

Regional Origins of Energize Eastside

Abstract

Energize Eastside was conceived nearly a decade ago as a dual project to serve both local and regional transmission needs. While a dual approach might have made sense from an engineering standpoint, high costs to communities and the environment were not considered. As time has passed, low growth of local demand for electricity and changes in Canada have reduced both local and regional needs. Consequently, Energize Eastside has become an outdated, over-sized solution to a problem that no longer exists.

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1. ColumbiaGrid

ColumbiaGrid is a consortium of Northwest utilities founded in 2006 to “improve the operational efficiency, reliability, and planned expansion of the Northwest transmission grid.”¹

In 2010, a ColumbiaGrid study team tackled the difficult problem of transmitting large amounts of electricity through the Puget Sound region at the same time transmission lines and transformers are busy serving peak demand.

A 2011 document titled “*Updated Transmission Expansion Plan for the Puget Sound Area to Support Winter South-to-North Transfers*” summarizes the team’s progress as follows:

*In October of 2010, the Puget Sound Area Study Team issued a report entitled “Transmission Expansion Plan for the Puget Sound Area.” The report is available via the ColumbiaGrid website. The report details a transmission plan for the Puget Sound region that would, as a basic requirement, provide for reliable system performance while significantly improving the ability of the transmission grid to support power transfers between the Northwest and British Columbia.*²

¹ <https://www.columbiagrid.org/client/pdfs/2015SAfinal.pdf>

² <https://www.columbiagrid.org/PSAST-documents.cfm?SortOrder=Date>

In the same report, ColumbiaGrid notes a change of plan. Until 2011, the preferred plan was to place heavier wires on a 230 kV transmission line through the Eastside, owned and operated by Seattle City Light (SCL). Seattle is not directly served by this transmission line, known as the “Maple Valley-SnoKing” line. Instead, the utility leases the line to the Bonneville Power Administration (BPA) to help facilitate regional transfers of electricity.

Here is how the report describes an alternative plan using PSE’s lines instead:

Since the development of the original plan, Puget Sound Energy has further developed their plan to rebuild two 115 kV lines to 230 kV (Sammamish-Lakeside-Talbot #1 and #2) and provide new 230/115 kV transformation at their Lakeside Substation. As stated in the prior report, this facility addition can delay the need to reconductor the Maple Valley-SnoKing 230 kV lines beyond the ten year transmission planning horizon. The study team decided that since Puget Sound Energy is moving forward with this plan, the Sammamish-Lakeside-Talbot project should be listed as the proposed project in the plan instead of the Maple Valley-SnoKing reconductor.

Essentially, PSE convinced ColumbiaGrid to choose a two-for-one solution. Instead of a clear delineation of a regional project serving Canada and California, and a local project serving the Eastside, a single project could serve all needs.

It seemed like a plan all the stakeholders could love. As non-profit entities, neither SCL nor BPA had any incentive to stick with the previous plan. Both were happy to have more transmission capacity in the Puget Sound, funded by PSE’s customers.

PSE had much to gain. By assuming responsibility to support larger regional transfers, PSE could justify building a local project whose need was not clear. Initial studies that demonstrate need for the project include these regional transfers as a key assumption as shown in Figure 1 from the “Eastside Needs Assessment Report.”

Study Assumptions

The following key assumptions were adopted to more fully understand the potential reliability impacts:

- The study horizon selected was the ten year period from 2012 to 2022.
- System load levels used the PSE corporate forecast published in June 2012.
- Area forecasts were adjusted by substation to account for expected community developments as identified by PSE customer relations and distribution planning staff.
- Generation dispatch patterns reflected reasonably stressed conditions to account for generation outages as well as expected power transfers from PSE to its interconnected neighbors.
- Winter peak Northern Intertie transfers were 1,500 MW exported to Canada.
- Summer peak Northern Intertie transfers were 2,850 MW imported from Canada.

Figure 1: Key assumptions from initial study justifying Energize Eastside

After years of declining revenues, PSE needed new sources of revenues. PSE would welcome the generous allowance Washington State provides for infrastructure projects (amounting to more than a billion dollars over the lifetime of this project).

Unfortunately, two important stakeholders weren't represented as ColumbiaGrid and PSE finalized their plans:

- **Ratepayers** would be on the hook for hundreds of millions of dollars to build a project that may never provide any local reliability benefit. Once in the rate base, customers would pay higher electric bills for many decades to provide PSE with its coveted rate of return on the project.
- **Hundreds of homeowners, several schools, and even a few parks** would be impacted by the taller poles and higher voltages PSE proposed. The aesthetic and environmental costs were never mentioned in any of ColumbiaGrid's studies.

Even from a financial perspective, Energize Eastside makes little sense. In Appendix B of the ColumbiaGrid report, reconductoring the SCL line (a.k.a. "SnoKing – Maple Valley") is significantly less expensive than Energize Eastside (a.k.a. "Sammamish-Lakeside – Talbot"). Figure 2 shows the SCL upgrade is estimated to cost \$16 million, while Energize Eastside weighs in at \$70 million. (PSE has already spent almost that much just promoting and preparing for the project; total up-front costs, excluding interest, could exceed \$200 million).

Reconductor the SnoKing - Maple Valley 230 kV lines with high temperature conductor	\$16
Rebuild the SnoKing - Maple Valley 230 kV lines with bundled conductor	\$51
Lakeside 230/115 kV transformer and Sammamish-Lakeside - Talbot 230 kV upgrade (part of the preferred option)	\$70

Figure 2: Cost estimates for regional transmission plans

2. Moving Forward

In early 2012, PSE, BPA, and SCL signed a Memorandum of Agreement to proceed with the plan outlined by ColumbiaGrid. In a BPA press release, the partners applauded the new plan:

“This was a truly collaborative effort that allowed us to develop a solution to an issue that has been discussed and studied for more than 15 years,” said Hardev Juj, vice president of Planning and Asset Management, BPA Transmission Services. “Without the cooperation of our partner utilities, we could not have reached this agreement.”

When large amounts of energy are being delivered to the Puget Sound area through the Northern Intertie to Canada, transmission lines at times become congested. To relieve this congestion and avoid unplanned power interruptions to customers, BPA currently limits or curtails the amount of energy Puget Sound-area utilities and Canadian utilities can deliver across certain transmission lines.

Energy demand projections for the Puget Sound area and the potential for additional energy delivery from the Northwest to Canada have transmission system planners projecting increased curtailments by the end of this decade.³

The Sammamish-Lakeside-Talbot transmission line, rebranded Energize Eastside, was announced to the public the following year. To sell the project to a skeptical public, PSE warned that imminent blackouts would affect homes and businesses if the project weren't built. According to PSE, Energize Eastside would remove a severe threat to our safety and economic vitality.

However, PSE was not entirely honest about how curtailments would work. If equipment becomes stressed in the unlikely scenario PSE described, the curtailments would affect BPA and utilities located in Canada or California. It is extremely unlikely that PSE would intentionally turn off power to Eastside customers in order to maintain regional transfers to consumers outside the company's service area.

3. Opposition Grows

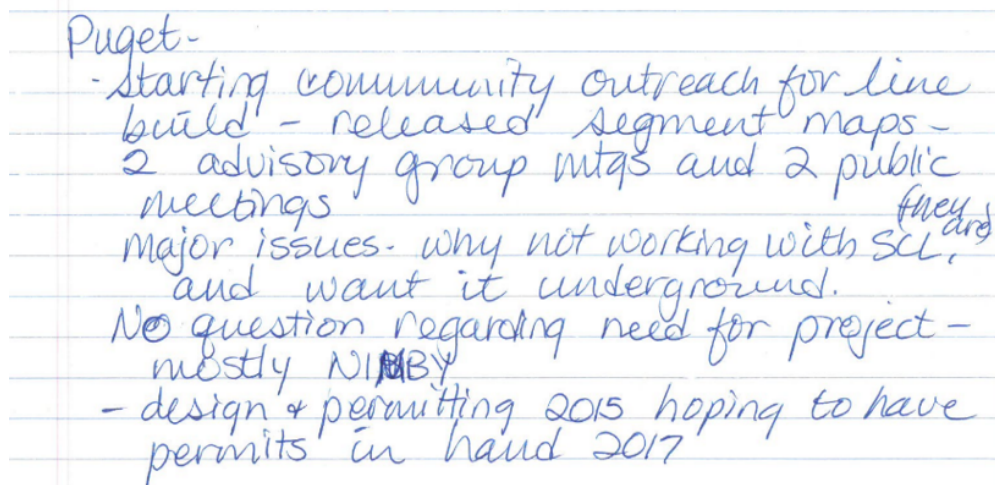
Opposition to Energize Eastside increased as residents realized the project wouldn't improve local reliability, but would destroy thousands of mature trees, and increase risk of an accidental breach of the co-located petroleum pipelines. Former employees of the company began to speak out against the project.

By 2014, it appears BPA and SCL were growing anxious about their roles in the project. In response to a FOIA request, BPA produced the following note written by an unnamed engineer in early 2014, only a few months after PSE unveiled the project:

Regarding Figures 3 and 4: The handwritten notes are from documents produced for Larry Johnson, attorney for Citizens for Sane Eastside Energy by Seattle City Light per his documents request a few years ago. This document relates to a meeting held early in the EE process between BPA, SCL and PSE. Larry

³ <https://www.bpa.gov/news/newsroom/releases/Documents/20120124-PR-5-12-Joint-transmission-system-projects-to-improve-system-reliability.pdf>

believes the purpose of the meeting was to discuss how and what BPA and SCL would contribute to the cost of EE. There are other documents with this same person's handwriting.



Puget-

- starting community outreach for line build - released segment maps - 2 advisory group mtgs and 2 public meetings
- major issues - why not working with SCL, ^{they are} and want it underground.
- No question regarding need for project - mostly NIMBY
- design & permitting 2015 hoping to have permits in hand 2017

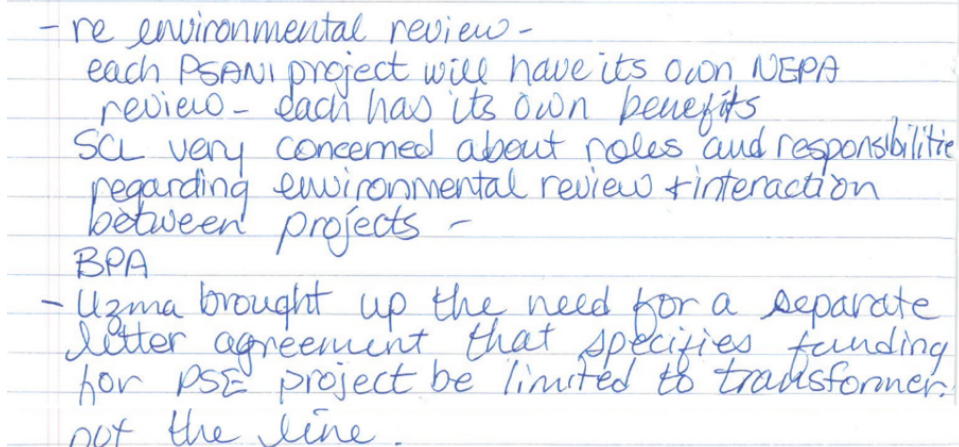
Figure 3: Notes from a BPA engineer shortly after Energize Eastside is announced

As indicated in the engineer's notes, people were puzzled why PSE and SCL weren't working together to develop a joint solution using existing lines. Residents couldn't believe that a line like this was being proposed to run overhead, when many cities were placing transmission infrastructure underground.

The engineer's comments also appear to indicate relief that no one was questioning the need for the project. Those concerns would arise later.

But there was another potential problem. If BPA were transparently involved with the project, a NEPA environmental review would be required using national standards, as opposed to the less stringent state SEPA review. Crucially, NEPA requires impacts on property values to be evaluated; SEPA does not.

To avoid the issue, BPA tried to minimize its role in the project. From the same notebook:



- re environmental review -
- each PSEAN project will have its own NEPA review - each has its own benefits
- SCL very concerned about roles and responsibilities regarding environmental review + interaction between projects -
- BPA
- Uzma brought up the need for a separate letter agreement that specifies funding for PSE project be limited to transformer not the line.

Figure 4: BPA and SCL express concerns about environmental review

By 2015, BPA and SCL had officially renounced their roles in Energize Eastside:

Concerning the Puget Preferred Plan Projects identified in Section 3(b) of the MOA, the parties agree that the BPA funding originally intended for these projects will instead be directed under separate agreement to Puget's Whatcom County Transformer project. Accordingly, the parties acknowledge that BPA is not involved in any manner or capacity in PSE's Sammamish to Lakeside to Talbot Rebuild Project or its Lakeside 230 kV Transformer Addition Project.

Concerning the Puget Preferred Plan Projects identified in Section 3(b) of the MOA, the parties agree that the SCL funding originally intended for these projects will be directed to the Lakeside 230 kV Transformer Addition Project. Accordingly, the parties acknowledge that SCL is not involved in any manner or capacity in PSE's Sammamish to Lakeside to Talbot Rebuild Project.⁴

Despite its cooperative inception and lofty press releases, Energize Eastside was now a local project pursued by PSE alone, untethered from its original regional purpose. PSE knew that the need for the lines would be difficult to prove if the regional transfers were not included in its analysis, so the company insisted that NERC TPL-001-4 transmission planning standards mandated these transfers be included in project studies. "It's just a local project," PSE insisted. But as local consumption stopped growing, due to LED lighting and other efficient technologies, the local argument began to wobble as well. With both the regional and local needs retreating, PSE is left with no way to justify the project.

4. Seattle City Light (SCL) Option

Could the SCL lines still be used to meet regional needs for less cost than Energize Eastside?

Yes.

Could a short tap from the SCL lines be used to power a larger substation at Richards Creek?

Yes.

But is the need still there and is a transmission line still the best option in an age of energy storage, smart grids, and distributed generation? That has not been proven.

5. Conclusion

Many things have changed since the 2011 study by ColumbiaGrid. At that time, there were no large energy storage projects anywhere in the world. Now, big Tesla batteries are saving Australian consumers tens of millions of dollars. BPA recently cancelled an even bigger transmission line between Oregon and Washington, favoring smarter solutions and batteries to save customers money.

⁴ Letter dated January, 2015 from Toni L. Timberman, BPA Senior Transmission Account Executive, to Ms. Booga Gilbertson, PSE Vice President Operations Services, and Mr. Phillip West, SCL Customer Service Energy Officer

The Columbia River Treaty, which promised Canada a certain level of electricity transfers, is being renegotiated. Canada is no longer counting on large transfers from the U.S. By law, British Columbia must be independent of energy deliveries from Washington. The main utility in the province, BC Hydro, is building a large hydroelectric project named "Site C" which may make British Columbia a net energy exporter.

For these reasons, it's less likely that large transfers through the Puget Sound will be critical to keeping lights on in Canada or California or anywhere else.

Transmission lines are still necessary in cases where energy sources are located far from energy consumers. But a relatively short line through densely populated residential areas is a different case. Energize Eastside is not needed to solve an ongoing capacity issue. The need for Energize Eastside is gone and unlikely to return.