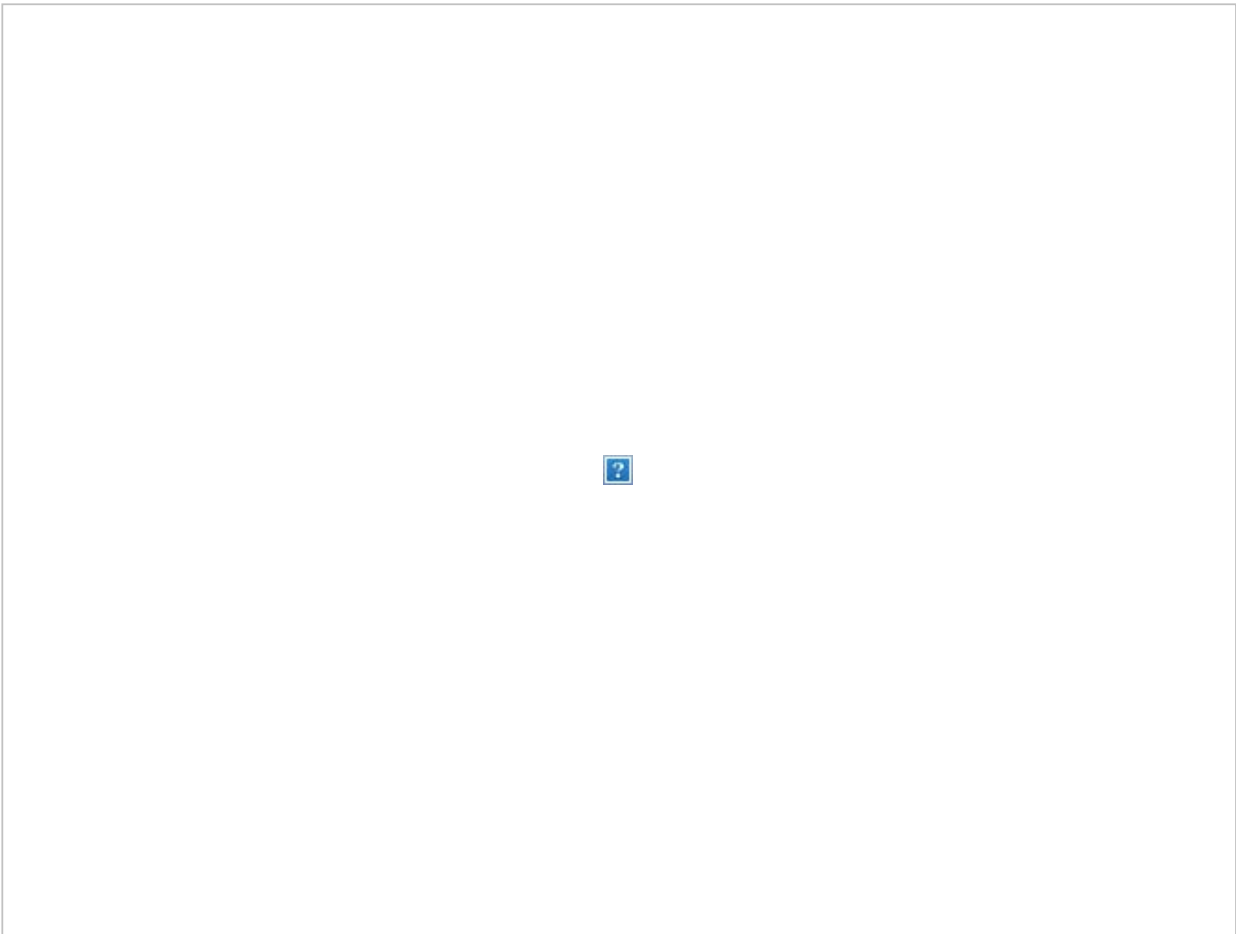


From: [Russell Borgmann](#)
To: [UTC DL Records Center](#)
Cc: [Russell Borgmann](#)
Subject: Letter to WUTC, Docket UE-160918, re PSE IRP
Date: Wednesday, August 16, 2017 6:32:44 AM
Attachments: [image003.jpg](#)

It has come to my attention that perhaps previous comments submitted to the WUTC regarding Docket UE-160918 may not have made it into the public record. As such, please add these comments to the public record:

There is a major new update that was disclosed in the IRP meeting at PSE on 8/11/2017. Flow batteries now beat lithium ion batteries on price when all factors, including product lifetime, are accounted for.

Here is the chart PSE showed on 8/11/2017 comparing the cost of various resources for meeting peak demand:



PSE shows an analysis of the “flexibility benefit” and avoided transmission and distribution costs that batteries provide. Those are the orange and red areas circled in this chart.

At \$93/kW-year, the only cheaper option is a “Frame Peaker” at \$64. But the only reason the peaker is cheaper is that peakers don’t have to pay the same price for carbon as Combined Cycle gas plants (CCCT and \$131). This is a temporary loophole (subject to change), because peakers emit carbon. In fact, they emit more carbon per kilowatt than a CCCT plant. It’s just that they run so infrequently that they aren’t a

major carbon source.

When considering climate change, flow batteries win big. A 4-hour flow battery is THREE TIMES cheaper than lithium ion batteries. And batteries are MUCH better for the environment than carbon-emitting peaker plants and coal-fired generation.

Any kind of battery compared to a Frame Peaker is attractive beyond the strict cost comparison.

- Batteries emit no carbon or methane by mining and combusting fossil fuels.
- Batteries can bank renewable sources like wind and solar.
- The stored energy can be withdrawn during peak hours instead of firing up fossil fuel generation plants.

Those factors and additional reliability scenarios account for the large “flexibility benefit” in PSE’s cost analysis.

This is a conclusion that worthy of more acknowledgement, publicity, and analysis.

I ask the WUTC to conduct fact-finding hearings on transmission line planning. It appears that PSE is not complying with Mr. David Nightingale's action to encourage PSE to include transmission planning in this year's IRP. The WUTC commissioners, and the IRP record, contain significant unanswered questions about PSE's need for transmission projects (like Energize Eastside, the Lakeside expansion, and the 148th transmission line upgrade in Bellevue).

There are **significant questions about alternatives** that were not properly studied by PSE. To-date, PSE has attempted to "duck and dodge" these questions during IRP questions. With their latest revelation at the IRP meeting on 8/11, it is time for this information to be thoroughly, and publically, discussed at the IRP meetings for further analysis and consideration. In depth analysis of transmission line alternatives must be included in **this year's IRP**. Please don't give PSE a "pass" just because they revealed new information late into the IRP review cycle.

Can the WUTC please set-up a Fact Finding hearing, so that the WUTC has all of the facts at their disposal when PSE seeks rate recovery on unnecessary transmission line projects?

Please send a message to PSE that they need to learn how to operate more efficiently in the headwinds of an evolving energy landscape that finds decentralized electricity generation as the new norm of the future. Seek ways to encourage PSE to embrace a new business model that promotes ADDING renewable energy resources to the grid, while retiring dirty, polluting coal generating resources, like Colstrip. Transmission line projects like Energize Eastside do nothing to curb carbon emissions. Battery solutions, like that disclosed above, are positive strides in the right direction. Please seek ways to encourage and promote the use of battery technologies that smooth peak load demands. Southern California, New York, Hawaii, Australia, the UK, and many other regions have found a way to make that happen.

In Washington, a region that touts world-class technology and entrepreneurialism as well as a profound love of the environment, we should – and must – LEAD the nation in promoting safer, more reliable, environmentally friendly, sustainable energy resources that are fairly priced. Send a clear message to PSE that they must seek ways to provide reliable, environmentally friendly sources of electricity. Please protect ratepayers.

Thank you.
Russell Borgmann
2100 120th Place
Bellevue WA 98005