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## RENEWABLE ENERGY COALITION MEMORANDUM

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**TO:** COALITION MEMBERS  
**FROM:** DR. NANCY ESTEB  
**SUBJECT:** PUGET SOUND POWER IRP MEETING  
**DATE:** FEBRUARY 7, 2018

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Hello -

PSE generally begins their IRP meetings with an update on action items from previous IRP meetings. Most of the items are “in progress,” with only three complete. This time there are 21 of them in total, generally information requests from members of the IRP group. They hired a facilitator for today’s meeting. There were 29 people in the room and an additional 10 on the phone.

Between the last IRP meeting and today, PSE filed with the WUTC an application to delay the current IRP by six months. The main issue is current legislation before the Washington state legislature regarding clean power. The legislative session wraps up April 28 and they will know more then. Sierra Club asked for more information from the Company regarding how they are thinking about the proposed legislation and requested a date as to when that information will be forthcoming. The Company hemmed and hawed and said they are working on it and promised later, later. Other comments included pleas for more information. The Company promised to take the comments under consideration. This issue revealed some significant tensions between some members of the IRP group and the Company.

PSE currently relies on 1,500 MW of firm transmission to the Mid-Columbia for peak planning, so the adequacy of the region is critical. The regional annual average load in aMW (Oregon, Washington, Idaho, and Montana west of the mountains) will be 21,353 in 2023 and 21,487 in 2035. A speaker from NWPPC explained that the low regional growth rate with EE is -0.043 annually, the medium is -0.030, and the high is 0.27. The regional resources based on nameplate capacity are 54% hydro, 15% wind, 14% natural gas, 11% coal, and others total 6% (nuclear, solar, biomass, other). For coal plants, they anticipate that Boardman, Centralia, and Colstrip 1 and 2 will be out by 2035, and Colstrip 3 and 4 and Bridger will still be in service. During the winter they assume they can import 2,400 – 3,500 MW from California but none during the summer. The region has its highest LOLP in January, with bad values also in December and February. However, with resource additions of 650 MW by 2023 or 750 MW by 2035, all is well.

By 2035 the region will be close to dual-peaking, with summer peaks very close to winter peaks.

PSE will use GENESYS model for their capacity expansion planning in this IRP. PSE's position is that resource adequacy problems in the region are driven by low hydro conditions. They will include solar plus batteries in this IRP, believing that they are better when together. This contrasts with pumped storage, which means large projects that are operationally complex.

PSE hired E3 to give them more information about the PNW energy situation. E3 says that the PNW will undergo significant changes to its generation mix over the next 30 years due to increased penetration of wind and solar, retirements of coal generation, and questions about the role of new natural gas generation. Thus, there are questions about the region's ability to serve load reliably as firm generation is replaced with variable resources. They predict challenging conditions in a deeply-decarbonized PNW grid with a multi-day cold snap when there is low wind, low solar, and low hydro production. Wind and solar currently contribute little effective capacity with ELCC of 7% and 12%, respectively, with capacity factors of 26% and 27%. Load growth and planned coal retirements lead to the need for eight GW of new effective capacity by 2030. Their key findings included a mild rebuke to PacifiCorp (to utilities relying on "front office transactions") to meet their resource needs, because there is a risk that this may result in double-counting of available surplus generation capacity. They also pointed out that existing NW wind, which is mostly in the Columbia Gorge, provides very low capacity value because of its strong negative correlation with peak loads. However, new Montana/Wyoming wind can provide high capacity values due to strong winter winds that are positively correlated to NW peak loads. PSE allowed a significant amount of time for this study, in spite of the fact that it deals with the region as a whole and not just PSE.

The next meeting will be March 18.