

MEMORANDUM

Attorney/Client Privilege

TO: Renewable Energy Coalition
John Lowe

FROM: Irion Sanger
Marie Barlow

RE: PacifiCorp IRP Public Input Meeting December 3-4, 2018
Oregon-Specific Coal Analysis Meeting December 7, 2018

DATE: December 11, 2018

I. MEETING SUMMARY

PacifiCorp held a two-day public input meeting on December 3-4, 2018. At this meeting PacifiCorp presented a detailed analysis of its coal retirement study. PacifiCorp also held an Oregon-specific coal analysis meeting on December 7, 2018. I did not listen to or attend any portion of the two-day public input meeting but attended the Oregon-specific meeting and reviewed all the materials, which were the same for both meetings.

PacifiCorp's coal study assumes that PacifiCorp has complete control to retire or not retire any of the units or any of PacifiCorp's share in any of the units. Some units in PacifiCorp's system have other joint owners and, in reality, those other owners would need to agree to retire the unit. The coal analysis does not, on its own, determine how long any particular unit will stay in service but will inform the resource decisions. The analysis also does not include any potential system reliability costs or the intra-hour flexible resource credit.¹

PacifiCorp's methodology involved a cost/benefit unit-by-unit analysis, then stacking those units to determine which combination of retirements will achieve the largest savings, and finally a preliminary reliability assessment. PacifiCorp used its System Optimizer ("SO") Model to first determine least-cost resource decisions on a broad scale, then used its Planning and Risk ("PaR") Model to review more granular sensitivities and operating characteristics of those resources. The coal study base case

¹ The intra-hour flexible resource credit is a credit given to various resources to quantify their value in being able to ramp up production quickly in order to compensate for variable resources.

assumes that some coal units will be retired because PacifiCorp had already determined in previous resource planning that it was economic to retire those units. These include Naughton 3 (to retire in 2019) and Cholla 4 (to retire in 2020).

Under the unit-by-unit analysis, PacifiCorp found that 13 out of its 22 coal units would yield a net benefit to PacifiCorp if they were retired in 2022. When PacifiCorp analyzed these under a high gas price/high CO₂ price scenario, that number dropped to 9, and under a low gas price/no CO₂ price scenario, that number rose to 14. It was suggested that PacifiCorp analyze these under a high gas price/no CO₂ price scenario and low gas price/high CO₂ price scenario to see more extreme results, but PacifiCorp indicated that it chose not to analyze those scenarios due to past criticism about analyzing scenarios that were not likely to occur.

PacifiCorp ranked the coal units by most benefit (on a dollars per kilowatt-hour basis) to most cost and selected a few from the top to show the impact on its resource portfolio and planned transmission upgrades of retiring those units. It was suggested that PacifiCorp also look at stacking them based on net benefit to PacifiCorp's system.

Of particular note, even without any coal retirements, PacifiCorp's benchmark case is selecting 500 MW of wind in 2020. PacifiCorp indicated that it has constrained the model to 500 MW because that is how much transmission is available, and the model is selecting up to that cap. The model is also assuming that if a coal unit retires, that transmission will become available and assumes that it will remain available for certain time frame such that if a new resource is added, the new resource can use that available transmission.

Under this analysis, the retirement of the coal units generally results in renewables being added to the resource portfolio earlier than they would have been otherwise and in some instances, increases in the amount of front office transactions. The effect on the transmission decisions is often to delay certain upgrades, but there are also some upgrades that need to be accelerated. This is likely the result of a disconnect between the location of the retired coal unit and the location of the resource that is being added or accelerated to replace that coal unit.

PacifiCorp then "stacked" the coal units to analyze the net effect of retiring multiple coal units in 2022. PacifiCorp found that it realized increased net benefits when it retired multiple units, but in some cases, it realized net costs. The changes to its resource portfolio also showed increased front office transactions and increased gas in the resource portfolio as well as accelerated transmission upgrades.

PacifiCorp performed a preliminary reliability assessment for two of its stacked cases (one which showed a net benefit and one which showed a net cost) and both indicated that PacifiCorp would experience a capacity shortfall.

II. NEXT STEPS

PacifiCorp is continuing to run unit-by-unit analyses, various stacked-retirement cases, and more reliability assessments. It would like to avoid running every possible scenario because of the sheer volume of computing power required to run each case. Staff was particularly interested in reviewing results of some stacked scenarios that included Jim Bridger 3 and 4.

The dates and topics for the next meetings are expected to be as follows:

December 14, 2018 – 4:00 p.m.

- Placeholder call scheduled for stakeholders to review potential additional cases that they would like to see

December 18, 2018 – 1:00 p.m.

- PacifiCorp will present a summary of its coal analysis to the Commission in a special public meeting

January 24-25, 2019 – Next IRP Public Input Meeting

- Load & Resource Balance
- Regional Haze Portfolios
- Portfolios / Sensitivity Cases
- Stakeholder Feedback Form Recap