

**EXH. RBB-5
DOCKETS UE-240004/UG-240005
2024 PSE GENERAL RATE CASE
WITNESS: ROQUE B. BAMBA**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**Docket UE-240004
Docket UG-240005**

**FOURTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

ROQUE B. BAMBA

ON BEHALF OF PUGET SOUND ENERGY

FEBRUARY 15, 2024



BHM-SED #4 115 kV Line
Corporate Spending Authorization (CSA)

Date Created:	Friday, February 10, 2023
Discretionary/ Non-Discretionary:	Discretionary
Multi Year Rate Plan:	Programmatic
Equity Impact:	Yes
Strategic Alignment:	Operate the Business-Reliability
Estimated In-Service Date:	Thursday, December 31, 2026
Current State (Business Need):	<p>The Sedro Woolley-Bellingham (BHM-SED) #4 115 kV line has been a regional and local transmission system bottleneck for over twenty years. The low capacity line ratings of the existing conductor would cause the line to exceed its allowable capacity rating for several contingencies and would limit generation capacity in Whatcom and Skagit Counties. Furthermore, loss of BPA Custer-Murray and Sedro-BPA BHM has been shown to overload SED-BHM #4. The Non-Fault Tripping Scheme trips the line to avoid the overload and violation. This is extremely problematic, as it leaves SED-BHM #3 as the only PSE transmission link between Skagit and Whatcom counties with sustained outages to Norlum and Alger Substations. Finally, the condition of the line is poor with over 350 pole structures in need of replacement within the 24 mile long corridor. The lines' wishbone construction consists of wood cross-arms that have degraded and are in need of replacement as well as the copper conductors, suspension insulators and wedge connectors. There have been five wedge connector failures since 2009. One of these wedge connector failures, which tripped the BHM-SED #4 line, was a major factor in the loss of the entire Skagit County and Whidbey Island on April 23, 2009. The O&M costs will continue to increase as the line continues to degrade thus requiring more maintenance and repair work.</p>



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Desired State (Proposed Solution):

Replace approximately 24 linear miles of 4/0 Cu transmission conductor with 1272 ACSR transmission conductor (installed at 115 kV standard, rated at 100°C). Replace and upgrade distribution underbuild along the route. Complete substation equipment replacements or installations at three substations (Sedro Woolley, Bellingham, Alger). The project has been broken-down into 6 phases to coordinate with concurrent distribution system upgrades; Phase A-E and Phase WSDOT. Phase A included approximately four miles of the line in Skagit County; Phase B included approximately seven and a half miles of the line in Skagit County; Phase C includes approximately six miles of the line in Whatcom County; Phase D includes approximately six miles of the line in Whatcom County and Phase E includes rebuilding the final half mile of the line in Skagit County. Phase A and Phase B have been constructed and were placed in service in 2018. Phase A was completed at a cost of \$2,742,971, and Phase B was completed at a cost of \$6,022,485.



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Outcome/Results
(What are the
anticipated benefits):

Once the BHM-SED #4 115 kV line has been rebuilt, it will be able to serve Skagit and Whatcom counties without restrictions or line limitations.



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Dependencies: No

Dependencies comment: None.

Escalation Included: Yes, escalation has been included per corporate guidance.

Total Estimated Costs: \$23,000,000

Estimated Five Year Allocation:

Funds Type	ID	Line Item Description	Previous Years Actuals	Fiscal 2024 Requested	Fiscal 2025 Requested	Fiscal 2026 Requested	Fiscal 2027 Requested	Fiscal 2028 Requested
Capital	W_R.10054.01.01.01	E Bellingham Sedro 4 115Kv Recond Tline	\$ -	\$ -	\$ 1,452,330	\$ 6,715,988	\$ 150,000	\$ -

Incremental O&M: No

Qualitative Benefits: Once completed, the new line will replace aging infrastructure. Provide Non-Fault Tripping Scheme to protect from Sedro Woolley – Bellingham #4 from overload therefore eliminating sustained outages at Alger and Norlum and strengthens the transmission system between Whatcom and Skagit Counties.

Quantitative Benefits:

Quantitative Benefits	Benefit Type	Previous Years	Fiscal 2024	Fiscal 2025	Fiscal 2026	Fiscal 2027	Fiscal 2028	Fiscal 2029	Remaining Costs	Life Total
BHM-SED #4 115KV LINE	Cost Avoidance	\$ 14,011,682	\$ 1,452,330	\$ 6,715,988	\$ 150,000	\$ -	\$ -	\$ -	\$ 8,988,318	\$ 31,318,318

Risk Summary: Material failure of aging crossarms, wedge connectors, or transmission poles could result in sustained line outages.



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Change Summary:

Planning Cycle	Change Summary	Last Update Date
2022 Baseline Cycle	This CSA has been migrated into the EPPM tool at go-live as part of the Phase 1 EPPM implementation effort. The projects in this CSA were previously approved for the 2023-2027 capital plan. Please refer to the original CSA document for additional information (if available.)	2/10/2023



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Approval History:

Approved By	Date Approved
Approved by Cost Center Owner: Pagano , Tony	3/31/2023
Approved by Director Sponsor: Roque Bamba	4/6/2023
Approved by Executive Sponsor: Koch , Dan	4/6/2023
CSA Status changed to Approved	4/6/2023
Approved by Cost Center Owner: Lim , Thina	12/5/2023
Approved by Director Sponsor: Lim , Thina	12/5/2023
Approved by Executive Sponsor: Lim , Thina	12/5/2023
CSA Status changed to Approved	12/5/2023
Approved by Cost Center Owner: Pagano , Tony	1/25/2024
Approved by Director Sponsor: Bamba , Roque	1/26/2024
Approved by Executive Sponsor: Vargo , Michelle	2/1/2024
CSA Status changed to Approved	2/1/2024