

Puget Sound Area Plan Agreement Ordinance

Date of this Brief	November 21, 2011		
Supersedes	n/a		
Key Contacts	Name(s)	Phone	Short Title
	Jorge Carrasco	4-3200	Superintendent
	Phil West	4-3718	CSED Officer
Council Action Required?	Yes	If YES, within the next 3 months?	Yes
Public Hearing Required?	No		
Presenters (if applicable)	Jorge Carrasco, Seattle City Light Superintendent		

Summary Statement

The Memorandum of Agreement between Bonneville Power Administration, Puget Sound Energy, and Seattle City Light outlines a regional utility agreement to immediately address regional high voltage electric grid capacity constraints in the Pacific Northwest by undertaking eight major projects, totaling an estimated \$140 million, to upgrade the reliability of the system by year 2018.

Background

This legislation authorizes a Memorandum of Agreement (MOA) between Bonneville Power Administration (BPA), Puget Sound Energy (PSE), and Seattle City Light (SCL) aimed at improving the reliability of the regional electric grid, in the Puget Sound Area Northern Intertie (PSANI) area. Since 2007, BPA has limited energy transfers between the Puget Sound area and Canada due to congestion in the PSANI grid area. The MOA proposes several utility projects to reduce congestion and upgrade the reliability of the system, reducing the risk of region-wide customer power outages in the future.

For the past several years, ColumbiaGrid has convened the Puget Sound Area Study Team (PSAST) with area utilities to address reliability and transmission congestion issues. The PSAST team was charged with developing a “one-utility” solution to identify the best technical solution (regardless of ownership of specific transmission grid assets) and identified eight major projects, totaling an estimated \$140 million. The MOA assigns project delivery and cost sharing responsibilities between BPA, PSA, and SCL for these projects.

Under the proposed MOA, each party is assigned project delivery responsibilities for key improvements to the Puget Sound Area transmission infrastructure. BPA is responsible for the full cost of BPA sponsored projects. PSE is responsible for the full cost of PSE sponsored

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projects, with a cost adjustment (equal to a one-third cost share) for a reconductor project no longer needed because of the other PSE sponsored projects. SCL sponsored projects will be one-third cost shared. The MOA identifies approximately \$60.2 million of BPA sponsored projects, \$67 million of PSE sponsored projects, and \$16.1 million of SCL sponsored projects. SCL's share of the total costs is approximately \$10.7 million.

The SCL projects identified in the MOA are scheduled to be completed through 2017. If this legislation is approved, SCL will include these projects and cost share responsibilities in future budget and CIP submittals. No appropriations are proposed with this legislation.

Key Issues

- The Puget Sound region's high voltage electric transmission grid needs to be upgraded.
- Bonneville Power Administration, Puget Sound Energy, Seattle City Light and Snohomish PUD worked closely with ColumbiaGrid to design a regional solution.
- It has been more than a decade since the Puget Sound region has seen major investments in the region's electric grid.

Next Steps

After years of study and analysis, the PSAST team, formed by ColumbiaGrid to take a "one utility" planning approach, developed a package of eight regional infrastructure projects that are included in the MOA. These projects will be constructed in coordination in the next several years and will most effectively and efficiently address regional electric demands to serve local customers and required transfer commitments. The projects include:

- **Northern Intertie Remedial Action Scheme:** The existing Northern Intertie Remedial Action Scheme (RAS) is a pre-programmed set of automatic operating steps that are designed to protect the regional high voltage electric grid in the event of a loss of a combination of regional 500 kilovolt transmission lines. The RAS is designed to open (stop the current from flowing) all electric transmission connections between the Northwest and Canada following the loss of the two transmission lines. The short-term power outages caused by the RAS are intended to prevent the severe damage and resulting extended outages that would occur if the bulk transmission system was not able to protect itself. The RAS upgrade will involve installing new software and rewiring electrical protection devices such as breakers to improve the system.

Project Sponsor: BPA

- **500-230 kV transformer at BPA's Covington, Raver or another area substation:** With an outage of a BPA 500 kV line near Renton and subsequent outages of two other South King County 500 kV lines, BPA's Tacoma 500-230 kV transformer can overload and reduce south-to-north transfer capability. To help prevent this from happening and to address needed bulk power transformation capacity, BPA will install a third 500 – 230 kV transformer at its Covington, Raver or another area substation, depending upon the most efficient and effective location for the added capacity. The project utilizes an existing 500 kV line between Raver and Covington.

Comment [W1]: Costs removed from CLIP per conversation with Jackie Smith 10/24.

Project Sponsor: BPA

- **Sammamish – Lakeside – Talbot 230 kV transmission line:** PSE’s bulk power system serving customers in Bellevue and greater eastside cities is at capacity. PSE plans to address its local bulk power needs by upgrading its existing Sammamish-Lakeside-Talbot 115 kV lines to 230 kV utilizing its existing utility corridor and provide new 230-115 kV transformation at PSE’s Lakeside substation in Bellevue. The PSAST team will leverage this project to address the regional need for a new 230 kV transmission path through the Puget Sound area to increase south-to-north transfer capability.

Project Sponsor: PSE

- **Six ohm series inductors:** Underground 115 kV cables in the downtown Seattle area of the system limit south-to-north transfer capability. The proposed project is to add 6 ohm series inductors to the Massachusetts-Broad Street and East Pine-Broad Street 115 kV lines. In addition, a 6 ohm series inductor will be required in the future on the proposed North Downtown-Canal line as part of the North Downtown substation project. The inductors will make the cables much less sensitive to transfers between the Northwest and Canada and, at the same time, do not impact the reliability of transmission service to SCL’s Broad Street substation.

Project Sponsor: SCL

- **Bothell – SnoKing reconductor:** The Bothell-SnoKing No. 1 and No. 2 230 kV transmission lines can limit south-to-north transfer capability under multiple system conditions. The proposed project is to reconductor the Bothell-SnoKing 230 kV lines with high-temperature conductor utilizing the existing structures. Due to the planned Talbot-Lakeside-Sammamish upgrade, the reconductor achieves sufficient capacity without a complete rebuild of the lines.

Project Sponsor: BPA

- **Delridge – Duwamish reconductor:** Potential overloads on this transmission line limit the south-to-north transfer capability. The project will reconductor SCL’s Duwamish-Delridge 230 kV transmission line with high temperature conductor using the existing structures.

Project Sponsor: SCL

Comment [W2]: Third set of inductors left in the description per the Exec group.