

**EXH. RBB-8  
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\_\_\_**

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

**ROQUE B. BAMBA**

**ON BEHALF OF PUGET SOUND ENERGY**

**JANUARY 31, 2022**

**TONO SUBSTATION**  
**Annual Budget Record**  
**Corporate Spending Authorization (CSA)**

<b>Date Submitted:</b>	6/4/2021
<b>Officer Sponsor:</b>	Dan Koch
<b>Project Director:</b>	Roque Bamba
<b>Responsible Cost Center:</b>	4022

**I. Project Overview**

**Business Need:** One of the single phase 500-115kV transformers (XFR 0473) at Tono Substation is nearing failure with an estimated remaining service life of twelve months with no available spare transformer. The other two single phase transformers currently in service are also showing signs of failure with an estimated remaining service life of five years. If one or more of the Tono Substation transformers fail, a long term outage would occur due to the 12+ month lead time of this non-standard equipment. Transformer 0473 was the spare, but it was placed into service in October 2018 following the failure of transformer 0470 in September 2018.

To compound the issue:

- Power flow contingency analysis simulations show a long term outage of the Tono substation EHV source (via the transformers) can significantly degrade reliability, resiliency and operability of the electric grid in Thurston County and neighboring electric systems;
- Tono substation has additional maintenance concerns due to aged infrastructure equipment operating beyond their recommended service life;
- Though grandfathered from policies effective after the substation went into service, the substation is non-compliant with current IEEE 979 (spacing between the transformers) and environmental policies (no spill prevention counter measures in-place).

**Proposed Solution:** The preferred solution consists of replacing the aging transformers with two new three-phase 500-115 kV transformers with one as a spare and additional substation work to remediate the aging infrastructure.

**Project Outcome/Results:** The proposed solution will:

- Solve the asset management need for a spare transformer and low voltage concerns in south Thurston County.
- Solve aging infrastructure concerns by replacing two 115 kV oil circuit breakers with SF6 circuit breakers, replace all protection relays and faulty control cables as they are all operating beyond their expected service life.

**OCM, Process & Training Impact:**  N/A     Low Impact     Medium Impact     Significant Impact  
 NA

**Primary ISP Alignment:** Processes & Tools    [ISP strategy descriptions](#)

ISP Strategy Description:	Process & Tools - System reliability and integrity		
Portfolio Description:	Risk Mitigation	<a href="#">Capital Allocation Definitions</a>	
Project Complexity:	<input type="checkbox"/> Straightforward and well understood	<input checked="" type="checkbox"/> Complex and well understood	<input type="checkbox"/> Complex and not well articulated

## II. Key Schedule and Financial Information

Expected Start Date If Funded:	Q2 of 2020
Expected In-Service Date:	Q4 of 2022

### High-Level Schedule 2 years

Duration				
Planning	Design	Execution	Total Project	Anticipated Closeout date
2 months	12-18 months	6 months	24 months	10/2022

### Initial Estimated Funding by Phase as of 04/8/2020:

Initiation	Planning	Design	Execution	Closeout	Total
2.5%	5%	10%	80%	2.5%	\$17 million

Initial Grand Total Estimate (contingency included): <a href="#">Contingency Standard</a>	Capital: \$17-26 million (initial planning estimate from solutions report)	OMRC/Project O&M: \$0
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### Estimated Five Year Allocation:

Category:	Lifetime Actuals	2021	2022	2023	Total
Capital (contingency included)	\$600,000	\$600,000	\$15,500,000	\$300,000	\$17,000,000
OMRC / Project O&M	\$0	\$0	\$0	\$0	\$0

## III. Ongoing Benefits:

<b>Summary Benefits:</b>	<ul style="list-style-type: none"> <li>- Maintain reliability and integrity of Tono Substation and South Thurston County.</li> <li>- Having direct tie between BPA - CW Paul and Tono saves PSE approximately \$7 million a year in wheeling fees for Centralia Generation.</li> <li>- Main source into South Thurston County bulk electric system.</li> <li>- Eliminates aging infrastructure concerns by replacing equipment past its expected service life.</li> <li>- Solves the asset management need for a spare transformer.</li> <li>- Provides voltage support during certain outage conditions.</li> </ul>
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Category:	2019	2020	2021	2022	2023	Total
Ongoing O&M (to be funded by business)	NA	NA	NA	NA	NA	NA

Ongoing O&M (requesting \$'s)	NA	NA	NA	NA	NA	NA
Ongoing Capital (Capital Tail)	NA	NA	NA	NA	NA	NA
Benefits	NA	NA	NA	NA	NA	NA
Net impact (= Benefits – O&M)	NA	NA	NA	NA	NA	NA
* Payback in Years	Years = Total Costs / Annual Cash Benefits					

\* Enter positive amount or Not Applicable

#### IV. Risk Management Summary

<b>Summary of high level risks sentence:</b>	All three of the existing transformers at Tono Substation are operating beyond their expected service life with one transformer nearing failure with an estimated remaining service life of twelve months. If one of the transformers fails, there are no available spares, and this would cause a long term outage to occur.
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#### V. Phase Gate Change Summary

<b>Phase:</b>	Initiating to Planning
<b>Scope:</b>	Replace the existing three single phase transformers with two new three phase transformer and address additional concerns due to aging infrastructure concerns.
<b>Budget:</b>	\$17-26 million (Note: The previous CSA that was approved in May 2020 was intended to be used for the 5 year budget planning process only. The project has since completed the initiation phase with updated costs which are reflected in this CSA).
<b>Schedule:</b>	Energize Tono Substation by 2022
<b>Benefits:</b>	No change to the benefits with this phase gate change.

<b>Prepared by:</b>	Hector Gonzalez
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#### VI. CSA Approvals

Project Phase	Initiation to Planning			
Approved By	Title	Role	Date	Signature
Tony Pagano	Manager Project Management	Manager	June 17, 2021	DocuSigned by: <i>Tony Pagano</i> C7D3BC09443B4AC...
Roque Bamba	Director Project Delivery	*Director Sponsor	June 21, 2021	DocuSigned by: <i>Roque Bamba</i> BC203E4E58BB426...

\*Director Sponsor attests that all considered documentation has been approved.