August 21, 2017

To: The Washington Utilities and Transportation Commission

Docket UE-160918 submitted by email to records@utc.wa.gov

Re: Documents that PSE erroneously claims prove the need for Energize Eastside

Dear WUTC:

By this letter I am attaching two documents that are relevant to PSE's Integrated Resource Plan ("IRP") currently under scrutiny by the WUTC. These are the documents that PSE claims prove the need for Energize Eastside. The first attached document is the "Eastside Transmission Solutions Report" Updated February 2014. The second attached documents is the "Eastside Needs Assessment Report Transmission System - Executive Summary" dated December 2013. I believe these documents should be on the record in Docket UE-160918 for purposes of examining what is in them.

There are clear problems with each of these PSE documents.

1. The February 2014 "Eastside Transmission Solutions Report"

The February 2014 "Eastside Transmission Solutions Report" refers to load flow studies, each of which load flow study has a fatal flaw. That fatal flaw is that each load flow study includes a requirement that the PSE local transmission system must support a new ability of BPA to move 1,500 MW of power (or more) to or from the Canadian border under all weather and contingency conditions. **See Table 3-1 in the report. These assumptions cause massive flows through the Puget Sound area for power imported from or exported to Canada, depending on the season. I say massive because there are no firm commitments to move anywhere near that amount of inter-regional power by or for anyone. In some cases, this transmitted electricity is five times larger than peak Eastside demand. Non-firm transmission of this magnitude cannot be used to justify a project that is claimed to address only local needs. The northwest grid as a whole was not designed to move this amount of inter-regional power under all weather and contingency conditions. The load flow work performed for the Lauckhart-Schiffman study makes it clear that these massive inter-regional flows being forced on the grid cause significant problems not only on the PSE local system but also on other parts of the grid that would also need to be dealt with**. **The 2013 ColumbiaGrid "Stressed Load Flow Case" found the same thing.** PSE has been asked how they dealt with these other problems but PSE has not answered. There is no reason that a study of the needs on PSE's local system should reflect these massive inter-regional flows to or from Canada. As a result, all of the load flow studies performed in this February 2014 "Eastside Transmission Solutions Report" are of no use in determining what is needed to provide reliable power to the greater Bellevue area. These studies show overloads on the PSE local system (and other grid problems) that are caused by these massive non-required inter-regional flows to or from Canada. These to/from Canada flow assumptions need to be eliminated for purposes of assessing the transmission needs in the greater Bellevue area. All these load flow studies need to be rerun without these massive inter-regional flows.

The February 2014 "Eastside Transmission Solutions Report" also has a fatal flaw when it assumes during heavy winter load conditions that PSE and SCL generation west of the Cascades was adjusted to fully off. **See paragraph 3.2.9 in the report**. Cleary PSE would not be able to meets it total system peak in the winter if its generation west of the Cascades was fully off. According to PSE's IRP, PSE is "short" by about 2100 MW of having sufficient generation to cover its total system peak load. While that is a

very large "shortage", it gets even larger (more than 3,500 MW short) under the assumption that PSE's west of Cascades generation is fully off.

While PSE claims to have modeled an alternative that has more conservation and an alternative to build a "peaker generating plant" in this February 2014 "Eastside Transmission Solutions Report", the major problems created by their faulty modeling [*of (a) flows to and from Canada and (b) fully turning off PSE's generation located west of the Cascades*] swamps the impact of these other alternatives and makes all of the studies done for this report of no value.

1. The "Eastside Needs Assessment Report - Transmission System - Executive Summary" dated December 2013.

I provide this document for the record in UE-160918 because it appears to provide an alternative basis for PSE claiming there is a need for their Energize Eastside project. The graphic on page 2 of this document provides what PSE calls "The Problem." But this graphic is flawed. The "System Capacity" line is the "summer normal" rating of the two remaining 230/115 KV transformers at Talbot Hill and Sammamish after the other two 230/115 KV transformers fail in the N-1-1 Scenario. It should have been the "winter emergency" rating. Also, the load line does not reflect the actual loads on these remaining transformers from the load flow study for this N-1-1 contingency event. In the Lauckhart-Schiffman report I provide the appropriate graphic which is based on load flow study analysis. The Lauckhart-Schiffman corrected graphic shows the Problem would not occur until many years into the future.

Corrected load flow analysis of the Need for Energize Eastside-

PSE has been aware for some time that it should not have required the flows to and from Canada in their load flow studies. Further, PSE is fully aware that they cannot meet their winter peak loads with their west of Cascades generation fully off. Despite this awareness on the part of PSE, they inexplicably decided not to rerun their load flow models to fix these faulty assumptions.

But there is evidence on the record in UE-160918 as to what would happen if these faulty assumptions are fixed. That evidence is contained in the Lauckhart-Schiffman load flow study report that is included in the record. While PSE has criticized the Lauckhart-Schiffman load flow study report, there is also evidence on the record in the March 28, 2016 "rebuttal letter" that these PSE criticisms are incorrect. The March 28, 2016 rebuttal of the PSE criticisms of the Lauckhart-Schiffman report (included in the record for Docket UE-160918) also develops questions and challenges for PSE to respond to regarding my rebuttal of their criticisms. PSE has never responded to those questions and challenges.

It is clear from the Lauckhart-Schiffman load flow studies that Energize Eastside is not needed in 2018 in order for reliable service to be provided to the greater Bellevue area. If a reliability issue arises after 2018, then the alternatives I described in my August 14, 2017 "Alternatives to Energize Eastside" submittal in Docket No. UE-160918 would need to be analyzed. These alternatives would clearly be better than building Energize Eastside.

Sincerely,

Richard Lauckhart
Energy Consultant
Davis, California
On behalf of a large number of citizens that are concerned about transmission matters in the greater Bellevue area.

cc: IRP Advisory Group members