Post 2028 Residential Exchange Program
January 23, 2024

9:00 am - Noon

Join the WebEx Meeting

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Agenda for January 23, 2024

Time	Topic	Presenter(s)
9:00 – 9:05	Opening and Introductions	Paulina Cornejo
9:05 – 9:30	IOUs and Publics Settlement Development Discussion	Various
9:30 – 10:15	REP Benefits Analysis	Stephanie Adams
10:15 – 10:30	*BREAK*	
10:30 – 11:45	Deep Dive into Scenarios	Stephanie Adams
11:45 – 11:55	Path Forward	Daniel Fisher
11:55 - Noon	Closing	Paulina Cornejo

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Recap: Post 2028 REP Process

- The initial REP public process concluded in September 2023; it was designed to educate participants and prepare for settlement negotiations.

- Feedback from Publics, IOUs and the Oregon commission suggested an REP settlement was unlikely at the time.

- BPA committed to sharing updated REP analysis in January of 2024 that reflects updates to major forecast components informed by the BP-24 Rate Case and includes additional scenarios requested by participants.

- BPA is also seeking feedback from stakeholders regarding their discussions and perspectives on development of an REP settlement at this workshop; time has been allotted on the agenda.

Settlement Discussion

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Presenter Line-up

- Investor Owned Utilities (as a group) – presenting General Settlement Principles

- Public Power Council (PPC) - leading oral discussions on Settlement process

- Alliance of Western Energy Consumers (AWEC) - leading oral discussions on Settlement process

Recap

Recap: Calculating REP Benefits

- **Pre 7(b)(2) REP benefits represent the level of benefits that would be in place if there were no 7(b)(2) rate protection for Preference Customers.**
  - **Pre 7(b)(2) benefits are driven by the interplay between the ASCs and the base PFx rate.**
  - **Numerous factors can influence ASCs and the base PFx rate.**
- **Post 7(b)(2) REP benefits represent the level of benefits after performing the Rate Test.**
  - **The Rate Test calculates the level of rate protection assigned to all other Power sold.**
  - **The PFx rate is allocated rate protection as a surcharge, this increases the rate and reduces the level of REP benefits.**
- **The Rate Test is affected by statutory interpretations which can dramatically change the level of REP Benefits.**

| Pre 7(b)(2) | 7(b)(2) Rate Test | Post 7(b)(2) |
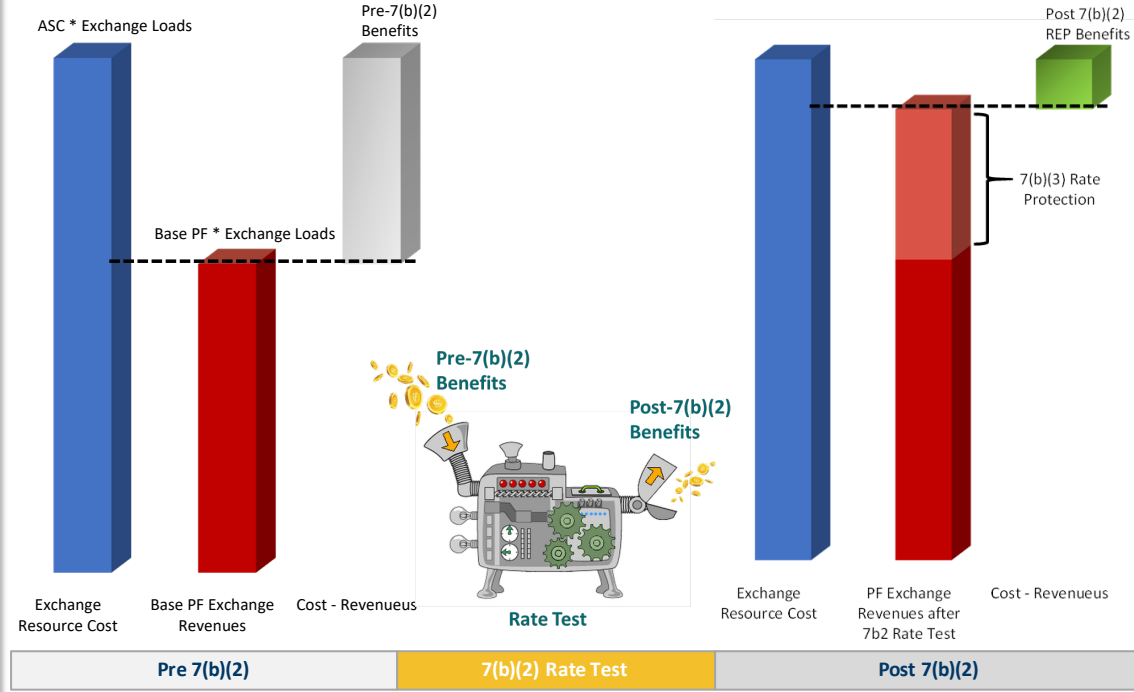
(Average System Cost − PF Exchange Rate) x Res&Farm Load = Post 7(b)(2) REP Benefits
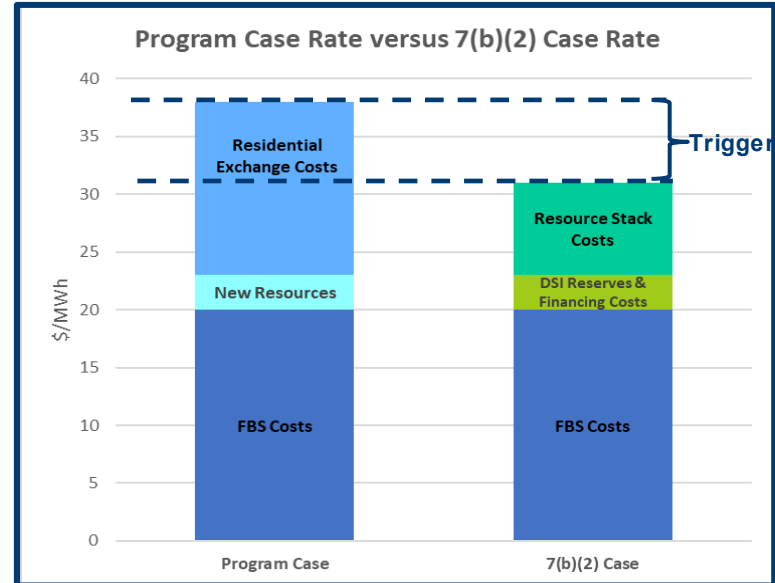
Recap: Section 7(b)(2) Methodology Terms

- **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.

Recap: 7(b)(2) Rate Test

- **The Rate Test can be considered as an ongoing cost/benefit analysis.**
  - It compares projected rates set to recover certain power costs included in the Northwest Power Act (Program Case) to a hypothetical rate set to recover power costs assuming certain features of the Act were not in place (7(b)(2) Case).
  - The Rate Test is intended "to assure that the financial benefits of the preference clause in the Bonneville Act will continue to accrue to BPA preference customers." Sen. Rep., Appendix B, at 61.

- **Functionally, the Rate Test limits the amount of REP costs that may be recovered in the PF rate.**
  - If the <u>Program Case rate</u> is higher than the <u>7(b)(2) Case rate</u>, then the Rate Test is said to "trigger" and the difference between the $/MWh is multiplied by PF customer load to establish a rate protection amount.
  - The rate protection amount is then allocated away from PF customer loads to all other power sold as a supplemental rate charge.

Program Case Rate versus 7(b)(2) Case Rate

Step 1	Exclude specific Section 7(g) Costs from Program Case	Conservation costs, experimental resource costs, billing credits costs, and "uncontrollable events" costs
Step 2	Run the five assumptions of the 7(b)(2) rate test (Hypothetical case)	(A) DSIs are served by their local utility instead of BPA (B) Federal base system resources are used for publics first (C) no REP purchases and sales (D) after the FBS is exhausted, other resources owned by publics are applied in least cost order (E) power reserve benefits and reduced financing costs available under the Act are not achieved, run both rates for a projected four years past the rate period and discount back to the rate period
Step 3	Compare the rates produced by Program Case with the 7(b)(2) Case	If Program Case rate is lower, do nothing; if 7(b)(2) Case rate is lower, rate test triggers. The $/MWh difference between the two rates is multiplied by the PF customer load to determine a rate protection amount.
Step 4	Allocate difference from Step 3 to other rates	The rate protection amount from Step 3 must be allocated to other non-PF power sold per 7(b)(3).

Recap: Reference Case Assumptions

- The **Test Period** evaluates the applicable rate case plus the ensuring four years.

- The Rate Test considers the time value of money across the test period; therefore, the two sets of rates are **discounted** back to the beginning of the first year of the rate case using BPA's 30 year Agency Borrowing Rate.

- **Conservation savings are removed from the 7(b)(2) Case loads** and becomes a callable Type 1 resource (see last bullet for types of resources) included in the 7(b)(2) Resource Stack. The removal of conservation results in 7(b)(2) Case loads increasing by an equivalent amount.

- **Rate protection is allocated to all other power sold** including secondary sales reflected in the FPS rate.

- The **Secondary Energy Credit** used in the Program Case includes the 7(b)(3) allocation of rate protection; whereas, the 7(b)(2) Case secondary credit does not.

- 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.

- If **FBS resources** are insufficient to meet 7(b)(2) Case loads then three types of **additional resources** can be added to serve those loads.
  - These additional resources are defined in section 7(b)(2)(D) and are: (1) actual and planned resource acquisitions by BPA from 7(b)(2) Customers consistent with the Program Case (Type 1); (2) existing 7(b)(2) Customer resources not currently committed to regional load by preference customers or IOUs (Type 2); and (3) all other needed resources, acquired at the average cost of actual and planned resource acquisitions by BPA from non-7(b)(2) Customers (Type 3).

Refreshed REP Benefits Analysis

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REP Analysis - Major Assumptions and Updates*

- **Assumptions**
  - All major forecast components reflect BP-24 Final Proposal for FY 2024-25 and updated projections are provided for FY 2026-34.
  - 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.
  - The RAM REP model is unchanged except for modifications to include additional scenarios requested from participants. Both the 2024-25 and 2029-30 RAM REP Models have been released publicly and can be accessed here

- **Notable Updates**
  - Loads and Resources reflect the shift to P10 critical year and 30-year average water consistent with the change made in BP-24.
  - IOU ASCs for FY 2026-34 are based on the updated Long-Term ASC model. The COU ASC's apply a growth rate informed by historical changes.*
  - Borrowing and Inflation Rates have been updated as of October 2023 and reflected in various inputs.*
  - The long-term Market Prices and Net Secondary Revenue forecast is consistent with the BP-24 vintage developed summer of 2022.*

REP Benefits FY 2022-23 to FY 2024-25: Major Drivers

Benefits <u>increased $125 million</u> from negative $17 million in 2022-23 to $108 million in 2024-25.

- **Loads and resources** increased due to shifting the critical water year from 1937 to P10. This increased the size of the FBS allowing for an increase in loads and high valued firm surplus energy. The accompanying revenue without any added costs lowers the PF rate and increases REP benefits.

- **Market prices** rose from 2022-23 levels leading to higher Firm Surplus and Net Secondary Revenues which lowers the PFx rate leading to greater REP benefits.

- **Exchange Inputs (ASCs)** increased based on updated IRPs, gas prices & inflation which produces higher REP benefits.

- The **discount rate** reflects BPA's higher 30-year borrowing rate which the Program Case rate benefits from, this reduces rate protection and increases REP benefits.

- The **resource stack** reflects lower conservation savings, this reduces the adjustment to 7(b)(2) Case loads which lowers the 7(b)(2) rate, increases rate protection and lowers REP benefits. *See slide 22 for more detail*

- The **revenue requirement** has higher costs; this drives up the PFx rate and reduces REP benefits.
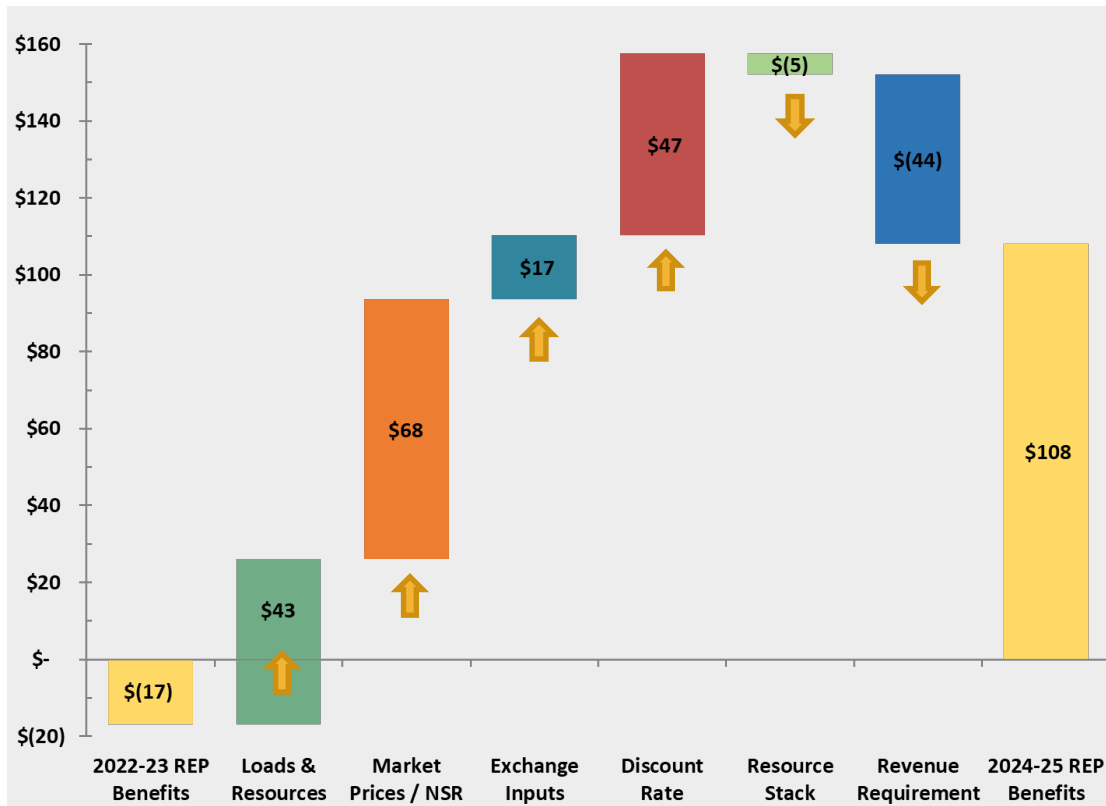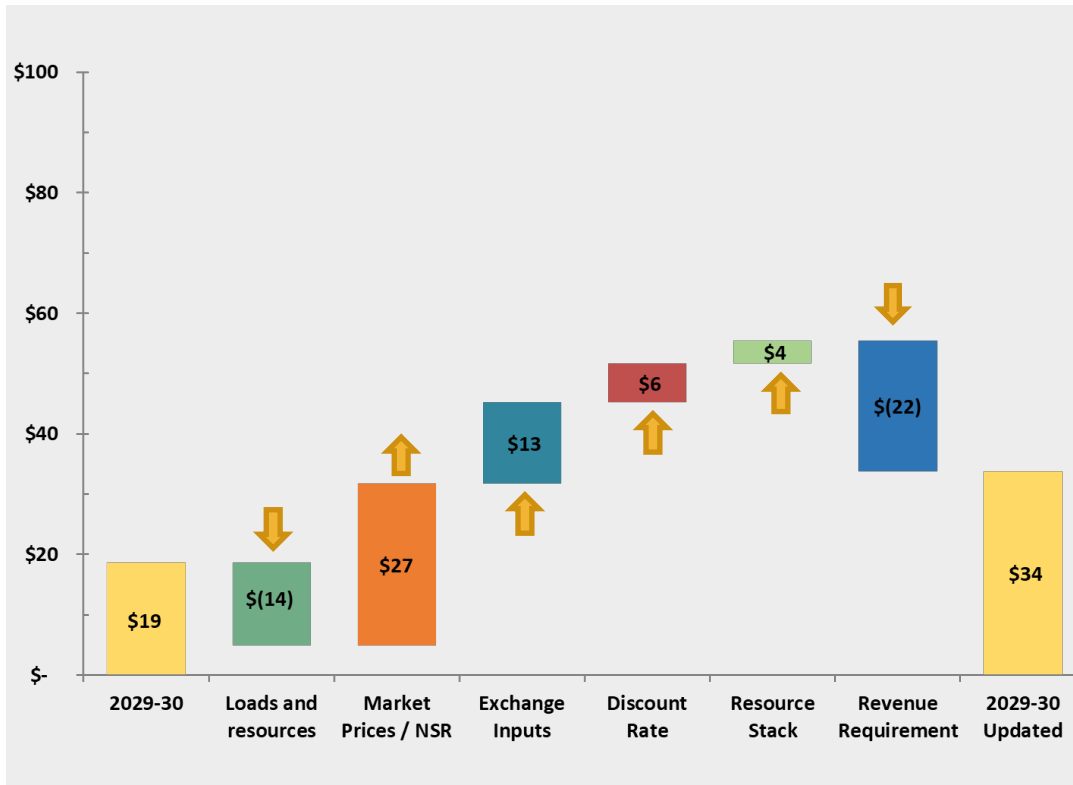

This crosswalks the 2022-23 to the 2024-25 Reference Case. It's intended to show how changes in major forecast components can influence REP benefits without settlement.

REP Benefits Refreshed FY 2029-30: Major Drivers

Benefits <u>increased $15 million</u> from $19 million to $34 million with refreshed inputs.

- **Loads and resources** increased due to the critical water year shift. However, unlike 2024-25 REP benefits decrease in 2029-30. This is due to slightly lower high valued firm surplus revenue as PF loads rise and an increase in rate protection. *More details on movement patterns between the PF rate and rate protection in the appendix.*

- **Market prices** increased producing greater Net Secondary and Firm Surplus Revenues which lowers the PF rate and increases REP benefits.

- **Exchange Inputs (ASCs)** increased based on updated Integrated Resource Plans, this increases REP benefits.

- The **discount rate** increased slightly, this causes a reduction in rate protection and increases REP benefits.

- The **resource stack** has higher costs leading to an increase in the 7(b)(2) Rate which lowers rate protection and increases REP benefits.

- The **revenue requirement** has higher costs; this drives up the PFx rate and reduces REP benefits.
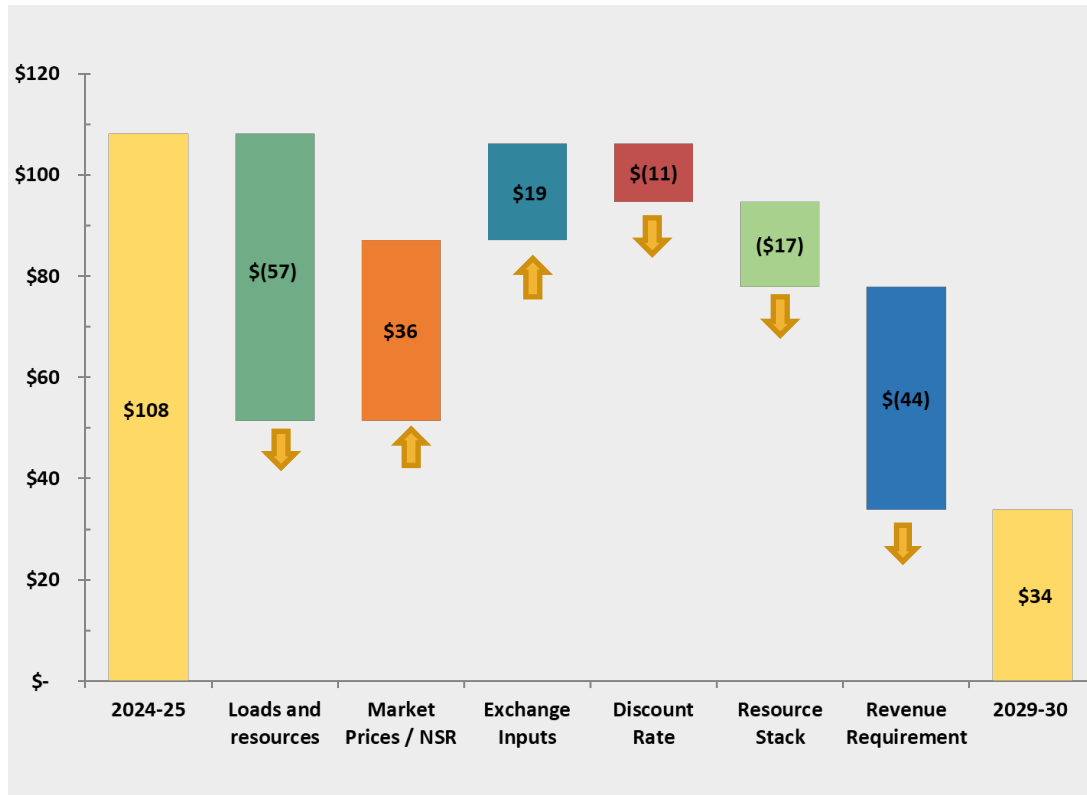

This slide crosswalks the refreshed 2029-30 REP Reference Case from 2022 results. It's intended to show how changes in major forecast components can influence REP benefits without settlement.

REP Benefits FY 2024-25 to 2029-30: Major Drivers

REP Benefits <u>decreased $74 million</u> from $108 million in the 2024-25 analysis to $34 million in 2029-30. The drivers behind the decrease are outlined below:

- **Loads and resources** change, PF loads increase by 280 aMW, and is met with firm surplus inventory. The decrease in high valued Firm Surplus ($76) vs an increase in PF loads at a lower rate ($35) diminishes revenues in 2029-30 which increases the PF rate and lowers REP benefits by $57 million.

- **Market Prices/Net Secondary Revenues** including the lower Firm Surplus increased 7% driven by higher prices; this lowers the PF rate and increases REP benefits.

- **Exchange Inputs (ASCs)** increased by 9% between time periods, this increases REP benefits.

- The **discount rate** is almost a quarter percent lower in 2029-30 which increases rate protection and reduces REP benefits.

- The **resource stack** reflects lower conservation savings of 151 aMW by the 29-30 period, this suppresses the 7(b)(2) rate, increases rate protection and lowers REP benefits.

- **The net Revenue requirement** used in the Rate Test is 15% higher in the 2029-30 analysis; this drives up the PFx rate and reduces REP benefits.

This slide crosswalks the refreshed results across time between the 2024-25 and the 2029-30 REP Reference Case results.

Major Take-Aways

- In the near-term REP benefits are higher and a refresh of the major components illustrates the variability that can materialize from rate period to rate period.

- In the long-term REP benefits are lower and the change is relatively small.

  – Scenario results produce a wide range in benefits.

$ millions	FY 2024-25	FY 2029-30
Reference Case	$ 108	$34
COU Best Case	$(160)	$(186)
IOU Best Case	$301	$304
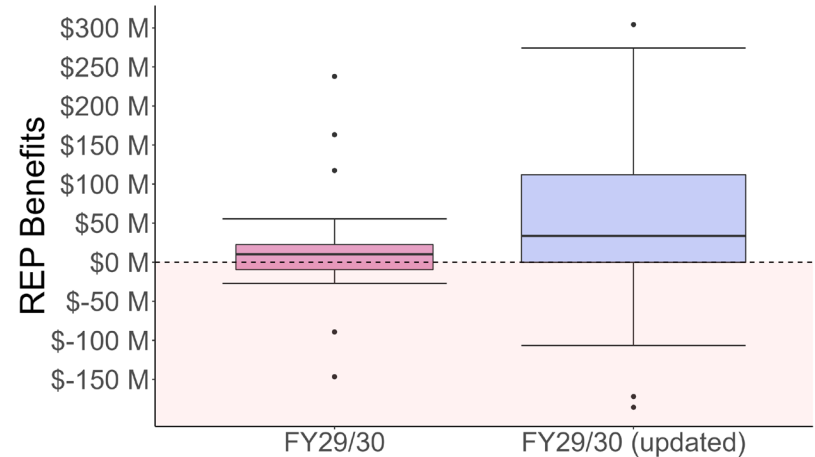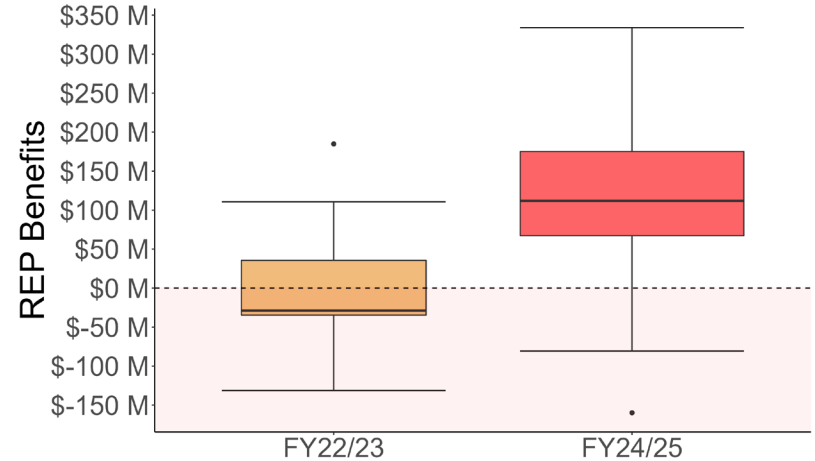
Center of boxes represents the median line; the outer box represents the 25 and 75th percentiles. Whiskers the minimum and maximums.

Results for all Scenarios

Scenario	2024-25	2029-30
Reference Case		
No Conservation Resources in Rate Test		
No Cons. Res. in Rate Test incl.Conservation Costs in 7(b)(2) Case		
Conservation Resource Expensed Year 1		
Conservation Resource Expensed over 12 years in 7(b)(2) Case		
Mid-C Resources in Resource Stack (IOU Load)		
Discount Rate = None used in Rate Test		
Discount Rate = Inflation used in Rate Test		
Discount Rate = Investment Rate used in Rate Test		
Identical Secondary Credit in 7(b)(2) Case		
No 7(b)(3) Rate Protection to Surplus Sales		
Uncontrollable Event Costs Removed from Program Case		
IOU Best Case		
COU Best Case		
ASCs - High		
ASCs - Low		
Loads - PF Decrease (-1000aMW per yr)		
Loads - PF Rise (+1000aMW per yr)		
Market Prices - High		
Market Prices - Low		
Cost Increase ($100 million per yr)		
New Resource Load (1,000aMW per yr plus non-FBS resource)		

$(200) $(150) $(100) $(50) $- $50 $100 $150 $200 $250 $300 $350

REP Benefits $ Millions

■2024-25 ■2029-30

BREAK!

Deep Dive into Scenario Results

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Methodology Based Scenarios

- **Methodology based scenarios** reflect changes in how to implement the 7(b)(2) Rate Test. **Significant variability** exists when applying different methods of running the Rate Test.

- **Conservation** scenarios vary from excluding it from the Rate Test to just including the cost as well as various recovery periods. The greatest impact is felt in the near term; by 2029-30 little to no Conservation Resources are called upon in the Rate Test.

- **Mid-C Scenario** includes resources dedicated to IOU loads which are cheaper than alternatives and lowers REP benefits in the near term.

- The **discount rate** scenarios demonstrate a higher discount rate produces greater REP benefits and vice versa. Rates used: 4% in Ref. Case, 1.2%, 6.8%

- **No 7(b)(3) allocation to Surplus Sales** lowers REP benefits by increasing the allocation to the PFx rate.

- **Uncontrollable Event Costs** removes an estimate of WNP 1&3 costs from the Program Case; this increases REP benefits by lower Rate Protection.
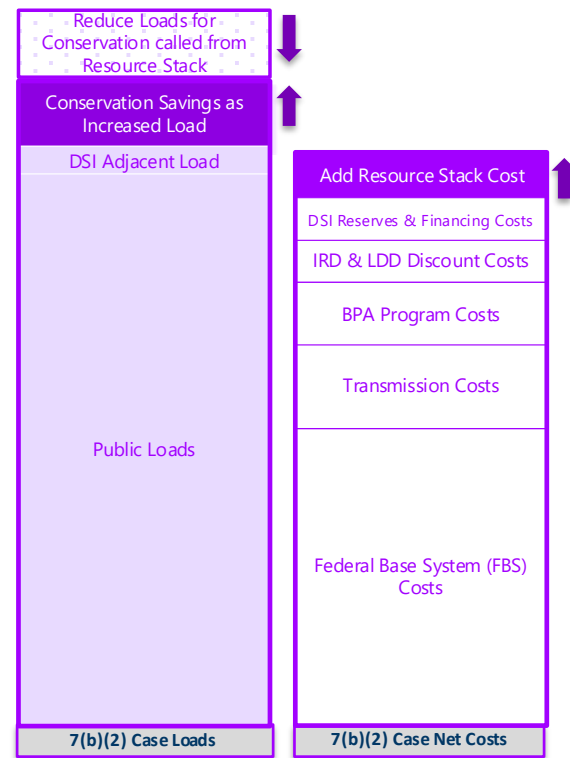
Chart — Scenario vs. REP Benefits ($ Millions), series: 2024-25, 2029-30

- Reference Case
- No Conservation Resources in Rate Test
- No Cons. Res. in Rate Test incl. Conservation Costs in 7(b)(2) Case
- Conservation Resource Expensed Year 1
- Conservation Resource Expensed over 12 years in 7(b)(2) Case
- Mid-C Resources in Resource Stack (IOU Load)
- Discount Rate = None used in Rate Test
- Discount Rate = Inflation used in Rate Test
- Discount Rate = Investment Rate used in Rate Test
- Identical Secondary Credit in 7(b)(2) Case
- No 7(b)(3) Rate Protection to Surplus Sales
- Uncontrollable Event Costs Removed from Program Case
- IOU Best Case
- COU Best Case

X-axis: $(200) $(150) $(100) $(50) $- $50 $100 $150 $200 $250 $300 $350

REP Benefits
$ Millions

■ 2024-25 ■ 2029-30

Scenario Results: Methodologies

Scenario		Phase 1 FY22-23	Phase 2 FY24-25	Phase 1 FY29-30	Phase 2 FY29-30
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
2	No Conservation Resources in Rate Test	$ (28.5)	$ 47.3	$ 5.6	$ 21.2
3	No Conservation Resources in Rate Test add all Conservation Costs to 7(b)(2) Case	$ 110.6	$ 184.3	$ 163.2	$ 166.7
4	Conservation Resource Expensed Year 1	$ 41.1	$ 138.0	$ 18.6	$ 33.5
5	Conservation Resource Expensed over 12 years in 7(b)(2) Case	n/a	$ 115.6	n/a	$ 33.5
6	Mid-C Resources in Resource Stack (IOU Load)	$ (31.8)	$ 97.7	$ 16.2	$ 34.0
7	Discount Rate = None used in Rate Test	$ (131.3)	$ (80.7)	$ (146.6)	$ (172.0)
8	Discount Rate = Inflation used in Rate Test	$ (89.8)	$ (29.9)	$ (89.3)	$ (106.7)
9	Discount Rate = Investment Rate used in Rate Test	$ 89.9	$ 197.3	$ 117.4	$ 146.9
10	Identical Secondary Credit in 7(b)(2) Case	$ 184.9	$ 333.9	$ 237.9	$ 274.3
11	No 7(b)(3) Rate Protection to Surplus Sales	$ (37.5)	$ 66.6	$ (9.5)	$ (0.8)
12	Uncontrollable Event Costs Removed from Program Case	n/a	$ 146.0	n/a	$ 74.7
13	IOU Best Case	n/a	$ 300.9	n/a	$ 304.2
14	COU Best Case	n/a	$ (159.8)	n/a	$ (185.8)

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Recap: Conservation Treatment in the 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).

- 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)(2) Case loads decrease and the associated 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).
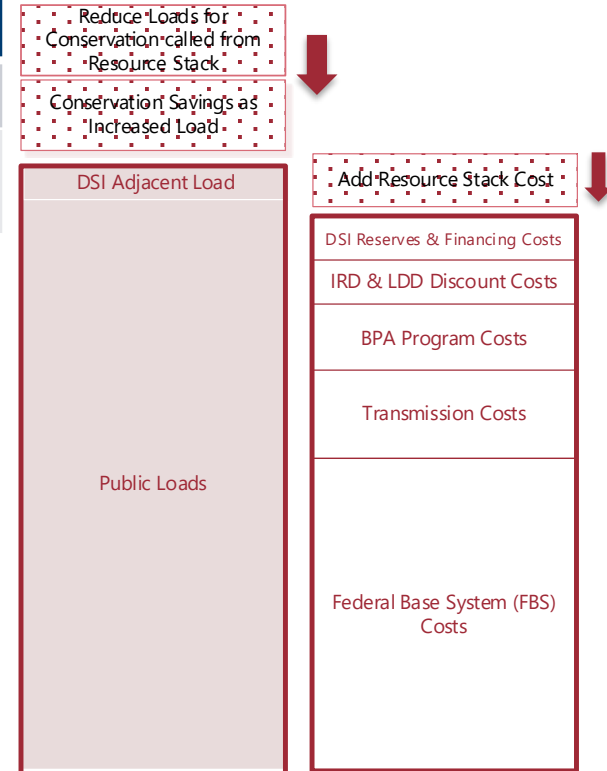

Reduce Loads for Conservation called from Resource Stack

Conservation Savings as Increased Load

DSI Adjacent Load

Public Loads

7(b)(2) Case Loads

Add Resource Stack Cost

DSI Reserves & Financing Costs

IRD & LDD Discount Costs

BPA Program Costs

Transmission Costs

Federal Base System (FBS) Costs

7(b)(2) Case Net Costs

Scenario #2 – No Conservation Resources in Rate Test

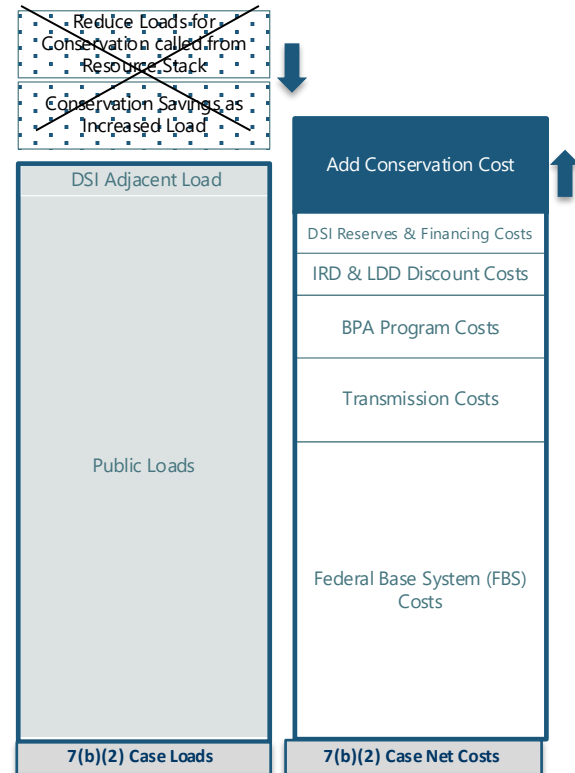| Scenario ($ millions)	FY22-23	FY24-25	FY29-30	FY29-30(U)
1 Reference Case	$(17.0)	$108.1	$18.6	$33.8
2 No Conservation Resources in Rate Test	$(28.5)	$47.3	$5.6	$21.2

- **In this scenario Conservation is not included** 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.

Reduce Loads for Conservation called from Resource Stack

Conservation Savings as Increased Load

Add Resource Stack Cost

DSI Adjacent Load

Public Loads

DSI Reserves & Financing Costs

IRD & LDD Discount Costs

BPA Program Costs

Transmission Costs

Federal Base System (FBS) Costs

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Scenario #3 – Total Conservation Costs Included

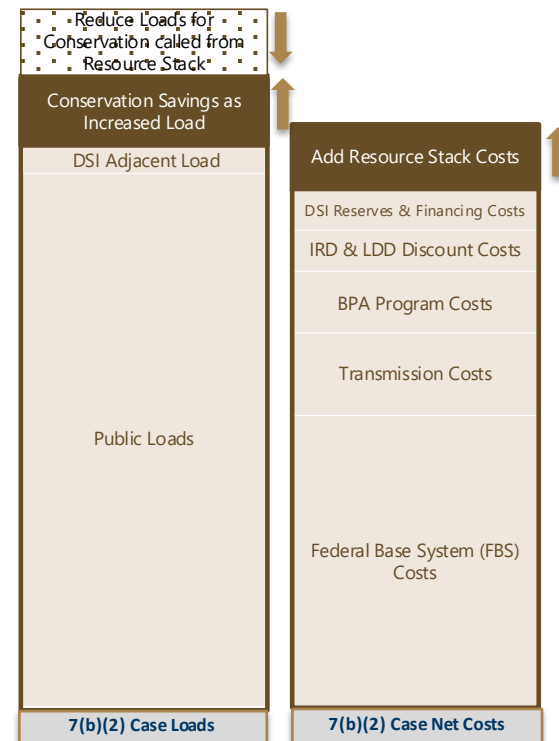| Scenario ($ millions)	FY22-23	FY24-25	FY29-30	FY29-30(U)
1 Reference Case	$(17.0)	$108.1	$18.6	$33.8
3 No Conservation Resources in Rate Test add all Conservation Costs to 7(b)(2) Case	$110.6	$184.3	$163.2	$166.7

- This scenario is like Scenario 2 except the total cost of Conservation that was removed from the Program Case is added to the 7(b)(2) Case.

  – 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 includes the total fixed cost for Conservation which is spread across the smaller 7(b)(2) load obligation.

  – The total conservation costs averages $160 million per year.*

Reduce Loads for Conservation called from Resource Stack

Conservation Savings as Increased Load

Add Conservation Cost

DSI Adjacent Load

DSI Reserves & Financing Costs

IRD & LDD Discount Costs

BPA Program Costs

Transmission Costs

Public Loads

Federal Base System (FBS) Costs

7(b)(2) Case Loads

7(b)(2) Case Net Costs

Scenario #4 – Conservation Resource Expensed Year 1

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$(17.0)	$108.1	$18.6	$33.8
4	Conservation Resources Expensed Year 1	$41.1	$138.0	$18.6	$33.5

- This scenario is like the Reference Case; however, Conservation Resources that are called upon from the Resource Stack are expensed in the first year instead of being spread across five years.

- As a result, the cost of any Conservation Resources called from the Resource Stack to meet the 7(b)(2) Case loads increases which puts upward pressure on the 7(b)(2) Case rate.

- This produces higher Net REP benefits in 2024-25 compared to the Reference Case because the higher costs drive up the 7(b)(2) rate. In 2029-30 the Reference Case is not calling any Conservation Resources to meet 7(b)(2) loads so the REP benefits are largely unchanged when running this scenario.

Scenario #5 – Conservation Expensed over 12 years

Scenario ($ millions)	FY22-23	FY24-25	FY29-30	FY29-30(U)
1 Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
5 Conservation Expensed over 12 years in 7(b)(2) Case	n/a	$ 115.6	n/a	$ 33.5

- This scenario assumes Conservation Resources called upon in the 7(b)(2) Case are expensed over twelve years instead of five years.

- As a result, Conservation Resources become less expensive on a per MWh basis which causes the Rate Test to select Conservation resources over other resources like Mid-C's first. When Conservation Resources are selected the cost of the resource is picked up in the 7(b)(2) Case Rate and 7(b)(2) loads are reduced to reflect the conservation savings. Higher costs spread over fewer loads causes the 7(b)(2) Rate to rise which lowers rate protection and increases net REP benefits.

- In FY 2029-30 no Conservation Resources are called upon; therefore, net REP benefits are largely unchanged.

Scenario #6 – Mid-C Resources (IOU) included in Stack

Scenario ($ millions)	FY22-23	FY24-25	FY29-30	FY29-30(U)
1 Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
6 Mid-C Resources in Resource Stack (IOU Load)	$ (31.8)	$ 97.7	$ 16.2	$ 34.0

- This scenarios assumes that additional Type 2 resources dedicated to IOU load 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. The Reference Case includes Type 2 resources dedicated to marketers but does not assume IOU dedicated load.

- Type 2 resources are typically lower in 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.

- As a result, Net REP benefits in FY 2024-25 decrease as some of these lower cost resources are called upon. In FY 2029-30 the 7(b)(2) load is met without needing additional Mid-C resources resulting in little change.

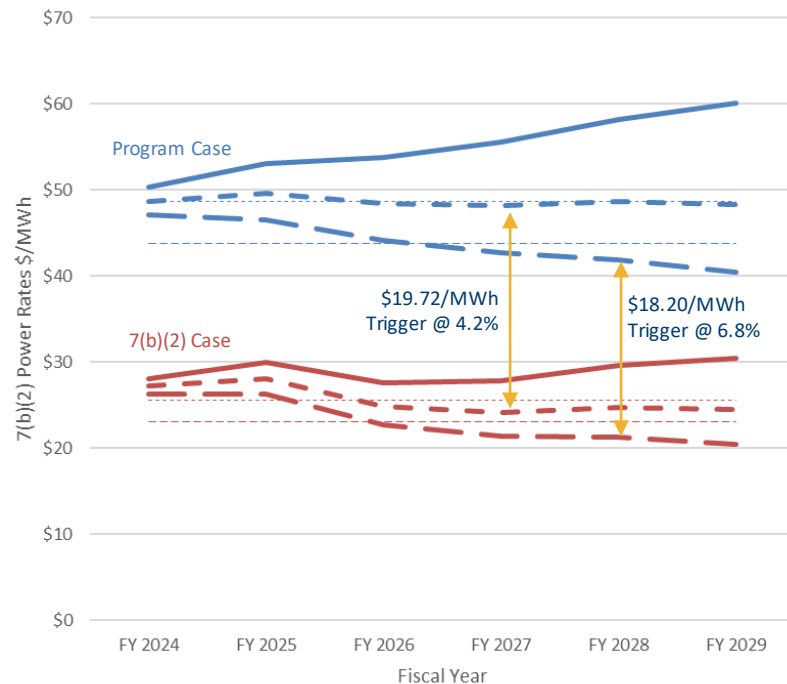# Scenario #7-9 – Discount Rates used in Rate Test

Scenario ($ millions)	FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
7	Discount Rate – None	$ (131.3)	$ (80.7)	$ (146.6)	$ (172.0)
8	Discount Rate – BPA Forecast Rate of Inflation	$ (89.8)	$ (29.9)	$ (89.3)	$ (106.7)
9	Discount Rate – BPA's risk adjusted Investment Rate	$ 89.9	$ 197.3	$ 117.4	$ 146.9

- 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. Generally, the Program Case being larger benefits from the greater discount rate.

- 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.

Average for Test Period	2022-23	2024-25	2029-30	2029-30(U)
Reference Case -30 Year Borrowing Rate	3.35%	4.22%	3.91%	4.05%
Scenario 8 - BPA's Inflation Rate	2.62%	2.38%	2.86%	2.72%
Scenario 9 - BPA's Risk Adjusted Investment Rate	6.81%	6.81%	6.81%	6.81%

Impact of Discounting on the Rate Test

- The graphic on the right portrays the impact of different discount rates on the Program Case and the 7(b)(2) Case rates computed in the Rate Test.

- Using a larger discount rate creates a proportionally greater impact on the Program Case compared to the 7(b)(2) Case due to it being significantly larger.

  – A greater discount rate lowers the Program Case at a rate faster than the 7(b)(2) Case which reduces the trigger rate, lowers rate protection and increases net REP benefits.

  – When the discount rate gets smaller, the trigger rate increases and net REP benefits decrease.

- The current method used for discounting does not apply a weighted average, therefore the Program Case and 7(b)(2) Case rates computed for the last few years of the test period tend to have a greater impact on the trigger value.

Scenario #10 – Identical Secondary Credit

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
10	Identical Secondary Credit in 7(b)(2) Case	$ 184.9	$ 333.9	$ 237.9	$ 274.3

- 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) Rate Protection to Surplus

Scenario ($ millions)	FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
11	No 7(b)(3) Rate Protection to Surplus Sales	$ (37.5)	$ 66.6	$ (9.5)	$ (0.8)

- 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 – Uncontrollable Event Costs Removed

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
12	Uncontrollable Event Costs Removed from the Program Case	n/a	$ 146.0	n/a	$ 74.7

- This scenario removes expenses and capital related costs associated with WNP 1 and 3 from the Program Case only; the Unbifurcated rate and 7(b)(2) Case rate are not adjusted.

- Removing debt associated with WNP 1 and 3 requires a new repayment study which produces a different debt stream; as a result, capital related costs change in this scenario producing both increases and decreases in different years of the test period.

- Overall, the collective removal of WNP 1 and 3 both capital and expense produces a reduction in Program Case costs which lowers the rate used in the Rate Test and reduces rate protection. Net REP benefits increase in this scenario in both rate periods.

Scenario #13 & 14 – IOU and COU Best Cases

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
13	IOU Best Case	n/a	$ 300.9	n/a	$ 304.2
14	COU Best Case	n/a	$ (159.8)	n/a	$ (185.8)

- Generally, these scenarios reflect the most advantageous combination of assumptions and interpretations to produce the most favorable results for a select party.

  - The IOU best case scenario which reflects no Mid C or Conservation resources in the Rate Test. 7(b)(2) Case loads are not adjusted. Total Conservation costs are added to the 7(b)(2) Case. Uncontrollable event costs are removed from the Program Case and the Rate Test uses the investment rate for discounting.

  - The COU best case scenario reflects no Conservation in the Rate Test. Uses Program Case repayment study in the 7(b)(2) Case. Includes all Mid-C resources in the Rate Test. Removes allocation of rate protection to surplus sales and assumes no discounting of rates in the Rate Test.

Sensitivity Based Scenarios

- **ASC growth** scenarios are informed by each IOUs historical growth rate adjusted up/down by 50%. These scenarios influence growth after the rate period, specifically the last 4 years which impacts the rate test and ultimately rate protection.

  - Higher <u>ASCs in the outyears</u> leads to lower REP benefits due to greater rate protection in the Rate Test whereas lower ASCs lead to less rate protection and higher REP benefits.

  - Changes in <u>near-term rate period</u> ASCs have a different impact; higher ASCs increase REP benefits and vice versa. As seen in the waterfall charts for "Exchange Inputs"

- **Load** scenarios adjust PF loads only. A load decrease increases high valued firm surplus and lowers the PF rate which drives up REP benefits. Higher PF loads requires augmentation purchases leading to a higher PF rate and lower REP benefits.

- **Market Price** scenarios adjust Firm Surplus and Net Secondary Revenues; high prices decrease the PF rate and increase REP benefits and vice versa.

- The **Cost** scenario adds expenses which increases the PF rate and reduces REP benefits.

- Adding **New Resource** loads shifts rate protection away from the Exchange Rate pool which increases REP benefits but has a small overall impact to the PF rate.
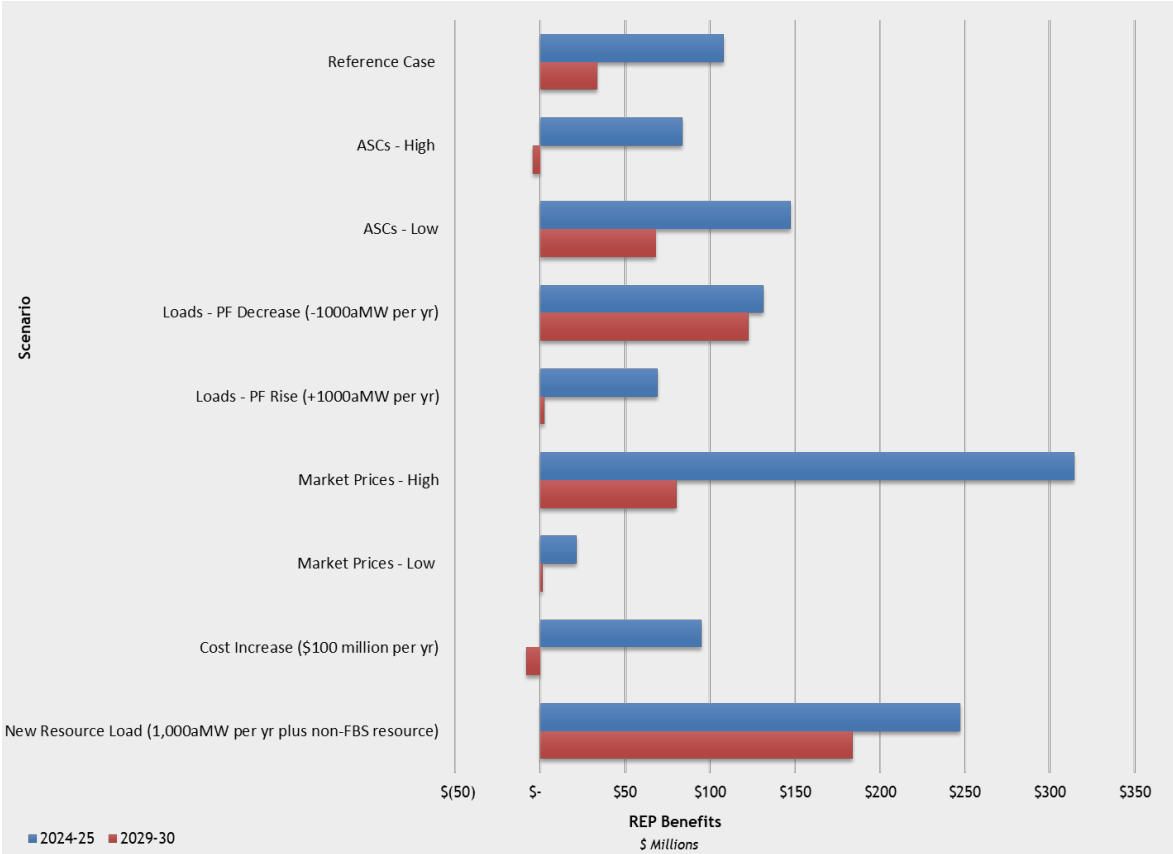
Scenario Results: Sensitivities

| Scenario		Phase 1 FY22-23	Phase 2 FY24-25	Phase 1 FY29-30	Phase 2 FY29-30
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
15	ASCs - High	$ (70.0)	$ 83.7	$ (27.0)	$ (4.5)
16	ASCs - Low	$ (30.4)	$ 147.5	$ 22.6	$ 68.3
17	Loads - PF Decrease (-1000aMW per yr)	$ (28.9)	$ 131.6	$ 0.3	$ 122.5
18	Loads - PF Rise (+1000aMW per yr)	$ 30.0	$ 69.2	$ 10.2	$ 2.6
19	Market Prices - High	n/a	$ 314.5	$ 55.6	$ 80.2
20	Market Prices - Low	n/a	$ 21.7	$ (16.0)	$ 1.5
21	Cost Increase ($100 million per yr)	$ (30.8)	$ 95.1	$ 2.4	$ (8.2)
22	New Resource Load (1,000aMW per yr plus non-FBS resource)	n/a	$ 247.1	n/a	$ 184.0

Scenario #15 & 16 – ASC Growth Sensitivities

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
15	ASCs – High Growth	$ (70.0)	$ 83.7	$ (27.0)	$ (4.5)
16	ASCs – Low Growth	$ (30.4)	$ 147.5	$ 22.6	$ 68.3

- The Reference Case reflects BP-24 ASCs for FY 2024-25 and utilizes the long-term ASC forecasting model for 2026-2034. The rate case ASC forecasting model differs in assumptions from the long-term ASC model.

- ASC scenarios are calculated assuming a growth rate that is 50% greater or lower than the historical growth rate of each IOUs ASCs used in the past 5 rate periods. These scenarios influence growth after the rate period, specifically the last 4 years which impacts the rate test and ultimately rate protection.

- Higher ASCs in the last 4 years of test period lowers net REP benefits because rate protection increases in the Rate Test; whereas lower outyear ASCs lead to less rate protection and higher net REP benefits. Changes in rate period ASCs have a different impact; higher ASCs increase REP benefits and vice versa.

High/Low ASCs vs High/Low Growth ASCs

Escalating/deescalating overall ASCs has distinct impacts on Net REP Benefits from changing the growth trajectory of ASCs

- A *pure* high/low ASC scenario might be imagined as escalating/deescalating the entire time series of forecasted base case ASCs. The delta between high/low scenarios and reference case remains constant over the period (rate period plus test period). This movement is represented in the waterfall charts presented on slides 11-13:

- A high/low growth ASC scenario alters the growth rate from the base case forecast (hashed lines). Or, alternatively a high/low growth ASC scenario keeps the rate period equal to the base case, but only escalates/deescalates the test period (solid lines):
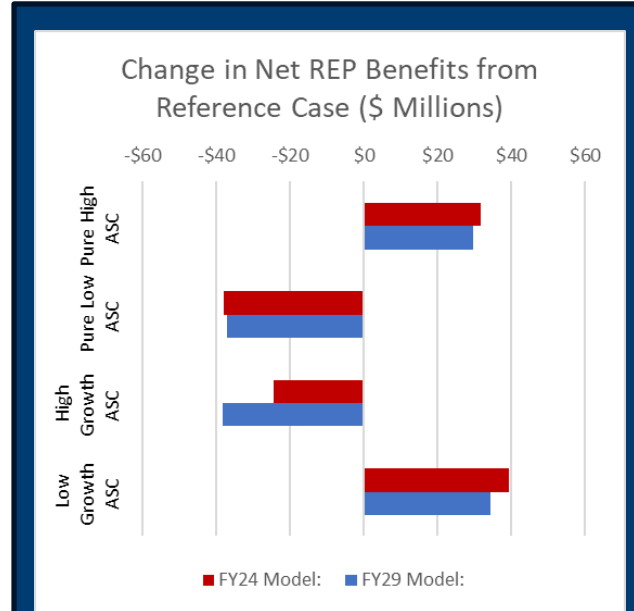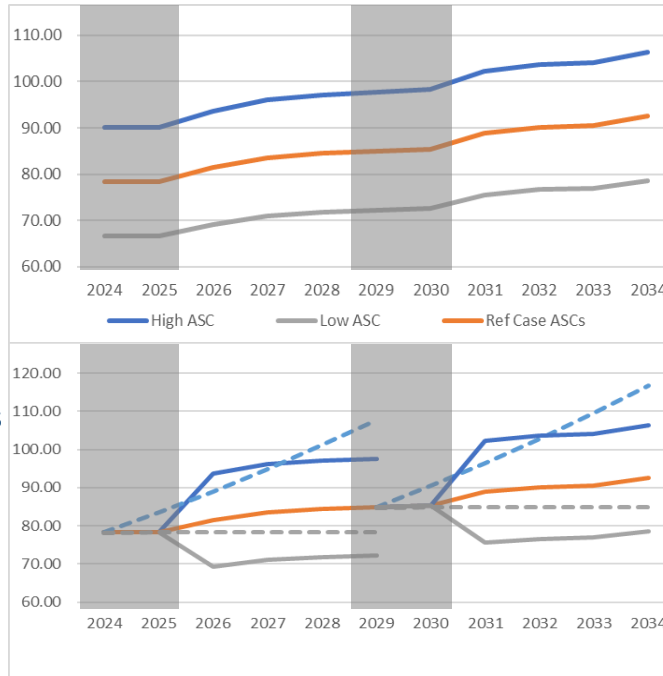
High ASCs and low-growth ASCs tend to increase net benefits while low ASCs or high-growth ASCs tend to decrease net benefits.

Scenario #17 & 18 – PF Loads

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
17	PF Loads Decrease (1,000aMW per yr)	$ (28.9)	$ 131.6	$ 0.3	$ 122.5
18	PF Loads Increase (1,000aMW per yr)	$ 30.0	$ 69.2	$ 10.2	$ 2.6

- These scenarios assume that block loads are increased or decreased by 1,000 aMW per year from the reference case; the load change does not compound. 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 at favorable market rates. Net Secondary inventory changes are not evaluated; only Firm Surplus inventory is adjusted.

- With favorable market price conditions, a **reduction in PF Loads** creates higher Firm Surplus revenues which puts downward pressure on the PF rate; this leads to higher net REP benefits.

- An **increase in PF loads** requires purchasing power which puts upward pressure on the PF rate and reduces net REP benefits.

Scenario #19 & 20 – Market Prices

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
19	Market Prices – High	n/a	$ 314.5	$ 55.6	$ 80.2
20	Market Prices – Low	n/a	$ 21.7	$ (16.0)	$ 1.5

- These scenarios assess how sensitive results are to market price assumptions, the low and high market price distributions were derived by averaging prices at the P10 and P90 thresholds, respectively. The resulting price distributions were applied to inventory levels to calculate NSR values for each market price scenario.

- Higher Firm Surplus and Net Secondary Revenue caused by increased market prices puts downward pressure on the PF rate; in these scenarios the reduction outpaces any offsetting increases in rate protection resulting from the Rate Test leading an increase in Net REP Benefits.

- The inverse is true for lower market prices; fewer Firm Surplus and Net Secondary Revenues increases the PF rate and lowers Net REP Benefits.

Scenario #21 – Cost Increase

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
21	Cost Increase ($100 million per yr)	$ (30.8)	$ 95.1	$ 2.4	$ (8.2)

- The cost scenario adds $100 million in O&M expense in FY 2024. Beyond 2024, the $100 million is escalated at BPA's rate of inflation until FY 2034.

- Cost increases put upward pressure on the PF rate which lowers net REP Benefits. When cost decreases occur net REP benefits decrease.

Scenario #22 – New Resource Load

Scenario ($ millions)		FY22-23	FY24-25	FY29-30	FY29-30(U)
1	Reference Case	$ (17.0)	$ 108.1	$ 18.6	$ 33.8
22	New Resource Load (1000aMW per yr + Non-FBS)	-	$ 247.1	-	$ 184.0

- The New Resources scenario adds 1,000 aMWs of NR load per year between 2024-2034, it does not compound. This represents either New Large Single Loads from Preference customers, or IOUs demonstrating a net requirement they are seeking BPA to serve. The scenario assumes BPA acquires a new annual block of non-FBS resources at $80/MWh totaling 1,000 aMW per year, it does not compound.

- 7(b)(3) Rate Protection is allocated to **all other non-PF power sold** this scenario shifts rate protection away from Exchange Loads and adds it to NR Loads which leads to a lower PF Exchange rate and higher net REP benefits.

Rate	2024-25 Ref. Case	2024-25 Scenario	2029-30 Ref. Case	2029-30 Scenario
PF Public (T1+T2)	$30.89	$31.03	$34.50	$34.74
NR Rate	$100.25	$99.40	$104.92	$103.72
REP Benefits	$108 million	$247 million	$34 million	$184 million

Path Forward

POST
2028
REP

Brainstorm / Next Steps

- BPA believes it needs stakeholders to make collaborative progress on the settlement path by **April of 2024** <u>in order to continue facilitating settlement discussions</u>.

- Absent the development of a collaboratively produced stakeholder proposal or concept by April of 2024, BPA will pivot towards <u>preparing</u> to implement a traditional REP in the BP-29 rate period.

- Preparations to implement a traditional REP program will <u>include</u>:

  - Development of Residential Purchase and Sale Agreements (RPSAs).

  - Updating the 2008 Average System Cost Methodology in a regional collaborative process.

  - The 7(b)(2) Rate Test Legal Interpretation and Implementation methodology.

    - Ongoing updates and improvements to RAM REP Model.

    - Continuous evaluation and coordination with Mid-C Resource owners preparing resource stack inputs (costs & resource allocation).

Thank You!

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Contact Info and Additional Resources*

Please submit questions and feedback to: REP2028@bpa.gov

- **REP Post-2028 External Webpage**

- **REP Fact Sheet**

- **History of REP**

- **REP-12 Final Record of Decision and Agreement**

- **REP-12 Final Settlement Evaluation and Analysis Study**

- **REP-12 Final Settlement Evaluation and Analysis Documentation**

- **1984 Section 7(b)(2) Implementation Methodology**

- **1984 Section 7(b)(2) Legal Interpretation**

- **2008 Section 7(b)(2) Implementation Methodology**

- **2008 Section 7(b)(2) Legal Interpretation**

- **1980 Northwest Power Act**

Appendix

POST
2028
REP

Understanding Dueling Impacts: PF Rate vs Rate Test

- Some components have dual impacts when determining REP benefits; such as Loads/Resources, Costs and ASCs.

- REP benefits are determined by comparing the PF Exchange Rate to utility specific ASCs unique to the Rate Period only.

> **PF Exchange Rate = Unbifurcated PF Rate + Rate Protection "7b3 surcharge" + Transmission Adder**

- Rate Protection is determined by the Rate Test which compares the Program Case and the 7(b)(2) Case Rate across 6 years.
  - The Program Case rate is primarily the Unbifurcated PF rate with conservation costs removed.
  - The 7(b)(2) Case Rate is fictious and includes various adjustments from the Program Case.

- Movement in some components like costs and revenues impact both the Unbifurcated PF Rate, the PFx Rate and the Rate Test in varying degrees.
  - Example 1: Higher costs push up the PFx Rate faster than the reduction in rate protection within the Rate Test resulting in lower REP benefits.
  - Example 2: Higher ASCs in the rate test increase rate protection over the test period (6 years) which leads to the PFx rate increasing faster than the ASCs when comparing the rate period values which lowers REP benefits.
  - Example 3: Higher loads often leads to increased net revenue if no augmentation purchases are required; this lowers the PF rate. Within the rate test the trigger value is multiped by PF loads which increases rate protection when loads increase; this can cause the 7(b)(3) rate protection surcharge applied to the PFx rate to outpace any initial downward pressure felt by the increase in revenues. Ultimately this lowers REP benefits.

Example 1