

2023 IRP Overview

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October 2, 2023 Previous Briefings: January 24, 2023 & July 25, 2023

Agenda

- Study Overview and Timeline
- Phase 2 : PUD Need
- Phase 3 : Resource Options
- Phase 4 : Optimized Portfolios
- Phase 5 : Resource Strategy
- Next Steps

Today's briefing is informational, no Board action is requested today.

Today's conversation will inform the Draft 2023 IRP Update, which is proposed to be released on October 23, 2023 for further public comment.

Additional Next Steps in this Process will be discussed in this presentation's closing slide.



The IRP Timeline



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Review Phase 2 Findings – Load Forecast is Increasing

 The PUD forecasts significant future load growth driven by electrification, electric vehicles, and local economic growth.



Review Phase 2 Findings: PUD Will Have Significant 5 Future Energy and Capacity Resource Need Beyond Current Portfolio

Fifth Percentile Energy and Capacity Needs after Forecast Conservation





Phase 3 – Supply-Side Resource "Menu"

Baseload Resources

- Firmer generation profile
- Biomass
- Solar + Storage
- Wind + Storage
- Firm Annual Energy Contract
- Firm Winter Energy Contract
- BPA Tier 2 Power
- Small Modular Nuclear Reactors (E WA, 2030's)
- Local Fusion (2040's)

Variable Resources

- Cheaper, less firm profile
- Local Run-of-River Hydro New Stream Development
- Small, Local Utility Scale Solar
- E WA Utility Scale Solar
- Gorge Wind
- Montana Wind
- <u>West-of-Cascades Run-</u> of-River Hydro Buyout
- <u>Customer Rooftop Solar</u>
 <u>Incentive</u>

Bold, underlined items are new in the 2023 IRP

Dispatchable Resources

- Can turn on/off for peaks
- 12-Hr Regional Pumped Storage Hydro
- 4-Hr Battery Storage
- Annual Firm Capacity Contract
- Winter Firm Capacity Contract
- Seasonal Exchange Capacity Contract
- Natural Gas Peaker Plant (CETA Baseline Reference Only)
- Local Run-of-River Hydro
 Capacity Uprate
- 8-Hr Local Pumped Storage Hydro
- 10.66-Hr Local Pumped Storage Hydro
- 12-Hr Local Pumped Storage Hydro

Phase 4 Result: Solving P5 Heavy Load Hour (Monthly Energy) Metric – Base Case

Base Case P5 HLH - Resource Additions vs Resource Need



SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT

Phase 4 Result: Solving P5 Peak Week (Capacity) Metric – Base Case

Base Case P5 PW - Resource Additions vs Resource Need



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Phase 4 Result: Resource Strategy Additions 2024-20245

2023 IRP Resource Strategy



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Phase 4 Result: Resource Strategy (10 Yr)¹⁰



What is Tier 2 BPA Power?

- Tier 2 BPA Power is power BPA provides to serve Above High Water Mark load, or, the customer load that is not eligible for atcost Tier 1 BPA Power. We expect to be eligible for Tier 2 in 2029.
- Tier 2 is proposed to come in two forms: Short-Term and Long-Term
 - Short-Term would be sourced from the wholesale market, subject to biennial price resetting and come with carbon associated with the market
 - Long-Term would be sourced from physical resources, would not be expected to be subject to significant biennial price swings, and would come with a lower carbon profile and RECs for regulatory compliance

Why look at Tier 2?

- Mitigate delivery and execution risk
 - Scale of Resource Need is big; how much development and acquisition risk do we want to assign to ourselves?
 - What is expected level of competition for Tx rights and queue positions and our competitive position for them
- Add additional optionality
 - With Block structuring we can create deferral period and market/physical resource branching options
- Access energy block products
 - Tier 2 is sold in annual flat energy blocks

A Flexible Tier 2 Strategy

volume can still be served **Tier 2 Trajectory** by Short-Term Tier 2 Provides ~10 yr runway for market and resource development dynamics to settle during industry transformation period Eligibility Tier 2 ——Cap

Diversifies resource

backing, half eligible

Block/Slice remains preferred strategy unless product economics change significantly

Block/Slice vs. Load Following Incremental NPV Comparison



Load Following Analysis Extended



Key Differences*:

- Additional Incremental Cost of Load Following Product (as a BPA bill) is \$650M
- Must buy \$864M in complementary Supply-Side resources for Block/Slice for load service
- Additional I-937, CETA regulatory compliance costs (RECS) with LF Product at \$97M
- Must buy ~\$120M more Tier 2 under LF
- Slice/Block comes with ~\$510M in wholesale energy and attribute marketing potential
- LF Product avoids \$80M in WRAP compliance direct costs

Overall:

- Highly dependent on LF Rate Structure
- Similar out-the-door costs, regulatory compliance and revenue potential makes Block/Slice preferable quantitatively
 - * All dollar values are NPV figures for years 2024-2045 in 2020 dollars

Flexible Resource Strategy

- Actively negotiate BPA contract for best value across products
- Actively pursue cross-product resource additions
 - Conservation
 - Smart Rates rollout
 - Evaluate Program Efficacy of highest value Equipment Based Rate Programs
 - Tier 2
 - Short-Term Market Contracts
 - Batteries at competitive price-point
- Position PUD to be nimble if BPA Product dynamics change
 - Prepare for potential Renewable RFP once Post-2028 BPA Product choice is clear

Next Steps

- Additional public outreach: Open House on Thursday November 2
- Write physical IRP document: Release Targeted October 23
- Commission Update on November 21
- SEPA process complete by December
- Targeting Commission adoption of 2023 IRP Update in December

Questions and Discussion

