. Renewable Northwest would like to acknowledge the Company’s efforts in attempting to model this proposed rule in its 2015 IRP. The publication of the EPA’s final rule (the “Clean Power Plan” or “Final Rule”) on August 3, 2015, provided clarification of the various compliance pathways afforded by 111(d).

In these comments we make the following recommendations. Sections 0–0 relate to recommendations regarding the Clean Power Plan. Section 0 discusses interactions between the Clean Power Plan and the Renewable Portfolio Standard (“RPS”). As Oregon looks toward drafting its State Plan, and as the Company begins modeling compliance with the Final Rule, Renewable Northwest recommends that the Commission direct PacifiCorp to explore more fully the interactions between compliance with the RPS and the Clean

¹ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 Ch. 9

Power Plan. This additional analysis will be invaluable to the State in determining its 111(d) compliance plan, and therefore invaluable to the Company in its IRP processes in determining future action plans and resource procurements.

Section III relates to rate-based versus mass-based compliance options. During the IRP process, PacifiCorp engaged in a thorough investigation of the implications of rate-based compliance with 111(d), with less exploration of mass-based options. Given the subsequent publication of the Final Rule, and in order to inform the State in its decision making process, Renewable Northwest recommends that the Commission direct PacifiCorp to explore mass-based solutions more fully in the Company's IRP Update. Section 0 relates to coal plant retirement as a 111(d) compliance solution. Renewable Northwest suggests that the Commission direct the Company to include early retirement of coal plants as part of the Clean Power Plan solution set in its IRP Update, as PacifiCorp did so assiduously during its intra-fleet, inter-temporal analysis of Regional Haze Compliance options.

Sections V addresses PacifiCorp's integration of variable generation. Renewable Northwest would like to recognize the progress that PacifiCorp has made in planning for variable energy resource integration, as reflected in the Company's 2014 Wind Integration Study ("WIS"). The 2014 WIS determined that a modest increase of only 1 MW in wind regulating margin (the incremental amount of reserves required to accommodate deviations of wind generation from forecasts) was required between 2012 and 2014 to accommodate a 417 MW increase in wind capacity.² Section VI discusses the Company's Distributed Generation Resource Assessment for Long-Term Planning Study.

Finally, Renewable Northwest acknowledges the challenges and opportunities surrounding the Clean Power Plan. The EPA's Proposed Rule was characterized by much ambition, but also a high degree of ambiguity. PacifiCorp made assumptions in order to model various compliance options in its 2015 IRP, and the Company should be lauded for that effort. With the publication of the Final Rule, Renewable Northwest looks forward to working with the State, the Commission, and the Company in finding ways to comply with Clean Power Plan, while at the same time ensuring that Oregon's approach to the Clean Power Plan enables ways to make even more progress towards reducing greenhouse gas emissions and increasing the penetration of clean, affordable renewable energy.

² PacifiCorp, 2015 IRP, Public Input Meeting 3, August 7-8, 2015, slide 73
www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/PacifiCorp_2015IRP_PIM03_8-7-8-2014.pdf

II. PACIFICORP'S STRONG 111(D) MODELING EFFORTS ARE HAMPERED BY FLAWED ASSUMPTIONS REGARDING RPS INTERACTIONS, WHICH SHOULD BE CORRECTED IN THE IRP UPDATE

Before the EPA's final rule was published on August 3, 2015, PacifiCorp considered 111(d) in its 2015 IRP by "studying a range of assumed compliance requirements and alternative compliance strategies."³ The Company characterized the proposed 111(d) rule as applying "on a portfolio basis to all of the resources and loads within a state."⁴ PacifiCorp's 2015 preferred portfolio meets the company's share of state emission rate targets among those states in which PacifiCorp serves retail customers *and* owns existing fossil generation that would be affected by 111(d). PacifiCorp developed the 111(d) Scenario Maker, a spreadsheet modeling tool, in order to ensure that their portfolios complied with the Company's assumptions about the proposed 111(d) rule.⁵ The Company described its compliance solution as a "BSEER [Best System of Emission Reduction] that is primarily comprised of allocating system renewable generation among states, acquiring energy efficiency resources, and re-dispatching fossil-fired generation resources."⁶

While Renewable Northwest welcomes this attempt to prepare for carbon regulation in the resource planning process, especially in advance of the publication of the Final Rule, we are very concerned that PacifiCorp took a high risk approach to modeling compliance with 111(d). At the fifth public input meeting, PacifiCorp presented the following statement: "Compliance costs could be partially mitigated if PacifiCorp were able to use 111(d) compliance attributes from all qualifying facility resources, regardless of REC ownership."⁷ PacifiCorp also assumed that a REC that it owned and retired for compliance with one state's RPS could be bifurcated in order to use the so-called "111(d) attribute" for compliance with a different state's Clean Power Plan obligation, without any overarching multi-state agreement.⁸

In our view, the Company's emphasis on this assumption—given existing Oregon law, described below—was a high risk approach to exploring potential compliance with 111(d) and determining a preferred portfolio. The Department of Energy's definition of "Renewable Energy Certificate" is established in Oregon Administrative Rule 330-160-0014:

(15) "Renewable Energy Certificate" (REC or Certificate) means a *unique representation* of the environmental, economic, and social benefits associated with the generation of electricity from renewable energy sources that produce Qualifying

³ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p6

⁴ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p28

⁵ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p131

⁶ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p6

⁷ PacifiCorp, 2015 IRP, Public Input Meeting 5, November 14, 2014, slide 32.

www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/PacifiCorp_2015IRP_PIM05_11-14-2014_FINAL.pdf

⁸ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p140

Electricity. One certificate is created in association with the generation of one MegaWatt-hour (MWh) of Qualifying Electricity. While a certificate is always directly associated with the generation of one MWh of electricity, transactions for Certificates may be conducted independently of transactions for the associated electricity.
[emphasis added]

It is unclear how 111(d) attributes can be separated from a REC under existing Oregon law, given that a REC “means a unique representation of the environmental [...] benefits associated with the generation of electricity from renewable energy sources”. Given that—in theory—a state plan could be structured where a REC can be retired for both RPS and 111(d) compliance, at this stage Renewable Northwest has interpreted existing law to mean that if a REC is retired in a state, for whatever purpose, then that state’s policies must capture all environmental benefits, whether that be for RPS compliance purposes or 111(d).

Even if existing state RPS law did not prevent a REC from being surrendered for compliance while the same MWh is used as renewable energy to meet 111(d) in another state, absent a multi-state agreement there is a risk of double counting, and reducing actual emissions reductions if a REC’s 111(d) attributes are traded to another state. In order to avoid double-counting 111(d) emissions reductions, care would have to be taken to ensure that the first state’s RPS was not used as part of that state’s 111(d) compliance plan. Renewable Northwest notes that despite the problems underlying the “flexible allocation” of 111(d) attributes, the approach does suggest that there is benefit to investigating a multi-state solution to 111(d) compliance, and we recommend that the Commission explore that option in appropriate forums. However, we do not recommend approaches that eliminate or significantly reduce the incremental carbon dioxide reductions achievable by the Clean Power Plan.

Given that existing law does not allow for the so-called “flexible system allocation” of renewable generation for 111(d) compliance purposes, Renewable Northwest is concerned by this assumption’s dominance in the IRP: in the Company’s sensitivity case definitions, fourteen of the fifteen cases allowed “flexible system allocation”, as well as the preferred portfolio. Only one sensitivity case (S-15), benchmarked to case C05-1, examined what would happen if “111(d) and REC Attributes Must be Used Simultaneously”, i.e. the retirement of a REC in one state for RPS compliance would also require the “111(d) compliance attributes” to be counted by that same state.⁹

Clarification of Compliance in the Final Rule highlights the Company’s Risky Approach

The publication of the Final Rule provided details on the compliance mechanisms available to states that adopted rate-based compliance. The EPA explained how “Emissions Rate

⁹ PacifiCorp, 2015 IRP, Public Input Meeting 6, January 29–30, 2015, slide 74.
www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/PacifiCorp_2015IRP_PIM06_2015-01-29-30.pdf

Credits” (ERCs)—produced with each MWh of eligible energy—will be the unit of compliance and trade for states that adopt a rate-based 111(d) plan. The EPA defines an ERC as follows:

An ERC is issued separately from any other instrument that may be issued for a MWh of energy generation or energy savings from a qualifying measure. Such other instruments may be issued for use in meeting other regulatory requirements (e.g., such as state RPS and EERS requirements) or for use in voluntary markets [...] The EPA notes that the definitions of other instruments, such as RECs differ (as established under state statute, regulation, and PUC orders) and that requirements under state regulatory programs that use such instruments, such as state RPS, also differ. As a result, states may want to assess, when developing their state plan, how such existing instruments may interact with ERCs. For example, a state may want to assess how issuance of ERCs pursuant to a state plan may interact with compliance with a state RPS by entities affected under relevant state RPS regulations or PUC orders [...] For example, state RPS regulations that specify a REC for a MWh of RE generation, and the attributes related to that MWh, may or may not explicitly or implicitly recognize that the holder of the REC is also entitled to the issuance of an ERC for a MWh of electricity generation from the eligible RE resource. This could impact existing and future RE power purchase agreements or REC purchase agreements.¹⁰

In its definition of an ERC, the EPA highlights the problem with the so-called “flexible system allocation” of 111(d) compliance attributes that PacifiCorp relied on heavily in the IRP process: RPS compliance issues, power purchase agreements (including PURPA), voluntary green power programs, and looking forward, potentially Voluntary Renewable Energy Tariffs (UM 1690) and community solar (UM 1746). This is further evidence that PacifiCorp’s over-reliance on its “flexible system allocation” assumption leads to insufficient insights on the effects of compliance options.

Implications of Flexible System Allocation of 111(d) Compliance Attributes

If the Company’s assumption of “flexible system allocation” of renewable generation for 111(d) compliance purposes were to be enabled through a change in existing law, the benefits of Oregon’s environmental policies would essentially be capped by the Clean Power Plan. Under current Oregon rules, it can be assumed that a REC contains the ERC: a REC-ERC. Going forward, when a REC-ERC is retired towards Oregon’s RPS, the associated ERC would go towards Oregon’s Clean Power Plan compliance. If the ERC components of the RECs in excess of what is required by the Clean Power Plan in Oregon were stripped away and used for another state’s 111(d) compliance:

¹⁰ Environmental Protection Agency, 40 CFR Part 60, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, pp 1279–1280.

- greenhouse gas reduction’s achieved by Oregon’s policies would be capped by the requirements of the Federal Clean Power Plan, as any reductions in excess of the Clean Power Plan requirements would leak to other states;
- clean energy development outside of Oregon would be reduced by the extent to which Oregon’s RPS exceeds the requirements of the Clean Power Plan;
- any future increase in Oregon’s RPS would lead to ERCs leaking into other states for their respective Clean Power Plan compliance requirements, displacing an opportunity to further reduce emissions; and
- if other states followed the same approach, the Clean Power Plan would become a ceiling on the extent to which emissions could be reduced regionally and nationally.

PacifiCorp Should Explore More Ambitious State Environmental Policies in its IRP Update

Renewable Northwest recommends that the Commission direct PacifiCorp to explore more fully, in the Company’s IRP Update, the implications of state environmental policies being more ambitious than the Clean Power Plan. Such an exploration should include assessing the impacts across a broad range of scenarios, as the Company did so diligently for their “flexible system allocation” assumption. This additional analysis will be invaluable to the State in determining its 111(d) compliance plan, and therefore invaluable to the Company in its IRP process.

III. PACIFICORP’S EXPLORATION OF 111(d) COMPLIANCE OPTIONS PLACES TOO MUCH EMPHASIS ON RATE-BASED SOLUTIONS: THE IRP UPDATE SHOULD EXPLORE MORE MASS-BASED OPTIONS

PacifiCorp modeled five alternative compliance requirement assumptions relating to EPA’s draft 111(d) rules in their Core Cases: no requirement; emission rate target (all states in which the Company operates); emission rate targets (only states in which the Company has retail sales); mass cap (new and existing fossil-fired resources); and, mass cap (existing fossil fired resources).¹¹ However, only two of PacifiCorp’s 14 core cases (C12 and C13) considered modeling compliance with 111(d) as a mass cap applicable to new and/or existing fossil fuel resources.

As the Company points out, “the manner in which states choose to implement the program will have a significant impact on ultimate compliance approaches”.¹² In order to inform the State on the potential implications of rate-based versus a mass-based approach—given the publication of the Final Rule—Renewable Northwest recommends that the Commission direct PacifiCorp to explore mass-based solutions more fully in the Company’s IRP update, as the Company did so thoroughly for rate-based compliance options.

¹¹ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p 143

¹² PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p 28

IV. PACIFICORP'S 111(d) COMPLIANCE STRATEGIES SHOULD EXPLORE COAL PLANT RETIREMENT AS AN OPTION

For case definitions that included a 111(d) emission rate target, PacifiCorp developed three different compliance strategies.¹³ The three compliance strategies included two that prioritized re-dispatch of coal-fired generation (with variations on energy efficiency assumptions), and one that prioritized building new renewable resources. While Renewable Northwest welcomed this exploration of compliance strategies, we note that the Company has not at this stage investigated the option of coal plant retirement for 111(d) purposes.

At the Commission's urging, PacifiCorp undertook an inter-temporal and intra-fleet analysis of its coal plants during its Regional Haze analysis, and Renewable Northwest applauds this. Notably, this Regional Haze analysis considered early retirement as a potential lowest cost compliance option. PacifiCorp's advances in considering early retirement of coal plants in its Regional Haze modeling, however, highlight that PacifiCorp failed, or were unable, to consider early retirement as a least-cost option for compliance with 111(d). Rather, PacifiCorp looked only at backing down coal plants to a 70% annual average capacity factor.¹⁴ Renewable Northwest suggests that the Commission recommend the Company include early retirement of coal plants as part of the Clean Power Plan solution set in its IRP Update.

V. 2014 WIND INTEGRATION STUDY REFLECTS INCREASING EFFICIENCY

PacifiCorp's 2014 Wind Integration Study ("WIS") calculated wind integration costs used for IRP modeling, incorporating the additional 417 MW of wind projects on the Company's system since the 2012 WIS.¹⁵ A comparison of the wind regulating margin—the incremental amount of reserves anticipated to accommodate deviations in wind from forecasts—required in the 2012 WIS to the level required in the 2014 WIS reveals PacifiCorp's increasing ability to integrate variable resources into its system. The wind regulating margin remained relatively flat, increasing from 185 MW in 2011 (2012 WIS) to 186 MW in 2013 (2014 WIS), while the wind capacity increased 417 MW from 2,135 MW in 2011 to 2,552 MW in 2013.¹⁶ Looking to the next IRP, Renewable Northwest welcomes PacifiCorp's intention to use data from the Energy Imbalance Market to inform future wind integration studies.

¹³ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p 144–145

¹⁴ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p 145

¹⁵ PacifiCorp, 2015 IRP, Public Input Meeting 3, August 7–8, 2015, slide 70

www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/PacifiCorp_2015IRP_PIM03_8-7-8-2014.pdf

¹⁶ PacifiCorp, 2015 IRP, Public Input Meeting 3, August 7–8, 2015, slide 73

www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/PacifiCorp_2015IRP_PIM03_8-7-8-2014.pdf

VI. DISTRIBUTED GENERATION STUDY HIGHLIGHTS OPPORTUNITY FOR EXPANSION

PacifiCorp hired Navigant Consulting to analyze the retail Levelized Cost of Energy (“LCOE”) of Distributed Generation (“DG”), and use it to project the market penetration of DG resources for the next 20 years for the IRP.¹⁷ These results were presented to stakeholders as part of the 2015 IRP Public Process.¹⁸ Navigant identified that the technical potential (the amount that can be physically installed without taking economics into account) for all DG technologies¹⁹ analyzed for PacifiCorp was 10 GW, which is comparable to the Company’s forecasted system coincidental peak load over the next decade.²⁰ To determine the market penetration—*i.e.*, the economic potential—they considered the level of DG adoption based on acceptable payback periods. In the base case (medium penetration), Navigant projects 910 MW of DG installations by 2034. Navigant reports that in Oregon, “Wind and PV incentives, and good wind availability, spur penetration of these resources.” The Navigant study suggests there is a large techno-economic potential for commercial solar PV and residential small distributed wind in Oregon as shown in Figure 1.²¹ Navigant defines commercial solar as the application of solar on commercial buildings, with PV systems ranging in size from approximately 2 kW to 250 kW, while small distributed wind systems are defined as those with nameplate capacities between 1 kW and 100 kW.^{22,23}

Renewable Northwest recommends that the Commission consider, where possible, enabling the development of the distributed generation sector. For example, UM 1746 (Recommendations for Community Solar Program Designs and Attributes) and UM 1690 (Voluntary Renewable Energy Tariffs for Non-Residential Customer) both provide opportunities to connect new types of customers from a variety of classes to the monetary and environmental benefits of renewable energy.

¹⁷ Navigant, Distributed Generation Resource Assessment for Long-Term Planning Study—Supply Curve Report, Prepared for PacifiCorp, June 9, 2014.

¹⁸ Navigant, 2015 IRP Distributed Generation (DG) Supply Curves, Stakeholder Presentation, August 7, 2014. www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/Navigant_2015IRP_DistributedGeneration_8-7-14.pdf

¹⁹ Solar Photovoltaic, Small Scale Wind, Small Hydro, Combined Heat and Power Reciprocating Engines, Combined Heat and Power Micro-turbines.

²⁰ PacifiCorp, 2015 IRP, Volume I, March 31, 2015 p 62

²¹ Navigant, Distributed Generation Resource Assessment for Long-Term Planning Study—Supply Curve Report, Prepared for PacifiCorp, June 9, 2014, p6–13

²² Navigant, Distributed Generation Resource Assessment for Long-Term Planning Study—Supply Curve Report, Prepared for PacifiCorp, June 9, 2014, p 2–4.

²³ Navigant, Distributed Generation Resource Assessment for Long-Term Planning Study—Supply Curve Report, Prepared for PacifiCorp, June 9, 2014, p 2–45

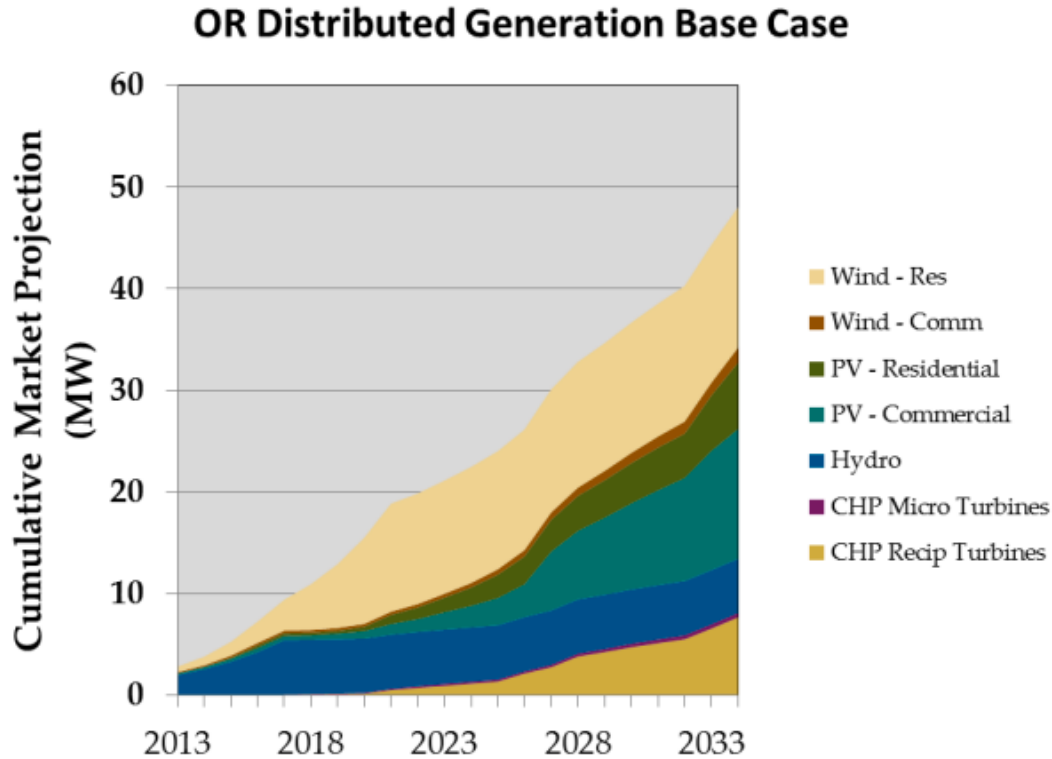


Figure 1—Oregon Distributed Generation Base Case Results.²¹

VII. CONCLUSION

Renewable Northwest appreciates the opportunity to comment to the Commission on PacifiCorp’s 2015 IRP. We would also like to acknowledge our appreciation of the Company’s well-run and engaging stakeholder process.

While PacifiCorp made great efforts to model the impacts of the proposed 111(d) rule on its resource planning, we recommend the Commission direct the Company to explore compliance options more broadly in their IRP Update as they begin structuring their approach to the Clean Power Plan for the next IRP. Renewable Northwest welcomes the work that the Company has done in efficiently integrating variable generation, as shown in its 2014 Wind Integration Study. PacifiCorp should also be applauded for undertaking a study into the market penetration of distributed generation resources. This investigation revealed that Oregon has a large potential market for commercial solar PV and residential wind.

Finally, Renewable Northwest looks forward to working with the State, Commission, Company and other stakeholders on complying with the Clean Power Plan, taking into consideration what additional, long-term greenhouse reductions are achievable.

Dated this 23rd day of August, 2015

Sincerely,

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