Post 2028 Residential Exchange Program
February 21, 2023

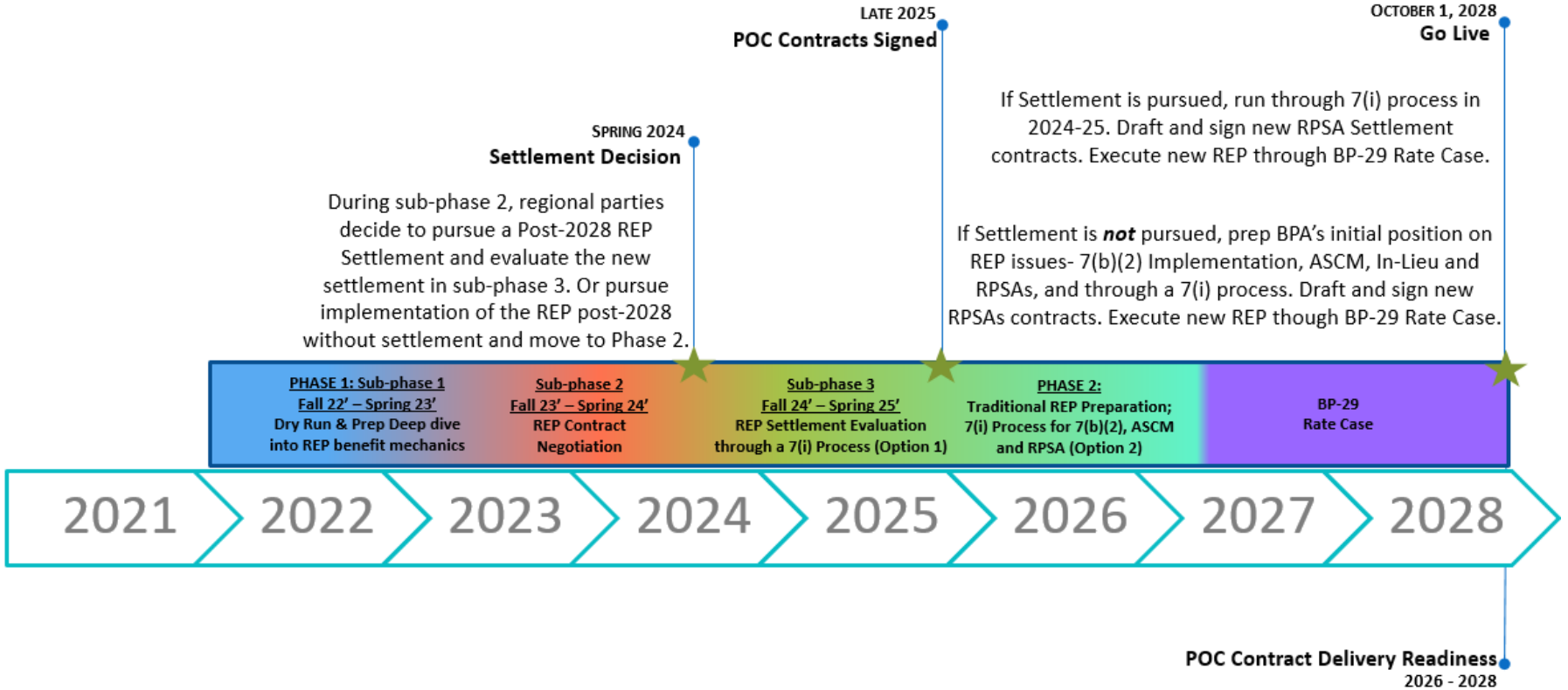
POST 2028 REP

Agenda for February 21, 2023

Time	Topic	Presenter(s)
9:00 – 9:05	Introduction	Scott Winner
9:05 – 10:05	Q&A Session on Previously Presented Materials	Paulina Cornejo
10:05 – 10:15	BPA's Clarifying Questions on Feedback Submitted	Paulina Cornejo
10:15 – 10:30	What We've Heard and the Path Forward	Paulina Cornejo
10:30 – 10:45	***BREAK***	
10:45 - 11:30	Deep Dive - Scenario Assumptions and Results	Stephanie Adams
11:30– 11:45	Recap - Conservation Treatment in 7(b)(2) Rate Test	Stephanie Adams
11:45 - Noon	Next Steps, Feedback and Questions	Michael Edwards

Introduction

Post 2028 Two-Phase Approach Timeline



Public Process Plan – Two-Phase Approach

- **Phase 1 is comprised of three sub-phases designed to support and facilitate regional efforts towards a new REP settlement. If successful, implementation of the REP under new settlement agreements will commence BP-29 (October 1, 2028).**
- **Phase 2 focuses on positioning on REP issues and policies to implement the program traditionally, for the BP-29 rate case.**

Phase 1 – Settlement (2022-2025)

Sub-Phase 1:
REP Dry Run and Preparation
(Fall 2022 – Spring 2023)

Sub-Phase 2:
REP Contract Negotiation
(Fall 2023 – Spring/Summer 2024)

Sub-Phase 3:
REP Settlement Evaluation Process and Decision (7i)
(Fall 2024 – Spring 2025)

The settlement phase builds on the foundation established by the 2012 REP Settlement– BPA's focus and efforts are to facilitate and encourage regional discussions towards a structured settlement of the REP.

Phase 2 – Traditional REP Preparation Phase (2026-2029)

If no settlement is reached in 2025, BPA must shift its focus from facilitating and supporting settlement discussions to preparing its positions and policies for the BP-29 rate.

Informational Resources and Contact

- We encourage participants to access educational and background information on REP, which can be found on the Post-2028 REP external webpage.
  - If parties are seeking additional information not posted here, please email us directly with your inquiry.
- The Post-2028 REP team can be contacted directly via email to: REP2028@bpa.gov.

Q & A Session on Previously Presented Materials

Questions Submitted and BPA Responses

Are partial requirements customers eligible for REP benefits, and how is eligibility determined?

- Under section 5(c)(1) of the NW Power Act (NWPA), any utility within the Pacific NW region is eligible to participate in the Residential Exchange Program (REP). Whether the utility receives any benefits depends on the difference between the participating utilities' Average System Costs (ASC) and BPA's PF exchange rate (PFx). If a utility's ASC is greater than BPA's PFx Rate then it's likely that utility will be eligible for REP benefits. If it's ASC is below BPA's PFx Rate, then, depending on the contract terms, the utility either has to pay BPA or incur a negative balance that is used to offset future REP payments.
- That stated, BPA and customers taking power under a PF tiered rate design agreed through the Regional Dialogue contract to modify the type of costs that would be eligible for exchange to align with the objectives of tiered rates – each customer would be responsible for the cost of meeting its own load growth.

Questions Submitted and BPA Responses

Do IOUs have a right to exchange physical power?

- The Northwest Power Act, section 5(c)(1), describes the exchange as two simultaneous sales of power between BPA and the exchanging utility. Due to practical reasons and because the two sales offset each other and because the NWPA requires the "cost benefits" of this exchange to be passed through to the utilities' customers, BPA has historically implemented the REP as a "paper transaction" or a financial exchange.
- The REP may involve physical power if BPA chooses to purchase power from a source other than the REP participant under section 5(c)(5). Section 5(c)(5) permits BPA to purchase power from another source "in lieu" of purchasing power from an REP participant at their ASC. Under this limited scenario, BPA may sell actual power to the REP participant. The Administrator has discretion as to whether to implement an "in lieu" transaction under the Northwest Power Act. Even if implemented, though, BPA has historically permitted an REP participant, through the REP contract, to "deem" its ASC equal to the cost of the third-party power to avoid the actual physical sale.

Questions Submitted and BPA Responses

What happens if BPA augments the system post-2028 and the PF rate increases?

- All else equal, as the PF rate increases exchange benefits would decrease. In general, we expect that augmentation would increase the PF rate and thus decrease exchange benefits – see scenario #24 Loads – PF Rise (+1000aMW) in the 09.27.22 Post 20208 REP Phase 1 Kickoff Workshop presentation material.

- A lot depends on how BPA augments and what is meant by "system." If BPA augments the Federal Base System (FBS) and categorizes that replacement as an FBS Replacement, then the cost of these replacements would be seen in both the Program Case and the 7(b)(2) Case. More augmentation should, in general, mean that there is more FBS available to serve 7(b)(2) loads, leading to fewer resources being pulled from the 7(b)(2)(D) resource stack. This, in turn, reduces the cost of the 7(b)(2) case relative to the Program case, increasing rate protection and decreasing exchange benefits.

Questions Submitted and BPA Responses

What are the drivers for an ASC methodology change? Why not roll over the current settlement?

- The 2008 ASC Methodology (ASCM) version arose from a need to modernize ASC calculations from its previous 1984 iteration. Certain aspects of the 2008 ASCM will have to be revised to conform to the any changes to the Power Sales Contract and rate methodology that will be in effect for the post-2028 period. For example, the 2008 ASCM includes specific terms and requirements that are tied to the Regional Dialogue Power Sales Contract and the Tiered Rates Methodology (TRM). Assuming these will change for the post-2028 period, the 2008 ASCM will similarly need to be revised to account for these differences.
- In addition, revisions may be needed to adapt to the new markets that are arising in the Pacific Northwest and to ensure new regional policies, such as carbon requirements, are properly reflected in a utility's ASC. Finally, in view of these changes, the underlying policy rationale for either including or excluding certain costs or credits from the ASCs may need to be revisited

Questions Submitted and BPA Responses

Will BPA commit to revising its Average System Cost methodology to make it more realistic, less prone to such a wide range of possible outcomes, include True-up mechanisms?

- The 2008 ASCM provides a method to evaluate and discern which resource costs and revenues incurred by the participating utility ultimately feed into the ASC formula. It's not a process deriving multiple scenarios or outcomes. Any revisions will be deliberated and agreed to in a regional collaboration process as outlined in the timeline shared at the January 24th workshop.

The ASCM revision timeline is out of sync with Sub-Phase 2 Settlement Negotiations. Will BPA consider aligning both timelines?

- Our intent was always to allow the ASCM and implementation of a REP settlement to be considered together. The timeline presented at the January 24th workshop considers drafting and filing a ROD with FERC following publication of BP-26 Final Proposal so as to not supersede the current 2008 ASCM. However, given our intent and the feedback received, we will reevaluate our proposed two timelines and provide additional information at the next workshop.

Questions Submitted and BPA Responses

Where market assumptions are reflected in the ASC and REP modelling? What market forecast is used?

- BPA uses the Aurora forecasting model for determining market price assumptions used in both the ASC forecasting model and the RAM REP model. Market prices from Aurora are used in calculating ASCs, Net Secondary Revenue, Firm Surplus Revenues, Demand Prices, Generation Inputs as well as in the 7(b)(2) Resource Stack as a Type 3 resource.

Questions Submitted and BPA Responses

What are the nuances of using market prices for sales and implications of allocation rate protection to rates without load (IP rate and NR rate)?

- With regard to load pools with no load, we resolve getting an "undefined" rate result by including an insignificant amount of load in all load pools even when no load exists (such as NR). Rate protection is allocated to all other loads based on its volumetric size, so the larger the load the more rate protection costs it bears. For example, as the amount of DSIs have decreased through time so has the total amount of rate protection borne by DSIs.
- The market price component associated with determining a forecast of Secondary Sales and Firm Surplus Revenues means the cost allocated to the FPS Rate Pool including Rate Protection allocated to the FPS/Secondary Load pool might exceed the revenues established by market conditions. In the event, cost exceed Firm Surplus Secondary Sales the resulting deficiency referred to as the "FPS Deficiency" in RAM will be allocated to the remaining load pools (PF, IP, NR) based on the surplus deficit cost allocators. Given the lack of IP and NR loads currently forecast the majority of the deficit is allocated to the PF rate pool.

Questions Submitted and BPA Responses

Are scenarios moving just one variable or multiple? It would be useful to see more detail behind them. How are interdependencies reflected in the scenarios? Why such differences in outcomes? Has BPA identified the key levers influencing the outcomes?

- Scenarios are primarily moving only one variable except for scenarios #25 and #26 which combines changes in loads and resources. The specific scenarios and accompanying results were presented at the September 27th workshop; however, additional details have been provided as a recap topic for today's workshop (see slides 25-47).
- Interdependencies associated with variables modeled in specific scenarios are limited; for instance the high market price scenario results isolated the change to Net Secondary and Firm Surplus Revenues only and did not get picked up in ASCS, Demand Rates, Gen Inputs and the 7(b)(2) Resource Stack.
- In regards to key levers; each scenario represents a lever particularly those altering the methodology used for running the 7(b)(2) rate test. Some adjustments like the removal of Transmission costs from ASCs has a smaller impact on REP benefit levels compared to the removal of Conservation from the 7(b)(2) Rate Test.
- Phase 1 is educational in nature and the broad range of scenarios covering both implementation methodology and sensitivities are intended to help participants understand how different components impact REP benefit levels.
- In the REP-12 Settlement, a few multi-variable scenarios were calculated. If stakeholders have a few of these type of scenarios they would like to evaluate, please let us know. Consistent with that offer, we plan to add a scenario consistent with the feedback we received from the IOUs.

Questions Submitted and BPA Responses

Will BPA consider reflecting in the Post-2028 REP scenarios, interpretations of 7(b)(2) Rate Test implementation set forth by IOUs in the February 14, 2023 letter?

- In light of the feedback received on this topic, BPA intends create a new scenario incorporating the IOUs interpretations of implementing the 7(b)(2) rate test described in their February 14, 2023 letter. BPA will seek clarification on a few interpretations.

Under the interpretation that secondary sales are to be allocated rate protection, would that rate protection be allocated to both the Slice and Non-Slice share of secondary?

- Yes. All scenarios that allocate rate protection to secondary sales include both the non-Slice and Slice share of secondary sales.
- The Rate Protection Energy Allocation Factor used for distributing Rate Protection includes all Secondary Inventory (pre-slice) and Firm Surplus Inventory. This is traceable by looking at the following tabs in the RAM2022 REP model:
  - ProgAlloc—row 19 and 20 report total Secondary and Firm Surplus loads which are used in determining the Rate Protection EAF for Secondary Sales reported on row 93
  - 7b2 Allocation— the Rate Protection EAFs are then used in rows 20-23 to allocate rate protection, row 23 reflects the FPS/Secondary Sales EAF.
  - Secondary – row 31 reflects the allocation of rate protection as a reduction to the Net Secondary Revenue Credit reported on row 33.

Questions Submitted and BPA Responses

How do Tier 2 costs play into REP benefits calculation?

- All purchased power costs are included in the calculation of BPA's PF rate used for calculating the amount of REP benefits. This means any costs BPA incurred to meet load obligations served at a Tier 2 rate are included. Rate design, tiered or otherwise, has no impact on REP benefits as it is applied after exchange benefits are determined.

Questions Submitted and BPA Responses

Will BPA provide estimates of loads and costs for the period of a potential REP settlement, FY 2029 to FY 2045?

- BPA is planning to bring forward several approaches to settlement. One of those approaches would be to use a method similar to the method used to reach the REP-12 Settlement Agreement. If BPA and stakeholders decide that's a viable path, we plan to provide analysis that would support a settlement of the entire Provider of Choice contract period. Presuming we go down that path, that analysis would be shared publically sometime in early calendar year 2024.

Questions Submitted and BPA Responses

Will BPA consider a settlement [contract] of 5 or 10 years, or any shorter term than the post-2028 Power contracts?

- Yes. However, the tradeoffs of a shorter settlement would need to be considered. Contract terms will be negotiated in the sub-phase 2 process kicking off late 2023/early 2024.

What legal interpretation(s) will BPA use for the post-2028 REP? Will BPA stay within the confines of those interpretations?

- BPA has not determine which interpretations of section 7(b)(2) it will use nor whether it will retain any of its prior interpretations or methodologies for the post-2028 period. Section 11.3 of the 2012 REP Settlement requires BPA to conduct a proceeding prior to FY 2029, in which BPA will issue a decision to determine whether, and if so, how, to "modify or replace its legal interpretation of, and methodology for implementing, sections 7(b)(2) and 7(b)(3)" of the Northwest Power Act. For purpose of the settlement analysis, BPA has developed the "reference case" from the positions BPA adopted in the 2008 7(b)(2) Legal Interpretation and 2008 7(b)(2) Implementation Methodology. Both were withdrawn by BPA when the 2012 REP Settlement was adopted. See Residential Exchange Program Settlement Agreement Proceeding, Administrator's Record of Decision, REP-12-A-02, at Section 8.1, July 2011.

BPA's Clarifying Questions on Feedback Submitted

POST 2028 REP

BPA Requests Clarification on IOUs' Feedback

BPA staff seeks clarification on the 7(b)(2) interpretations, to be reflected in the scenario modeling, included in IOU comments submitted February 14, 2023

(iv) Including All Acquired Conservation in the Resource Stack. If BPA includes PF Preference customer conservation load reduction in the resource stack--which it should not--then BPA should (a) include all conservation acquisitions because these conservation resources meet the 7(b)(2)(D) definition of a "resource," see 16 U.S.C. § 839a(19), and (b) adjust 7(b)(2) customer loads for the full amount of the conservation resource acquisitions.

BPA seeks to understand which conservation acquisitions the IOUs perceive as missing.

(v) Reserve Benefits from Surplus Power Sales. BPA's surplus power provides reserve benefits that protect PF Preference customer loads. BPA's sales of surplus power are made under the Northwest Power Act (see, e.g., 16 U.S.C. §839c(f)), and the reserve benefits of such sales must be assumed to not be achieved in the 7(b)(2) Case and, therefore, must be added to the 7(b)(2) Case costs. see 16 U.S.C. § 839e(b)(2)(E)(ii).

BPA seeks clarification on what is meant by "reserve benefits".

(vii) Costs of Uncontrollable Events. BPA should subtract the costs of uncontrollable events from the Program Case costs and include the costs of uncontrollable events in the 7(b)(2) Case costs. If BPA properly includes the costs of uncontrollable events in the 7(b)(2) Case costs, it is particularly important that the costs of uncontrollable events be properly determined for the purpose of such inclusion. see 16 U.S.C § 839e(b)(2) and see 16 U.S.C § 839e(g).

BPA seeks clarification on what the IOUs define as uncontrollable events and the specific ones missing from the rate test.

BPA Requests Clarification on WPAG's Feedback

BPA staff seeks clarification on the 7(b)(2) interpretations, to be reflected in the scenario modeling, included in WPAG's comments submitted to BPA on February 6, 2023.

- WPAG recommends changing the Discount Rate scenarios; specifically changing the use of the inflation rate to a high rate and the Discount Rate using the Investment Rate to a low rate

  BPA seeks to understand what rate or source of rate WPAG is proposing to use for the high and low discount rate scenarios for FY 2024 and FY 2034 in lieu of the inflation rate and BPA investment rate currently included in the discount rate scenarios.

Feedback Submitted to BPA

- Participants in the process can view the feedback and questions submitted by parties between January 24th and February 14th online at REP Post-2028 - Bonneville Power Administration (bpa.gov)
- Feedback and Questions submitted by:
  - The Western Public Agencies Group (WPAG)
  - Pacific Northwest Investor Owned Utilities
  - PNGC
  - Seattle City Light

What We've Heard and the Path Forward

POST 2028 REP

What We've Heard

- Feedback on Sub-phase 2 Scenario's indicate a desire to include some sensitivity scenarios; specifically Market Prices and remove some methodology based scenarios that are unlikely to materialize such as the removal of the discount rate in the Rate Test and using a single repayment study.
- Participants acknowledged that the scenarios and analysis must comport with the statutory requirements of the NW Power Act, and should reflect alternative 7(b)(2) interpretations. Some major themes are treatment of conservation in 7(b)(2) Case Loads and in the 7(b)(2) Resource Stack, application of the discount rate, allocation of rate protection, and treatment of Mid-C projects in the 7(b)(2) Resource Stack.
- Participants are showing interest in BPA preparing a long-term forecast similar to the 2012 REP Settlement approach but have also expressed concerns about modeling assumptions and forecast quality looking out to 2045.
- Participants expressed interest in understanding how settlement discussions will be structured during this public process, if BPA has some initial leanings and whether the path forward looks similar or different from the 2012 REP Settlement structure. An equal level of interest was shown in understanding what it looks like without an REP Settlement.

The Path Forward

- In light of this feedback, BPA will evaluate the additional scenario requests and feedback for Sub-phase 2 and confirm the list and strategy prior to Sub-phase 1 concluding April 2023.
- In regards to long-term forecasting and replication of the REP-12 Structure, BPA is not set on a specific settlement structure and open to suggestions on structuring a post-2028 REP settlement agreement.
- BPA is in the early stages of exploring potential REP implementation options. One option is to replicate the 2012 REP Settlement, as REP-12 has proven to be a legally sustainable settlement framework. Alternatively, parties could explore settlement on the 7(b)(2) Rate Test legal interpretation and implementation methodology for computing REP benefits which would allow those values to be computed each Rate Period.
- Lastly, BPA would like to educate and explore the relationship of the REP on BPA's 7(f) rates (*e.g.*, New Resources). This relationship, combined with other industry changes, may provide an opportunity where an across-the-board waiving of the REP could produce the most favorable outcome for all stakeholders.
- As we move towards Sub-phase 2, participants are encouraged to share their feedback and ideas on what a future settlement structure could look like.

The 2012 REP Settlement

- As we look towards evaluating different avenues to implementing the REP post-2028, it is important to recognize the conditions leading to REP-12 and what benefits apart from financial were derived.
- Preceding REP-12, implementation of the REP was under continuous litigation.
- Ultimately, for REP-12, BPA, IOUs and Publics customers crafted settlement terms, and IOUs and Publics reached resolution on a Net Present Value for REP benefits over the contract term.
- The region achieved exchange costs stability in BPA's power rates, and resolved long-standing litigation and issues, including:
  - Overpayment of REP benefits to IOUs in preference rates (Refund Payments)
  - Deemer balances
  - In-lieu provision

Settlement vs Non-Settlement World

Settlement*	Non-Settlement
Provides long-term certainty associated with costs and REP benefits.	Costs and benefits will change each rate period; creating less rate certainty and stability.
With regional alignment, settlement avoids costly litigation.	Litigation exposure over REP issues at each rate period increases until all issues have been settled through the courts.
REP benefits for each participating Investor Owned Utility is determined for each rate period, but does not exceed the settled IOU benefit stream.	REP benefits for each participant will be calculated for each rate period based on the current 7(b)(2) implementation methodology and legal interpretation.
The REP benefit stream is computed for a 16 year period; variability in forecasts and actuals is inherent and increases over time.	Forecasts will reflect the most current conditions; risk of variability against actuals is lower.

*Based on the 2012 REP Settlement Structure

BREAK

Deep Dive - Scenario Assumptions & Results

POST 2028 REP

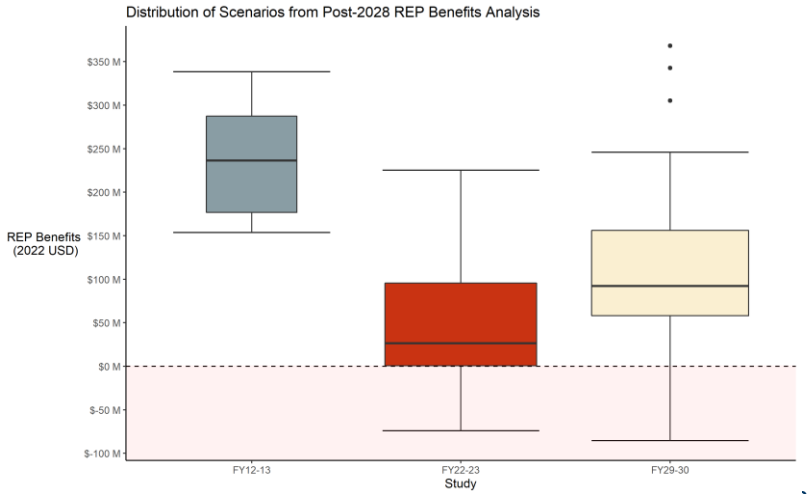
Scenario Assumptions

- All scenario analyses use the FY 2022-23 and FY 2029-30 reference case as a foundation.
  - For additional details regarding modeling assumptions and methodology for the Reference Case see the Appendix.
- Scenario results are reported independently without compounding variations.
  - Furthermore, the degree of interdependencies associated with the modeling of each scenario is limited. For instance, the high market price scenario is only picked up in the Net Secondary and Firm Surplus Revenue forecast and is not reflected in other inputs such as ASCs.
- Each individual scenario isolates a specific element that influences REP benefits; some elements can have a significant impact on REP benefits, whereas others are smaller.
- Scenario results are provided to aid in participants' understanding of how each component influences REP benefits; they're not intended for positional discussions during the current Sub-Phase 1 process.
- REP benefit analysis will be refreshed for Sub-Phase 2 and will reflect the BP-24 Final Proposal along with refreshed long-term projections through 2034.

Scenario Assumptions

- Scenario #2 reflects a change in the Average System Cost (ASC) methodology.
- Scenarios #3-12 are based on changes to the 7(b)(2) rate test implementation methodology and largely reflect the scenarios that were evaluated in the 2012 REP Settlement Process.
- Scenarios #15-29 reflect various forecast sensitivities.
- Scenarios produce a range of benefits as shown in the graphic below.

SCENARIO LIST			
1	Reference Case	15	ASCS - HIGH
2	No TS in ASCs	16	ASCs - Average of High/Low (V1)
3	Conservation = Gen Requirement w/out costs	17	ASCs - Average of FY22-25, Hist. Growth (V2)
4	Conservation = Gen Requirement with costs	18	ASCs - Double
5	Conservation Res. Expensed 1st Year	19	ASCs – Test Period Equal to Rate Period ASCs
6	Mid-C in Stack	20	ASCs – Test Period decline 10% from Rate Period ASCs
7	Discount Rate - Not Applied	21	BPA Conservation - High (+50%)
8	Discount Rate = Inflation	22	BPA Conservation - Low (-50%)
9	Discount Rate = Investment Rate	23	Loads - PF Decrease (-1000aMW)
10	Identical Secondary Credit	24	Loads - PF Rise (+1000aMW)
11	No 7(b)(3) to Surplus	25	High Loads and High Resources
12	Single Repayment Study	26	Low Loads and Low Resources
13	In Lieu - Regular	27	Market Prices - High
14	In Lieu - Green	28	Market Prices - Low
		29	Cost Increase ($100 million)



Scenario #2 – No Transmission Cost in ASCs/PFx

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
2	No Transmission Costs in ASCs/PFx Rate	N/A	$24.4	$68.8

- This scenario assumes changes to the 2008 ASC methodology (ASCM) by removing transmission cost from ASCs and the transmission adder included in the PF Exchange Rate (PFx).
- The PFx Rate includes a transmission adder based on BPA's Transmission rates. Generally, the cost of transmission included in ASCs exceeds the cost included in the PFx Rate.
  - The BPA PFx Transmission Adder for FY 2022-23 is $5.55/MWh.
  - Transmission included in ASCs for FY 2022-23 average $8.59/MWh
  - For additional details on how much transmission cost is included in ASCs see the posted follow up showing ASCs with and without it.
- When the transmission costs are removed from both the ASCs and the PFx rate; REP benefits decrease when compared to the Reference Case with removal of the cost discrepancy.

Scenario #3 – No Conservation

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
3	Conservation = General Requirements w/out Costs	$187.9	$(28.5)	$5.6

- Under the 2008 7(b)(2) Implementation Methodology and Legal Interpretation, which the Reference Cases uses, conservation resources are included in the resource stack and used to serve 7(b)(2) case loads as a Type 1 resource.
  - As a result, the 7(b)(2) Case increases loads by an amount equal to Conservation Resources included in the Resource Stack. As Conservation Resources are called upon from the Resource Stack the 7(b)() Case loads decrease and the associated cost is added.
- This scenario assumes Conservation is not available in the Resource Stack and as a result, 7(b)(2) case loads are not adjusted upwards. The Program Case and 7(b)(2) Case loads are the same.
- This produces lower Net REP benefits because it lowers the 7(b)(2) load obligation without incurring any additional costs which reduces the 7(b)(2) Case Rate in comparison to the Program Case Rate.

Scenario #4 – Total Conservation Costs Included

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
4	Conservation = General Requirements with Costs	$285.5	$110.6	$163.2

- This scenario is similar to Scenario 3 except the total cost of conservation that was removed from the Program Case is added to the 7(b)(2) Case which averages $179 million annually in FY 2022-34.
- Similar to Scenario #3
  - Conservation is not available in the Resource Stack.
  - The Program Case and 7(b)(2) Case loads are the same.
- This scenario produces higher Net REP benefits compared to the Reference Case because it increases fixed costs for Conservation which is spread across the smaller 7(b)(2) load obligation.

Scenario #5 – Conservation Resource Expensed Year 1

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
5	Conservation Resources Expensed Year 1	$369.8	$71.5	$114.5

- This scenario is similar to the Reference Case; however, Conservation Resources that are called from the Resource Stack are expensed in the first year instead of being spread across 5 years.
- As a result, the cost of any Conservation Resources called from the Resource Stack to meet 7(b)(2) Case loads increases which puts upward pressure on the 7(b)(2) Case Rate.
- Ultimately this scenario produces higher Net REP benefits compared to the Reference Case because the higher costs drive up the 7(b)(2) Rate.

Scenario #6 – Mid-C Resources included in Stack

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
6	Mid-C Resources included in the Resource Stack	$190.4	$(22.1)	$17.7

- This scenarios assumes that additional Type 2 resources are included in the Resource Stack. Type 2 Resources are defined as existing 7(b)(2) Customer resources not committed to regional load by preference customers or IOUs.
  - Specific resources included in this scenario include: hydro projects (Rock Reach, Priest Rapids, Rock Island), wind projects (Stateline, Harvest, Nine Canyon, Wheat Field, Hay Canyon and White Creek) and Fredrickson Combined Cycle Gas Plant.
- Type 2 resources are typically lower cost than Conservation, as a result they're called upon first to meet the 7(b)(2) Case loads. Lower resource costs spread across 7(b)(2) case loads coupled with fewer Conservation resources being called upon lowers the 7(b)(2) Rate. This results in lower Net REP benefits compared to the Reference Case.

Scenario #7-9 – Discount Rate Scenarios

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
7	Discount Rate – Not Applied	n/a	$(74.2)	$(72.4)
8	Discount Rate – BPA forecast Rate of Inflation	$192.9	$(35.5)	$(18.9)
9	Discount Rate – BPA's risk adjusted Discount Rate	$406.3	$130.9	$173.3

- The 7(b)(2) Rate Test considers the time value of money. As a result, the Program Case and 7(b)(2) Rate are discounted back to the beginning of the Rate Period. The Reference Case assumes BPA's 30 Year Agency Borrowing Rate is used.
- These scenarios assume different discount rates are used. All else equal, the larger the discount rate the greater the Net REP benefits and vice versa.
  - For additional details on the discount rates used see the posted follow up.

Scenario #10 – Identical Secondary Credit

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
10	Identical Secondary Credit	$413.8	$225.0	$290.4

- Section 7(b)(3) of the Northwest Power Act directs the allocation of rate protection to **all other non-PF power sold** as a supplemental rate charge. The 7(b)(2) Rate Test reflects this in the Reference Case methodology by allocating rate protection to Surplus Firm/Secondary loads which impacts the Net Secondary Revenue Credit used in the PF and Program Case Rate calculation. The 7(b)(2) Case assumes the Net Secondary Revenue without any rate protection.
- This scenario assumes that the 7(b)(2) Case Net Secondary Revenue credit would include the rate protection allocation and match the Net Secondary Revenue credit used in the Program Case Rate.
- Ultimately this scenario produces higher Net REP benefits compared to the Reference Case because the reduction in the Net Secondary Revenue Credit drives up the 7(b)(2) Case rate.

Scenario #11 – No 7(b)(3) to Surplus/Secondary Loads

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
11	No 7(b)(3) Protection to Surplus/Secondary Loads	$285.7	$12.9	$55.4

- This scenario assumes that the allocation of rate protection to **all other non-PF power sold** as a supplemental rate charge does not include Surplus Firm/Secondary Loads.
- This means that rate protection is spread across the remaining load pools: PF Exchange Loads, Industrial Firm Loads (IP) and New Resource Loads (NR). With few to no IP and NR loads this assigns most the Rate Protection to the PF Exchange Loads which increases the supplemental rate charge applied to the PFx rate.
- The higher PFx Rate compared to the ASCs lowers Net REP benefits compared to the Reference Case.

Scenario #12 – Single Repayment Study

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
12	Single Repayment Study	$292.5	$17.1	$89.0

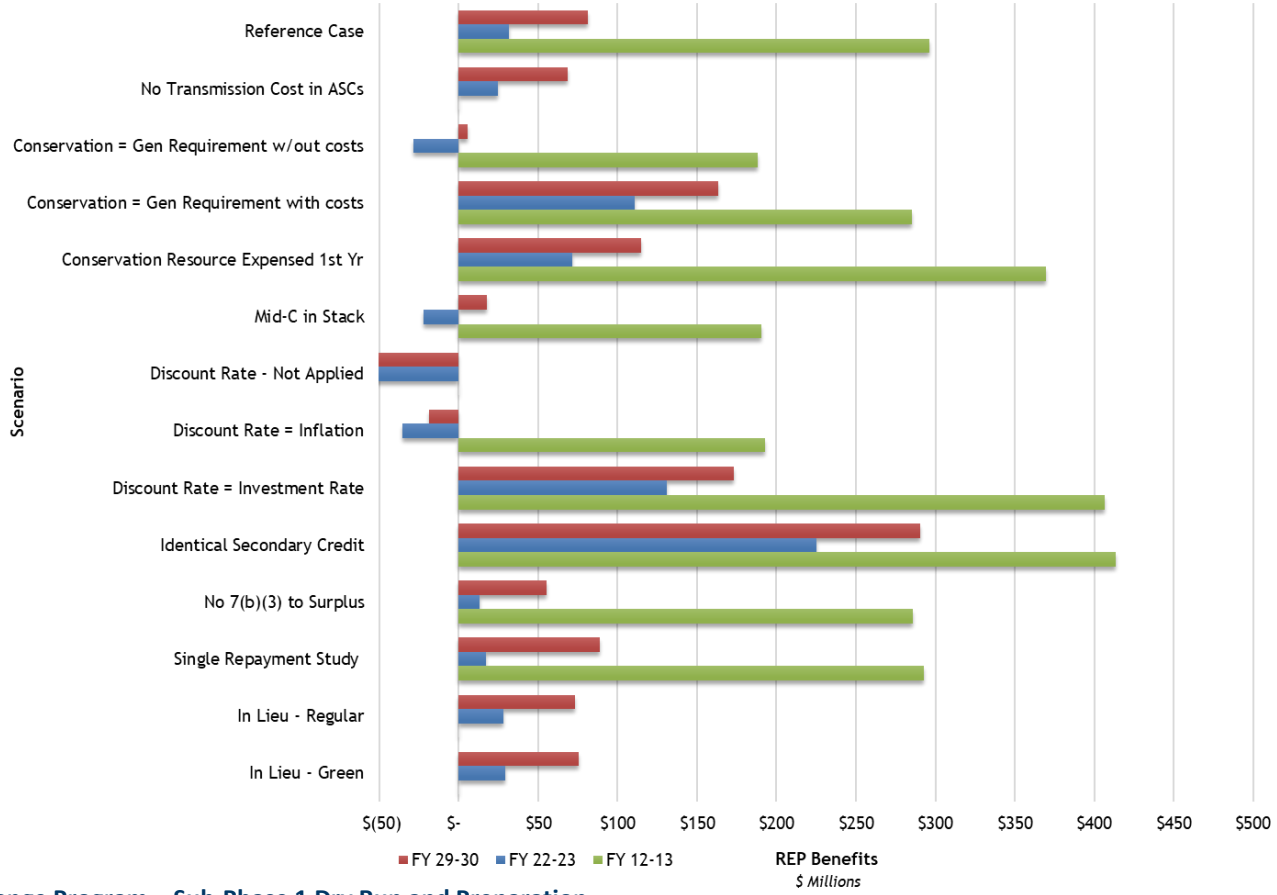
- In the Reference Case, the Revenue Requirement includes two repayment studies, one study removes all capital related costs associated with Conservation and acquisition of new resources for use in the 7(b)(2) Case. Removing certain debt obligations from the repayment stream results in the Repayment Model optimizing to the lowest possible debt repayment stream; this can lead to different capital related costs between the Program Case and 7(b)(2) Case. It's difficult to predict.
- In this scenario, no alternative 7(b)(2) Repayment Study is produced; instead the Program Case capital related cost stream are used in the 7(b)(2) Case.
- In the Phase 1 analysis, Net REP benefits are impacted differently. In the FY 2022-23 analysis benefits decrease and in FY 2029-30 benefits increase over Reference Case levels.

Scenario #13 & 14 – In Lieu

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
13	In Lieu – Regular	N/A	$28.4	$73.3
14	In Lieu – Green	N/A	$29.1	$75.2

- "In lieu" is based on section 5(c)(5) of the Northwest Power Act. Essentially in lieu of purchasing any amount of power offered by a utility, BPA may acquire an equivalent amount of power from other sources instead of exchanging, if the cost of such power is less than the utility's ASC.
  - This lower physical power cost would be included in ratemaking under section 7 of the NWPA in lieu of exchange purchases at the customers' ASCs.
- This scenario is performed outside of the 7(b)(2) Rate Test, it assumes 500aMW of Exchange Load is met with a market purchase.
- Net REP benefits are slightly lower than the Reference Case reflecting minor cost savings between market purchases and the Exchanging ASC.

Scenario Results – Methodologies



Scenario #15, 16 & 17 – ASC Sensitivities

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
15	ASC's - High	N/A	$(21.2)	$35.2
16	ASC's – Average of High & Reference Case (low)	N/A	$5.6	$48.6
17	ASC's – Average of FY22-25, Historical Grown FY26+	N/A	$18.5	$85.2

- Phase 1 analysis evaluates three sensitivities to ASCs.
  - The Reference Case assumes BP-22 ASCs are escalated at the 10 year historical growth rate of all participating exchange utilities which equates to 2.04% annually.
  - Scenario 15 represents high ASCs which are informed by IOU's Integrated Resource Plans. FY22-23 assumes 11.8% avg growth rate in ASCs from the rate period to the test period/ FY29-30 results assume 8.9% avg ASC growth rate from the rate period to test period.
  - Scenario 16 represents a combination of Scenario 15 and the reference case ASCs. FY22-23 assumes 9% avg growth rate in ASCs from the rate period to the test period / FY29-30 results assume 7.5% avg ASC growth rate from the rate period to test period.
  - Scenario 17 assumes an average growth rate for FY22-25 and then applies the historical growth rate of 2.04% beyond FY 2026. FY22-23 assumes 7.1% avg growth rate in ASCs from the rate period to the test period / FY29-30 results assume 6.2% avg ASC growth rate from the rate period to test period.

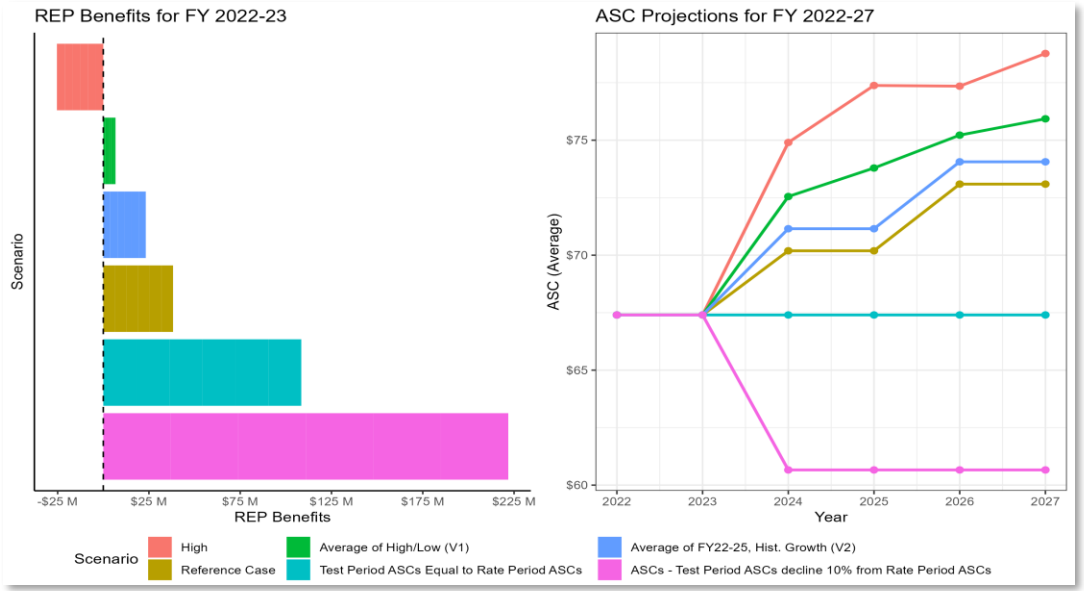
Scenario #18, 19 & 20 – ASC Shaping Implications

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
18	ASC's – Double	N/A	$189	$312.1
19	ASC's – Test Period Equal to Rate Period ASCs	N/A	$90.4	$148.7
20	ASC's – Test Period Declines 10% from Rate Period	N/A	$184.9	$258.6

- Phase 1 analysis also provides scenario results demonstrating how variations in the ASCs between the rate period and the test period can impact REP Benefits.
  - These three scenarios are intended to be educational in nature.
  - Scenario 18 doubles ASCs but does not make any changes to other modeling inputs like BPA's costs or market prices.

Scenario #15-20 – ASC Sensitivities and Shaping

- **The major takeaway is that <u>ASC's can have a significant impact on REP benefits</u>.**
- Net REP benefits are determined by comparing the rate period ASCs to the PFx Rate.
  - The PFx rate includes a charge for Rate Protection.
  - Rate Protection is determined by the 7(b)(2) Rate Test which evaluates a 6 year period.
    - The Rate Period- 2 years, and the Test Period- 4 years.
    - ASCs in the test period impact the cost of Exchange Resources included in the Program Case.
    - All else equal, a larger growth rate between the rate period and test period ASCs will produce greater rate protection which leads to lower Net REP Benefits.
  - The graphic to the right portrays how different ASC growth patterns impact Net REP Benefits for FY 2022-23.



Scenario #21 & 22 – Conservation Savings & Costs

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
21	BPA Conservation – High (+50%)	N/A	$54	$101.5
22	BPA Conservation – Low (-50%)	N/A	$8.3	$58.2

- Conservation Energy Savings and Costs are included in the calculation of the PF rate which is an input to the Program Case Rate. The 7(b)(2) Case uses Conservation as an available resource to call upon from the Resource Stack to meet 7(b)(2) Case loads and picks up the associated costs.
  - As a result, Net REP Benefits are sensitive to the level of Conservation Savings and Costs.
- Scenarios 21 and 22 evaluate increasing or decreasing forecast Conservation by 50%.
  - This change is isolated to the forecast costs used in the PF rate and the amount/cost available in the 7(b)(2) Case.
  - Forecast PF loads are not adjusted for any increase or decrease in Conservation savings.
- Net REP benefits either increase or decrease from the Reference Case. This is primarily driven by changing the 7(b)(2) case load obligation and the amount of Conservation called upon.

Scenario #23 & 24 – Loads

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
23	BPA PF Loads Decrease (-1000 aMW)	N/A	$(28.9)	$0.3
24	BPA PF Loads Increase (+1000 aMW)	N/A	$122.7	$171.9

- PF loads impact both the Program Case and the 7(b)(2) Case in the Rate Test.
- These scenarios assume that block loads are increased or decreased by 1,000 aMW per year. All else equal, higher loads will result in Augmentation Purchases to meet the firm obligation and fewer loads will result in higher Firm Surplus to sell on the market.
  - Net Secondary inventory changes are not evaluated; only Firm Surplus inventory is adjusted. The change in loads does not reflect implications to market conditions/prices, nor does it alter ASC loads.
  - The cost of augmentation purchases are based on Aurora's Critical Market Price and the selling price of Firm Surplus is based on ICE Forward Prices using the BP-22 methodology.
- Fewer PF Loads decrease revenues and puts upward pressure on the PF and Program Case Rate; whereas the 7(b)(2) Case rate decreases from a smaller load obligation and lower resource costs. This increases rate protection and lowers Net REP Benefits compared to the Reference Case. The inverse occurs when PF loads are increased.

Scenario #25 & 26 – Loads & Resources

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
25	BPA PF Loads & FBS Resources Decrease (-1000 aMW)	N/A	$72.8	$132.5
26	BPA PF Loads & FBS Resources Increase (+1000 aMW)	N/A	$(14.6)	$21.9

- Similar to Scenario's 23 & 24 changes in PF loads and FBS resources impact both the Program Case and the 7(b)(2) Case in the Rate Test.
- These scenarios incorporate the load scenarios but assume an equivalent increase or decrease in FBS resources.
  - FBS resource costs are not changed in either scenario.
  - Net Secondary inventory changes are not evaluated; only Firm Surplus inventory is adjusted. The assumption does not reflect implications to market conditions/prices, nor does it alter ASC loads.
- In these scenarios the cost implication of adjusting resources is not reflected; therefore, a rise in PF loads drives up revenues without cost which drives down the Program Case rate; the 7(b)(2) rate also decreases but at a slightly higher rate. The trigger value is multiplied by the higher PF loads producing greater rate protection and lowers Net REP Benefits compared to the Reference Case. The inverse occurs when PF Loads and FBS Resources decrease.

Scenario #27 & 28 – Market Prices

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
27	Market Prices - High	N/A	N/A	$114.3
26	Market Prices – Low	N/A	N/A	$49.5

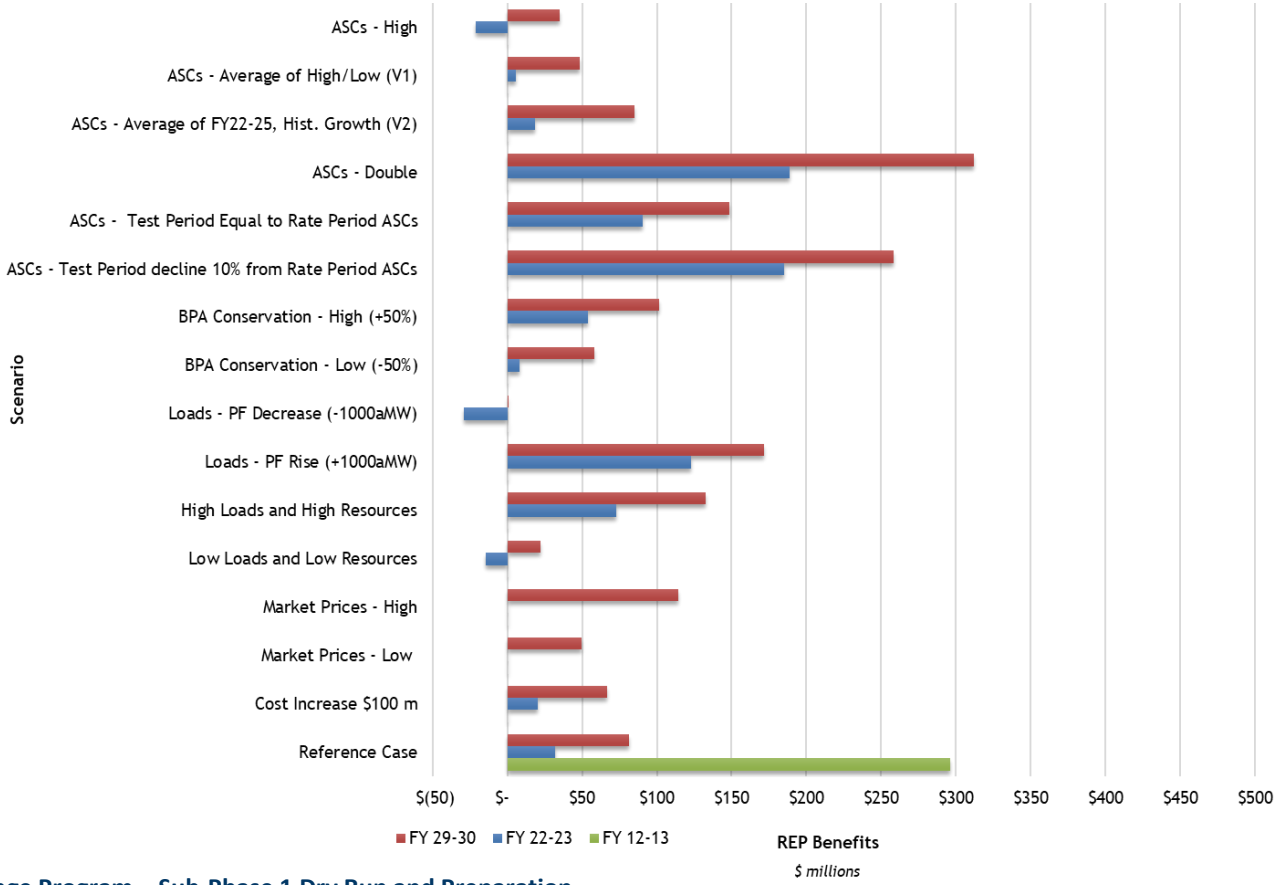
- Market Price scenarios assess how sensitive results are to market price assumptions, the low and high market price distributions were derived by selecting prices one standard deviation above and below the average annual prices. The resulting price distribution were applied to inventory levels to calculate NSR values for each market price scenario.
  - Other modeling components impacted by Market Prices such as ASCs, Gen Inputs, Demand Rates, etc. were not adjusted; this scenario adjusted Net Secondary Revenue (NSR) including Firm Surplus revenues only. This analysis was only performed for FY 2029-30.
- Two things happen in the market price scenarios:
  - Higher market prices lead to a greater NSR Credit which puts downward pressure on the PF, Program Case and 7(b)(2) Case rates. The 7(b)(2) Case rate decreases slightly more than the Program Case rate because it reflects the full NSR credit without rate protection. This increases rate protection.
  - The higher NSR credit lowers the PF rate which the base PFx rate is based on plus the 7(b)(3) Surcharge. The base PFx rate decreases more than the rate protection surcharge which widens the gap between ASCs and the PFx rate; producing higher Net REP Benefits compared to the Reference Case. The inverse is true when market prices are low.

Scenario #30 – Cost Increase

Scenario ($ millions)		FY 2012-13	FY 2022-23	FY 2029-30
1	Reference Case	$296.3	$31.8	$81.3
30	Cost Increase $100 million	N/A	$20.4	$67.0

- The Cost scenario adds $100 million in O&M expense in FY 2022 allocated to FBS (85%), Conservation (10%), Business Support (5%). Beyond FY 2022, the $100 million is escalated at BPA's rate of inflation until FY 2034.
  - No other modeling components were adjusted, for instance Generation Inputs.
- Two things happen when costs increase:
  - The higher cost increases the PF, Program Case and 7(b)(2) Case rates. The 7(b)(2) Case rate increases slightly more than the Program Case rate because the increased cost is spread over a smaller load base. As a result, rate protection decreases.
  - The higher cost increases the PF rate which the base PFx rate is based on plus the 7(b)(3) Surcharge. The base PFx rate increases more than the rate protection surcharge decreases which causes the gap between ASCs and the PFx rate to shrink. As a result Net REP Benefits decrease compared to the Reference Case when cost increase.

Scenario Results – Sensitivities

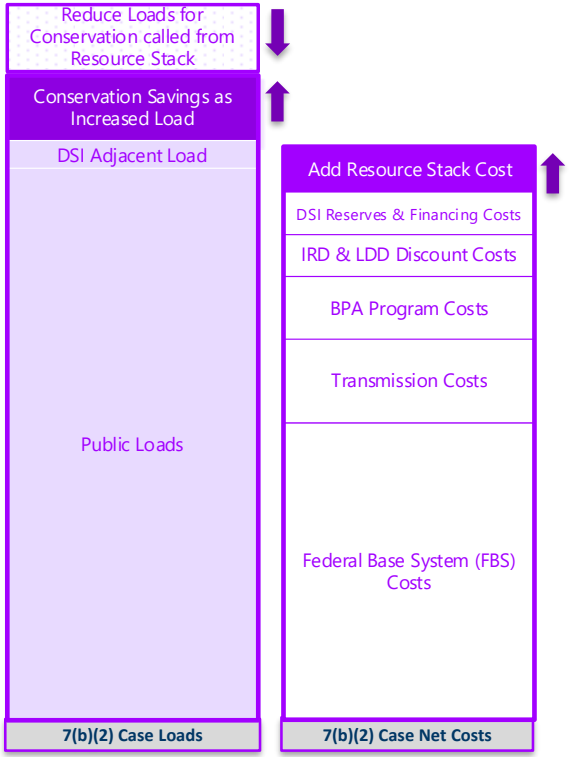


Recap - Conservation Treatment

Conservation Treatment: Reference Case

- Under the 2008 7(b)(2) Implementation Methodology and Legal Interpretation, which the Reference Cases uses, conservation resources are included in the resource stack and used to serve 7(b)(2) case loads as a Type 1 resource*.
- This follows the 2008 Legal Interpretation, which viewed conservation as a resource under section 7(b)(2)(D)(i).
- To remove the effects of conservation from the 7(b)(2) Case, the 7(b)(2) Customer loads are increased by an amount of load equal to the conservation resources included in the Resource Stack.
- As conservation resources are called upon from the Resource Stack the 7(b)(2) Case loads are decreased and the associated resource cost is added.
- This adjustment is the way conservation resources are given effect when selected from the Resource Stack under section 7(b)(2)(D)(i).

*Billing Credits are included in the 7(b)(2) Rate Test in the same manner as Conservation. See the posted billing credit follow up for more details.



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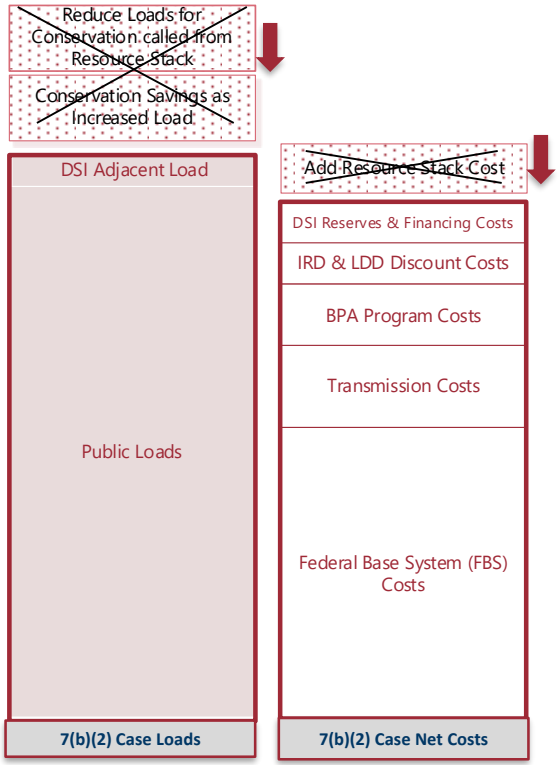
Conservation Treatment: Scenario 3 (No Conservation)

- In Scenario 3 - Conservation is treated similar to the Program Case.
  - Both Program Case and 7(b)(2) Case have the same loads; no adjustment is made in the 7(b)(2) Case for conservation.
  - Because conservation costs are removed from the Program Case and the 7(b)(2) Case as applicable 7(g) costs, conservation as a resource costs is not included in Resource Stack per 7(b)(2)(D).
  - No conservation related costs are included in the 7(b)(2) Case.
- This scenario produces lower Net REP benefits compared to the Reference Case because it lowers the 7(b)(2) load obligations without incurring any additional costs which reduces the 7(b)(2) Rate in comparison to the Program Case Rate.

	REP-Total	Program Case	7b2 Case	Trigger
1 FY 2022-23 Reference Case	$ 31,840	$ 42.25	$ 25.95	$16.30
3 Conservation = Program Case w/out Conservation Costs	$ (28,541)	$ 42.45	$ 24.84	$17.61
4 Conservation = Program Case with Conservation Costs	$110,649	$ 41.99	$ 27.40	$14.59
5 Conservation Resources in Resource Stack Expensed Year 1	$ 71,476	$ 42.12	$ 26.68	$15.44



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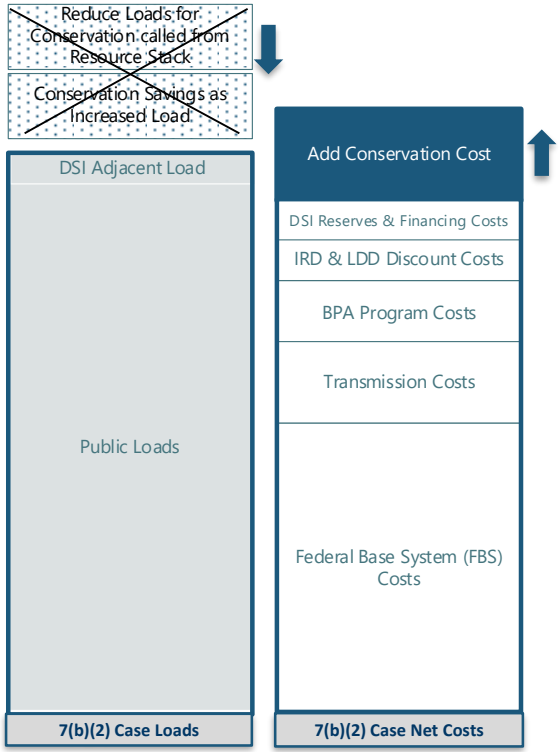
Conservation Treatment: Scenario 4 (Conservation Costs only)

- In Scenario 4 – Conservation is treated similar to Scenario 3 except the total cost of conservation that was removed from the Program Case is added to the 7(b)(2) Case.
  - The Program Case and 7(b)(2) Case loads are the same; no load adjustment is made for conservation.
  - The total amount of conservation costs removed from the Program Case are included in the 7(b)(2) Case.
  - Conservation is not included as a resource in the Resource Stack.
- This scenario produces higher Net REP benefits compared to the Reference Case because it increases fixed costs for conservation which is spread across the smaller 7(b)(2) load obligation.

	REP-Total	Program Case	7b2 Case	Trigger
1 FY 2022-23 Reference Case	$ 31,840	$ 42.25	$ 25.95	$ 16.30
3 Conservation = Program Case w/out Conservation Costs	$ (28,541)	$ 42.45	$ 24.84	$ 17.61
4 Conservation = Program Case with Conservation Costs	$ 110,649	$ 41.99	$ 27.40	$ 14.59
5 Conservation Resources in Resource Stack Expensed Year 1	$ 71,476	$ 42.12	$ 26.68	$ 15.44



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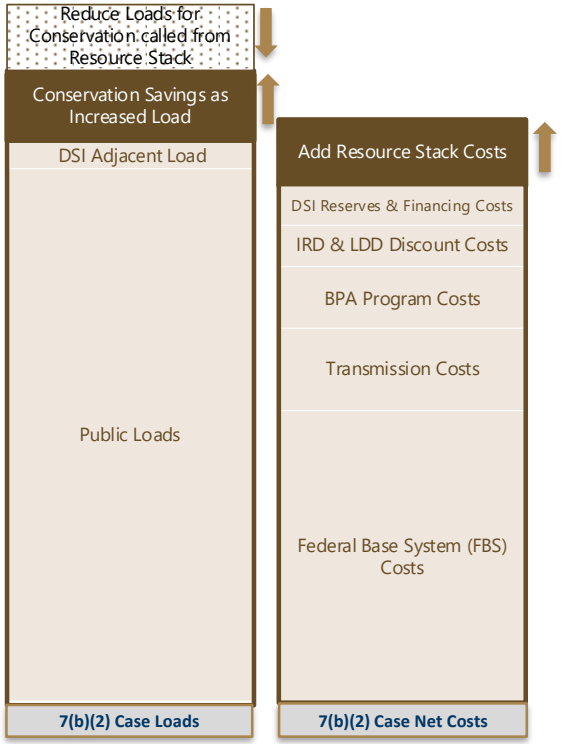
Conservation Treatment: Scenario 5

(Expensed portion of Conservation Resource is Recovered the First Year)

- In Scenario 5 – Conservation is treated similar to the Reference Case except the total cost of Conservation increases when called upon from the Resource Stack to reflect the cost being recovered over one year instead of five years.
  - 7(b)(2) loads are increased for Conservation savings.
  - Conservation Resources are included in the Resource Stack.
  - The expensed portion of conservation resource costs included in the Resource Stack are recovered over one year instead of five years.
- This scenario produces higher Net REP benefits compared to the Reference Case because it increases Resource Stack costs.

		REP-Total	Program Case	7b2 Case	Trigger
1	FY 2022-23 Reference Case	$ 31,840	$ 42.25	$ 25.95	$ 16.30
3	Conservation = Program Case w/out Conservation Costs	$ (28,541)	$ 42.45	$ 24.84	$ 17.61
4	Conservation = Program Case with Conservation Costs	$ 110,649	$ 41.99	$ 27.40	$ 14.59
5	Conservation Resources in Resource Stack Expensed Year 1	$ 71,476	$ 42.12	$ 26.68	$ 15.44



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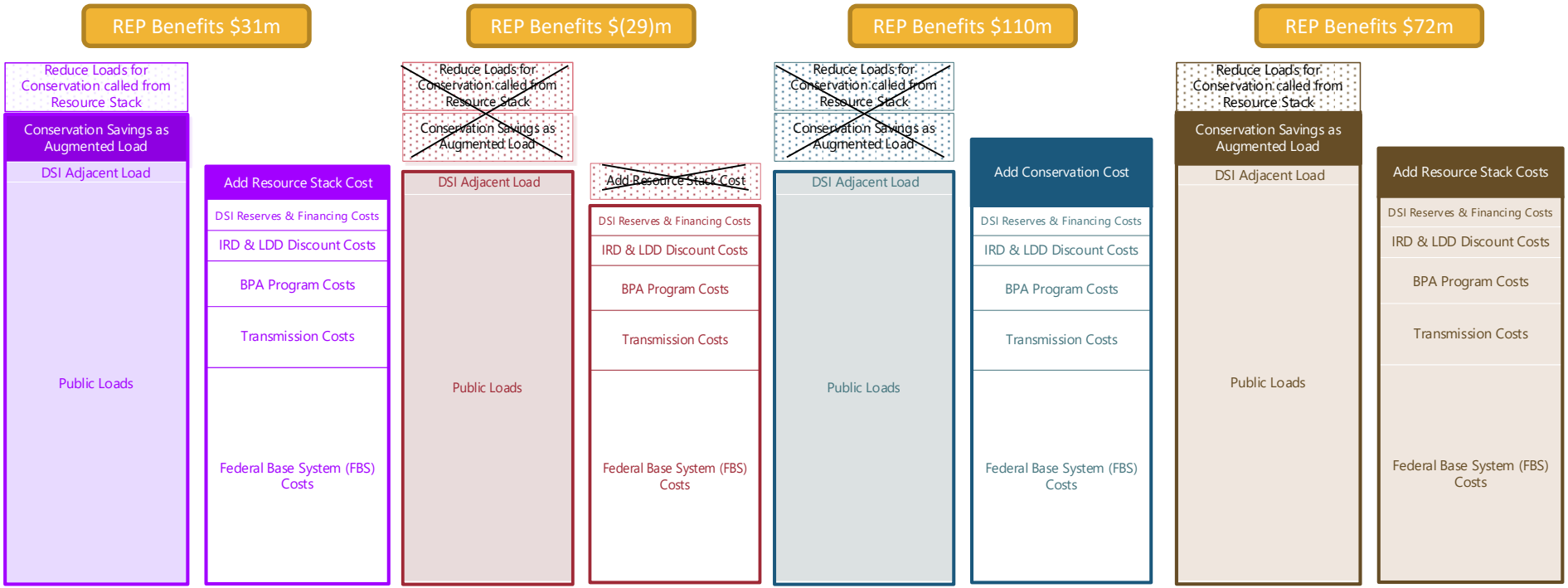
Conservation Treatment Scenarios



Reference Case
7(b)(2) Rate = $25.95

Scenario 3 – No Conservation
7(b)(2) Rate = $24.84

Scenario 4 – Conservation Costs Only
7(b)(2) Rate = $27.40

Scenario 5 – Conservation Resources Expensed First Year in Resource Stack
7(b)(2) Rate = $26.68

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Next Steps, Feedback and Questions

Thank You!

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POST 2028 REP

Appendix

Major Assumptions and Modeling

- Assumptions
  - All major forecast components reflect BP-22 Final Proposal for FY 2022-23 and updated projections for FY 2024-34.
  - Major forecast components include: Loads & Resources, Market Prices, Net Secondary Forecast, Costs and Revenue Credits, ASCs, Exchange Loads, Borrowing & Inflation Rates and the 7(b)(2) Resource Stack Costs.
- Modeling
  - Both FY 2022-23 and FY 2029-30 results use RAM operating in non-settlement mode.
    - RAM applies the same major methodology/modeling used in RAM2012 for the REP-12 Settlement Proceeding.
    - RAM has evolved since 2010 to reflect changes in rate design and rate calculations; however, the 7(b)(2) Rate Test and Resource Stack methodology/modeling remain consistent with RAM2012.

Reference Case Methodology

- The 7(b)(2) Rate Test modeling used in the Reference Case is consistent with BPA's position in the Reference Case used in the 2012 REP Proceeding.
  - This model uses BPA's 2008 Legal Interpretation of Section 7(b)(2) of the NW Power Act and BPA's Implementation Methodology used as part of the WP-07S Supplemental Rate Proceeding. Both publications were withdrawn by BPA as part of the 2012 REP Settlement.
- BPA is not taking a position on methodology or implementation on 7(b)(2) and determined it best to maintain consistency with the Reference Case from the 2012 REP discussions and proceeding for purposes of this analysis.
- Modeling adheres to Section 7(b)(2) which requires BPA to assume that the 7(b)(2) Case is identical to the Program Case except for those differences required by the Five Assumptions set out in section 7(b)(2) (A)-(E) discussed on slide 30.
- Assumptions used in the Reference Case are described in greater detail in Appendix A.

Section 7(b)(2) Methodology Terms

- **The Northwest Power Act does not require BPA to develop a methodology for the 7(b)(2) Rate Test.**
  - Nevertheless, BPA has developed a 7(b)(2) Methodology and Legal Interpretation to explain its implementation of the Rate Test. Most recent is the 2008 7(b)(2) Implementation Methodology, but it was withdrawn as part of the 2012 REP Settlement.
- **BPA's 2008 7(b)(2) Methodology uses certain terms to refer to ideas in the Rate Test.**
  - The "Program Case", is effectively rates set under the NWPA, but excludes certain 7(g) costs.
  - The "7(b)(2) Case", which is a set of "hypothetical" rates developed assuming certain provisions of the Northwest Power Act were not in effect (i.e. no REP, DSIs served by publics, FBS limited).
  - The Rate Test "Trigger" refers to the event when the Program Case rate is *higher* than the 7(b)(2) Case rate which causes rate protection to trigger.
  - "Rate Protection": The difference between the Program Case and 7(b)(2) Case rate multiplied by the PF public load to determine the amount of rate protection.
  - "Resource Stack": A hypothetical stack of resources that publics would have used to meet their remaining loads in the absence of the Northwest Power Act.
- **Section 7(b)(3) Allocation**
  - 7(b)(2) determines the amount of rate protection applicable to the PF rate.
  - 7(b)(3) says where to put the costs that 7(b)(2) says can't be collected in the PF rate. The rate protection is then allocated to all "other" non-PF rates.