

**EXH. RBB-4
DOCKETS UE-22___/UG-22___
2022 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-22___
Docket UG-22___**

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

ROQUE B. BAMBA

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 31, 2022

Date: **Date of Signoff Distribution**

To: Booga Gilbertson
Mike Richardson
Cathy Koch

From: Bob Parker, Senior Project Manager

CC: *Project Management Office*
Carol Jaeger (Transmission Planner)
Dean Holsberry (Project Control Specialist)
Alison Smith (Project Engineer)

Re: Capital Spending Business Case Application – *Bellingham Substation rebuild*

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Project/Program Name: Bellingham Substation rebuild			
Business Sponsor:	Cathy Koch	Date Submitted	MM/DD/YY
Submitted By:	Bob Parker		
To Be Used for CSA Revisions			Revision #: 0
Project Manager:	Bob Parker	WBS #s:	P.10012.63.01.10.01 P.10012.63.01.10.02 P.10012.63.01.10.03 P.10012.63.01.10.04 P.10012.63.01.10.05 P.10012.63.01.10.06 P.10012.63.01.10.07 P.10012.63.01.10.08 P.10012.63.01.10.09
Gate Change:	Y/N	Request Phase of Project ¹	Design

Project Financials:	Initial (v.1)	Baseline (v.# ²)	Current (v.#)	Requested (v.#)
Expected Completion Month/Year	MMM-YY	MMM-YY	MMM-YY	MMM-YY
Lifetime Cost:	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Capital:	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
OMRC:	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
Incremental O&M and Benefits (5 year)	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0
5 Year PV ³			\$ 0.0	
Payback Period: (Lifetime Capital /Incremental O&M & Benefits)	0.0	0.0	0.0	0.0
<Phase Name> Budget ⁴	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0

Change Summary

¹Phase of project after a gate change. Current Phase if not a gate change.

² Version number of most recent approved CSA

³ Use 7.77% as the annual discount rate

⁴ Phase of project after a gate change. Current Phase if not a gate change.

1. Project Summary

Bellingham Substation is PSE's most important substation in Whatcom County; it serves as the transmission hub for load, generation and interconnections with BPA (via BPA Bellingham Substation), Whatcom PUD and PSE's Skagit County (via Sedro Woolley Substation). There are 11 transmission lines and a 115 kV capacitor bank connected to the Bellingham Substation 115 kV bus. It directly serves nine distribution substations, dozens of connected substations and integrates four generators (Encogen, Sumas, Ferndale and Whitehorn). The existing main bus has low capacity and reliability. Studies indicate that after the June 2016 bus reconductor project, the bus capacity will violate NERC standards within 3-4 years. Aging infrastructure in the substation includes lattice structures, 600 amp rated switches and 40+ year old oil-filled circuit breakers. An Interim Operating Plan is in place due to the Bellingham bus configuration, causing up to 330 MW of Whatcom generation to run for multiple contingencies (Load Office TL-15).

Project Description

To install a new breaker and a half configured 115 kV substation in the former Bellingham Substation 55 kV yard (now empty) then retire and remove the existing Bellingham Substation.

Funding Request

The project team recommends approving the Bellingham Substation rebuild lifetime budget of \$21.36M dollars through 12/31/2018 and funding the remaining activities including construction for \$19.25M dollars through 12/31/2018. The phase breakdown costs are \$384k for Design and \$18.87M for Execution. This funding request is based on a Level 1 estimate.

ISP Alignment

The primary Integrated Strategic Plan ("ISP") objectives and strategies affected by this business case are: System Reliability & Integrity (reduce electric system repair times and failure rates, increase Encogen plant reliability/availability, and enable growth (new customer counts)); Safety (reduce risk of injuries in the work place); Process & Tools (meeting NERC/WECC compliance requirements); Customer (customer satisfaction with PSE options and their perception of PSE's corporate citizenship); and, Financial (Good Benefit/Cost iDot score and reducing future O&M costs).

Organizational Changes

Does not apply.

Sum of points for change characteristics assessment (out of 65 total):

10

Risk of Not Doing / Delaying

- It will mean an increasing risk of equipment failures and customer service interruptions due to degrading equipment. Future financial penalty risks by potentially violating NERC TPL Standard.
- At the same time increases O&M costs to maintain, repair and replace degrading equipment.

2. Schedule and Cost

Schedule

Line #	Lifecycle Phase	Start	Finish	2016				2017				2018					
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
1	Design	7/1/2016	3/31/2017														
2	Execution	1/2/2017	6/29/2018														
3	Close-out	7/2/2018	10/1/2018														

Capital Costs:

Project Phase Costs	TOTAL	2015 & PRIOR	2016	2017	2018	2019	2020
Initiation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Planning	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Design	\$ 773,239	\$ 389,036	\$ 384,203	\$ -	\$ -	\$ -	\$ -
Execution	\$ 15,468,275	\$ -	\$ -	\$ 11,135,221	\$ 4,333,054	\$ -	\$ -
Close-out	\$ 574,556	\$ -	\$ -	\$ -	\$ 574,556	\$ -	\$ -
Base Contingency	\$ 1,026,172	\$ -	\$ -	\$ 707,663	\$ 318,509	\$ -	\$ -
Reserve Contingency	\$ 1,527,277	\$ -	\$ -	\$ 1,020,612	\$ 506,665	\$ -	\$ -
Total Capital	\$ 19,369,519	\$ 389,036	\$ 384,203	\$ 12,863,496	\$ 5,732,784	\$ -	\$ -

O&M Costs: OMRC⁵

⁵ OMRC – O&M related to capital

Project Phase Costs	TOTAL	2015 & PRIOR	2016	2017	2018	2019	2020
OMRC	\$ 273,395	\$ -	\$ -	\$ 135,813	\$ 137,582	\$ -	\$ -
Total OMRC	\$ 273,395	\$ -	\$ -	\$ 135,813	\$ 137,582	\$ -	\$ -

Incremental O&M and Benefits

Project Phase Costs	TOTAL	2016	2017	2018	2019	2020
Incremental O&M	\$ (45,000)	\$ -	\$ -	\$ (22,500)	\$ (22,500)	
Cost Savings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Incremental Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Economic Benefit	\$ (45,000)	\$ -	\$ -	\$ (22,500)	\$ (22,500)	\$ -

Notes:

- 1) Incremental O&M** are permanent changes to O&M. Can be a net increase or (decrease) in O&M.
 - a. A reduction of \$2,500 per year x 9 oil-filled circuit breakers in O&M maintenance cost for a total \$22,500 per year reduction.
- 2) Savings** are savings due to removal of costs or increases of efficiencies. Do not double count with O&M savings.
- 3) Incremental Revenue** are addition revenue directly generated by this project. Does not include earnings from Rate Base. **Do not incorporate revenue requirement & ratebase in the PV calculation.**

4. Project Sign-Off

Preparer	Title	Date	Signature
Bob Parker	Senior Project Manager		
Carol Jaeger	Consulting Engineer		

Approver	Title	Role	Date	Signature
		Sponsor		

Appendix A - CSA Change Log

Revision	Date	Submitted by	Approved by	Change Summary and Links to Updated Documents