



Provider of Choice Planned Product Workshop

November 14, 2023

PROVIDER OF CHOICE

**POST
2028**





Today's Workshop

Today's Agenda

Time Start	Time End	Topic	Presenter(s)
9 am	9:10 am	Welcome and Overview	Michelle Lichtenfels, Program Manager, Provider of Choice
9:10 am	12 pm	Peak Net Requirements	Lindsay Bleifuss, Account Executive
		Product Comparison & Block with Shaping Capacity Tool Demo	Daniel Fisher, Manager, Power Rates Kate Patton, Account Executive
		B R E A K	
		Slice	Sarah Burczak, Policy Lead, Provider of Choice Kayla Cisco, Manager, Slice Team
12 pm	1 pm	L U N C H B R E A K	
1 pm	1:45 pm	Customer Presentation	EWEB, Snohomish, and TEA
1:45 pm	2 pm	B R E A K	
2 pm	3:55 pm	Discussion	All
3:55 pm	4 pm	Wrap up	Michelle Lichtenfels, Program Manager, Provider of Choice

Note: Start and end times are approximate.

Workshop Objectives

Provide a Bonneville public forum to discuss power product design with all customers and stakeholders.

Share the proposed application of peak net requirements to Bonneville power products.



Workshop Roles & Expectations



Bonneville: Provide open and inclusive opportunities for discussion and feedback.

Participants: Provide feedback and share perspectives during workshops.

All: Respect one another and assume good intentions. Bring a constructive mentality.

Comments on This Workshop

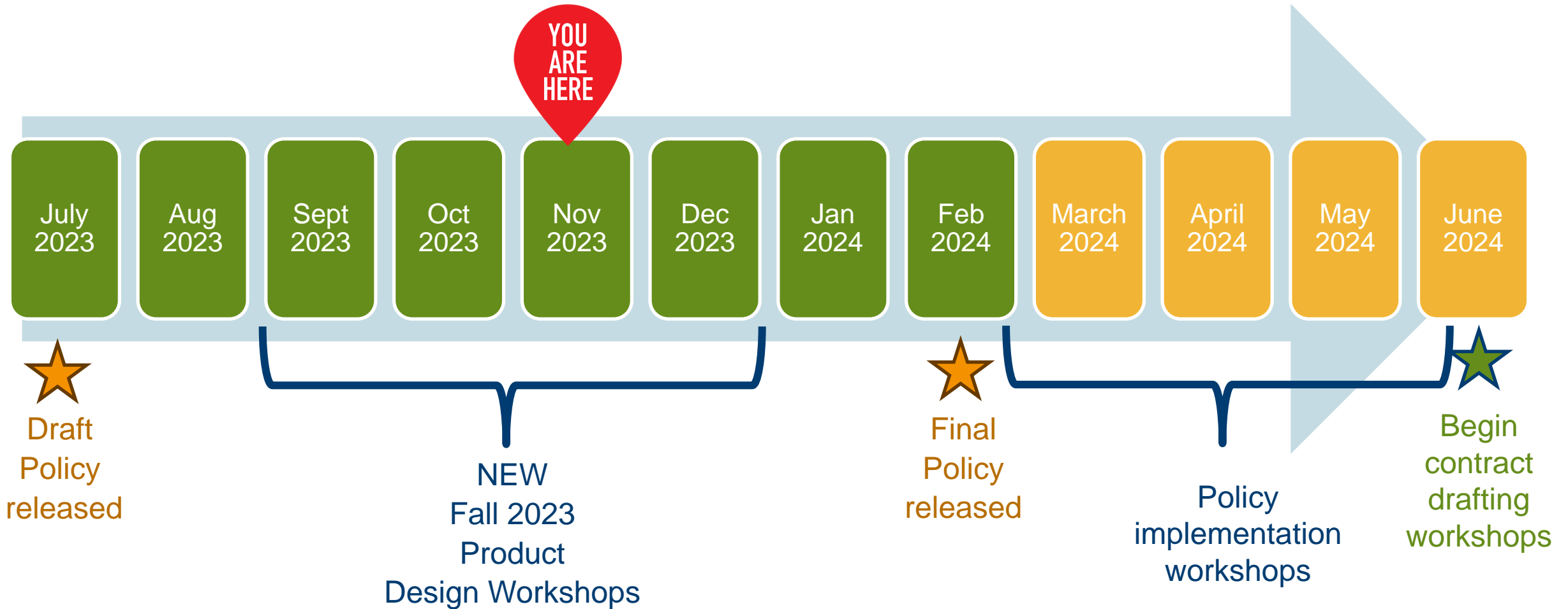
Please share feedback **on this workshop** by Tues., November 28 to Post2028@bpa.gov

- Please note that direct responses will not be provided.

Feedback will help inform future workshops.



Product Design Timeline





Peak Net Requirements

Northwest Power Act 5(b)(1)

- **Northwest Power Act 5(b)(1)** - BPA shall offer to sell electric power to meet a requesting public body, cooperative and investor owned utility's regional consumer load to the extent the load is not served by firm energy or peaking energy from the customer's non-federal resources: 5(b)(1)(A) resources used in 1980; 5(b)(1) resources used ("dedicated") after 1980.
- **The legislative history regarding section 5(b)** indicates that BPA should separately identify and calculate the firm energy capability of a customer's resources applied to its load from the peaking energy capability applied to that load. H. Rpt 96-976 96th Cong. 2d Sess. Part I.
- **BPA's contract offer of power** is based on determining the requesting utility's firm power load and its resources, i.e., net requirements.

PNR and Draft Policy

In the draft Provider of Choice Policy, Bonneville defined an **energy net requirements** and **peak net requirements (PNR)** calculation.

- The proposed peak net requirements calculation uses the peaking capability of non-federal resources as established by the **Western Resource Adequacy Program (WRAP)**.
- Bonneville is evaluating the proposed peak net requirements calculation based on comments received on the draft Policy.

Western Resource Adequacy Program

- Bonneville proposes using the method being established in the **WRAP** by the Western Power Pool to determine a resource's peaking energy capability.
- WRAP defines the term **Qualifying Capacity Contribution (QCC)** as the megawatt (MW) quantity of capacity provided by a resource, contract, or portfolio.
 - For more information on WRAP QCC assumptions and specific resource type calculation methodology see Part II of the [WRAP Tariff](#).
- In the Forward Showing process WRAP also accounts for risk through the use of a **Planning Reserve Margin (PRM)**.

PNR Proposed Application – All Products

Bonneville will reflect the peaking capability of Dedicated Resources as defined by the PNR methodology in all the Provider of Choice contracts.

- Allows Bonneville to be consistent with 5(b)(1) of the Northwest Power Act.
- Gives Bonneville insight to the amount of capacity needed for certain products.

PNR Impact – Load Following

The Load Following product serves a customer's net requirements load on an hourly basis, including the customer's peak load.

Bonneville will continue to meet the hourly net requirements (including the hour of a customer's peak) as it does today.

PNR Impact – Block

Block is a flat, or monthly/diurnally shaped, amount of energy with no additional option to increase the energy for capacity needs.

Setting the annual and monthly block amounts will continue to use Dedicated Resource energy amounts.

No PNR implication.

PNR Impact – Block with Shaping Capacity Options

- 1. Block with Shaping Capacity up to XX%.**
- 2. Block with Shaping Capacity above XX% up to P50.**
- 3. Block with Shaping Capacity to P50 plus Peak Load Variance Service to P10.**

PNR Impact – Block with Shaping Capacity

Option 1

1. Block with Shaping Capacity up to XX%

- This option allows a customer to shape its Block product up to XX% in any given month.
- Block amounts will continue to be set based on Dedicated Resource energy amounts.
- No PNR implication.

PNR Impact – Block with Shaping Capacity

Option 2

2. Block with Shaping Capacity above XX% up to P50

- This option is directly tied to each customer's forecast monthly P50 peak amount.
- Bonneville will use PNR calculation (Dedicated Resource peak amounts) to calculate how much additional capacity a customer can access up to its P50 peak.

PNR Impact – Block with Shaping Capacity

Option 3

3. Block with Shaping Capacity to P50 plus Peak Load Variance Service to P10

- This option is an add-on capacity feature offering customers shaping capacity above the P50 peak forecast.
- Bonneville will use PNR calculation to calculate how much additional capacity a customer can access up to its P10 peak.
- More details in the Products Comparison section of this presentation.

PNR Impact – Slice/Block Proposal

- **Slice** amounts are directly tied to the shape of the federal system and not the customers' load.
 - Slice/Block customers receive an amount of surplus capacity as provided under the product through their slice portion.
 - The slice shape will continue to reflect simulated system output with **no proposed monthly 'call backs' or 'limitations'**.
- **Block** amounts reflect each customer's monthly net requirements shape, unlike the slice portion.

PNR Impact – Slice/Block Cont'd

Bonneville proposes to set Slice/Block amounts at **50% Slice** and **50% Block** based on Dedicated Resource energy amounts.

- Bonneville proposes to provide no less than 50% block in the Slice/Block product.
- Requiring block to be 50% or greater will mitigate Bonneville's concern of providing surplus slice (or slice beyond a customers' peak load need) at times that Bonneville is capacity deficit.
- No PNR Implication.



Product Comparison

Building Products and Equity

- The intent has always been to charge products for the services received and to not charge for services not received.
- Some level of à la carte product selection (customer-selected layering) can be achieved while also maintaining equity. This is an easier task when consistent pricing (*i.e.*, rates and billing determinants) applies across the products and the services provided within each product.
- This equitable customer-specific layering lends itself to the Block and Load Following products given comparable application of capacity charges, energy charges, cost allocation, and treatment of risk.
- Bonneville maintains that the nature of the Slice/Block product being system-output dependent with its different cost allocation and different treatment of risk makes it unsuitable to a customer-selected layering of services. This is particularly true when the services attempting to be layered move the product away from being a system-output dependent product to a load-dependent product.

New Block Product Layer

- We have heard your feedback and have interpreted it as needing to find a way to equitably reduce the load service gap between the Load Following product and the Block with Shaping Capacity product.
- With careful architecture and load/resource information, we believe this can be achieved.
- We also believe we can remove the anxiety around a peak net requirements check for conservatively constrained products.
Specifically:
 - **Block: w/ Slice** when set at a 50/50 Slice/Block split.
 - **Block: Stand Alone**
 - **Block: w/ Shaping Capacity \leq XX% of average energy net requirement served at Tier 1 rates.**

What is XX% ?

- Bonneville sees **XX%** as a proxy for a conservative amount of capacity needed from Bonneville to meet a utility's P50 peak. It would be the threshold for when the benefits of a PNR test reached the point of diminishing returns.
- Bonneville believes a reasonable way to calculate **XX%** would be to use a relatively high P50 load factor assumption for a utility as adjusted assuming a significant portion of that utility's P50 peak needs are being met by non-federal resources. For example:

A 70-75% load factor is a relatively high load factor for a utility

Load factor is calculated as: [average load energy] / [load peak]






If we assumed two-thirds (*i.e.*, a significant portion) of the utility's peak need above its average load need is met by its non-federal resources, this high load factor utility would need to purchase approximately 10-15% Block shaping capacity to meet its P50 peak load.

What is XX% (Cont'd)

Why make a proxy option available and not just use WRAP QCC to more precisely calculate a utility's PNR need?

- Peak planning standards and peak net requirements can be difficult to compare when hydro resources are involved. Calculating resource capacity contributions on energy constrained resources has always been one part science and one part art.
- This point of diminishing returns is also consistent with Bonneville's approach to the Slice/Block product.
 - When the peak capacity provided through the Slice/Block product is paired with at least 50% block, it tempers the capacity provided enough to no longer require a PNR test.
 - This point of diminishing returns could change in the future, but 50/50 was the right level for Regional Dialogue and appears to be the right level for Provider of Choice.

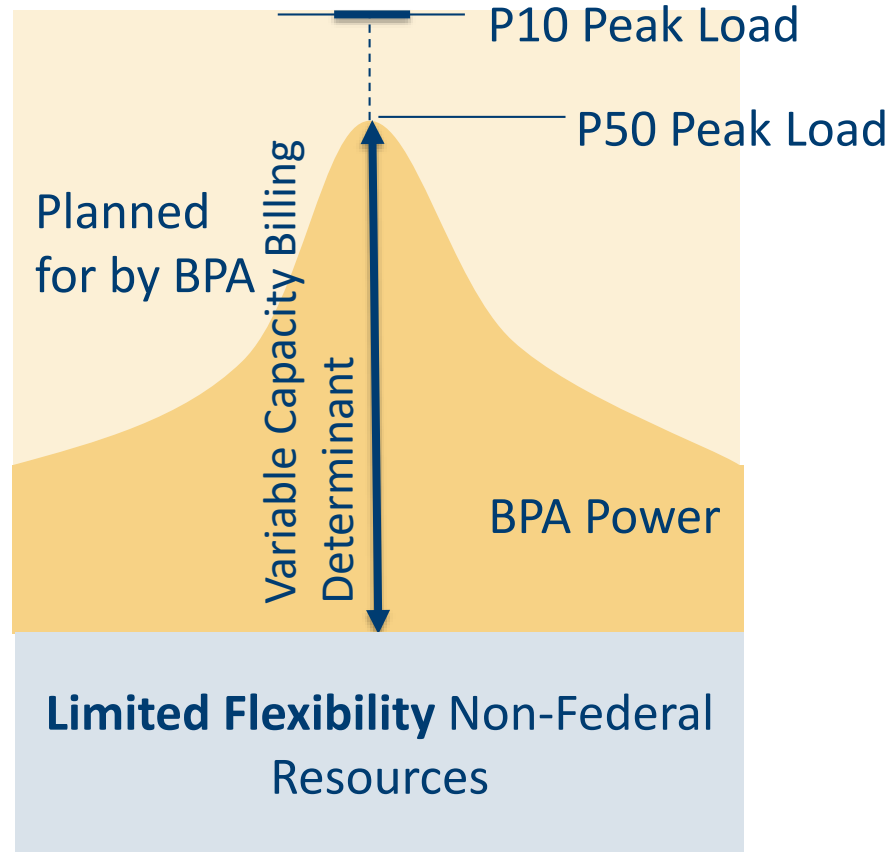
Proposed Product Attributes

Product	Fit to Load Shape	Anticipated Capacity Specific Charges	Capacity Provided above P50	Non-Fed Resource Flexibility	PNR Check
Slice/Block	Least 	No Embedded	System Dependent	Yes	No @ 50/50
Block: Stand-Alone	Partial 	No Embedded	No	Yes	No
Block: w/Shaping Capacity	Partial 	Yes Embedded +	No	Yes	≤XX% No >XX% Yes
NEW! Block: w/ Shaping Capacity + Peak Load Variance Service	Partial 	Yes Embedded ++	Yes	Yes	Yes
Load Following	Most 	Yes Embedded ++	Yes	Limited	No

Load Following

 +  = WRAP Qualified Capacity Contribution provided by BPA

Load Following Product



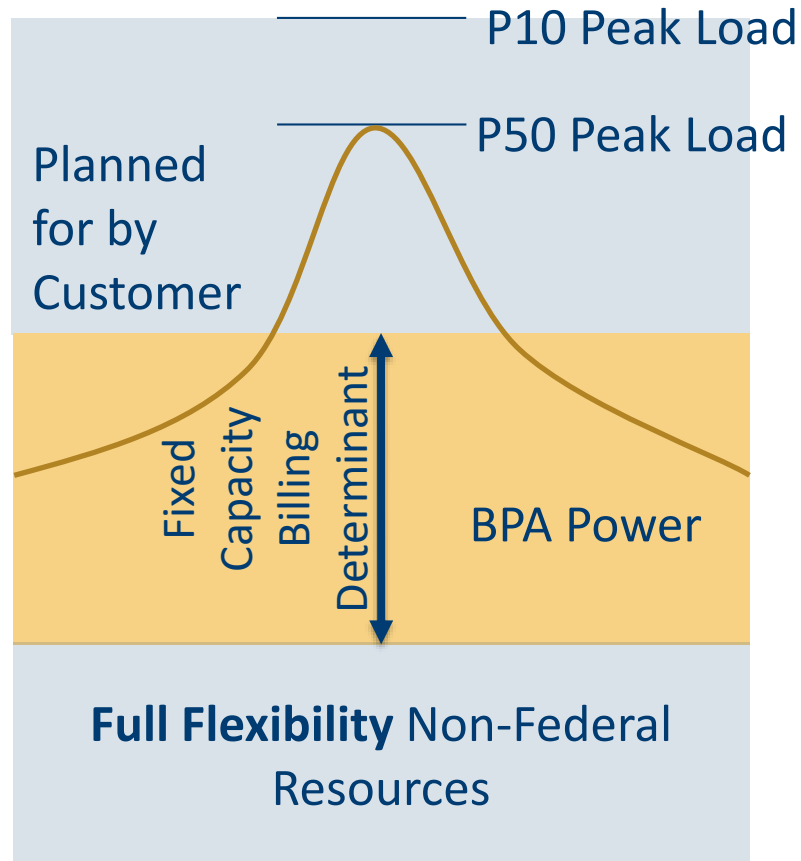
BPA obligation determined by load variability only which makes it easier to forecast and plan for compared to variability in obligation that could be caused by marketing and non-federal resource operations.

Receives only the capacity needed to meet load and pays for only what is needed.

Block: Stand Alone

 +  = WRAP Qualified Capacity Contribution provided by BPA

Block Product

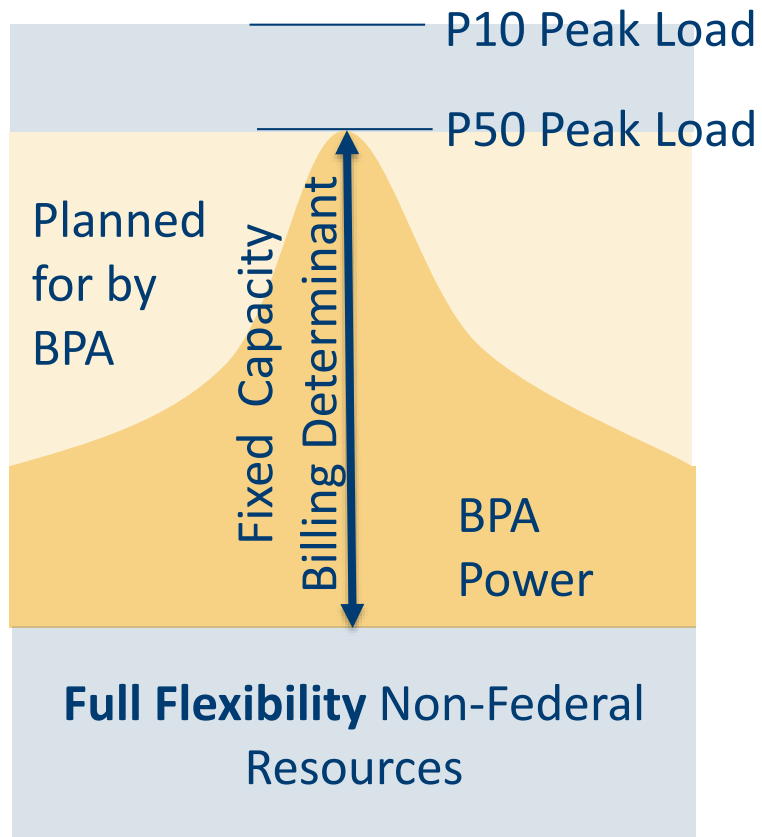


BPA obligation locked down which means customer is free to market and flexibly operate non-federal resources.

Block: With Shaping Capacity

 +  = WRAP Qualified Capacity Contribution provided by BPA

Block with Shaping Capacity



BPA obligation determined by customer as constrained by ramping and other contract limits.

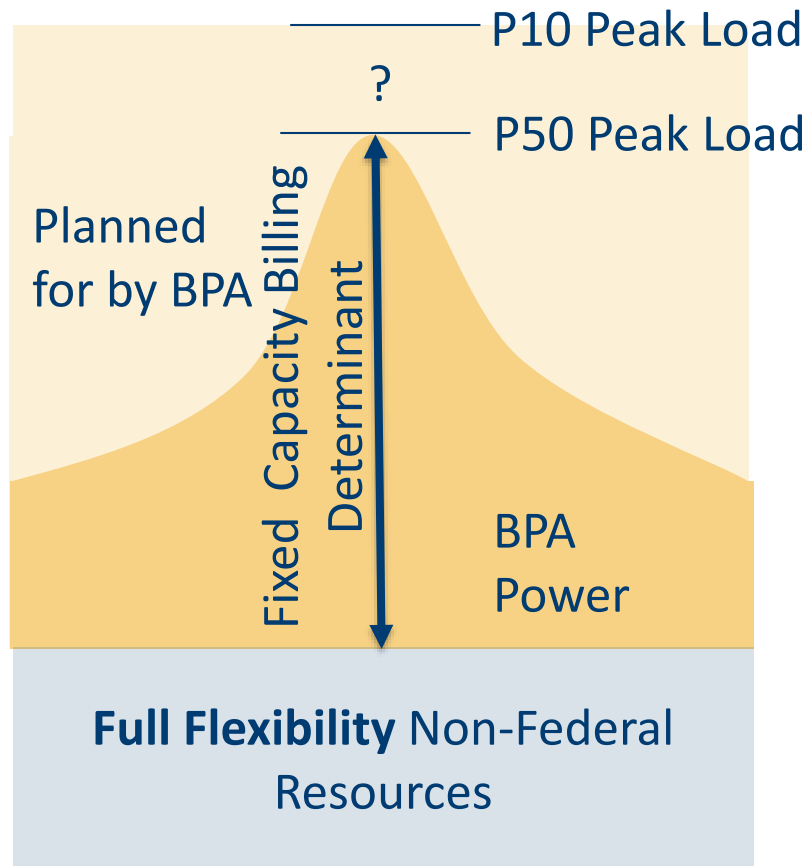
Because of this, BPA must plan for the max amount of capacity use and bill for it regardless of how the customer uses the flexibility.

Provided access to shaping capacity regardless of load and pays for it whether used or not.

Block: With Shaping Capacity + Peak Load Variance Service

 +  = WRAP Qualified Capacity Contribution provided by BPA

Block with Shaping Product with PRM



New Product. BPA P10 obligation determined by load variability only.

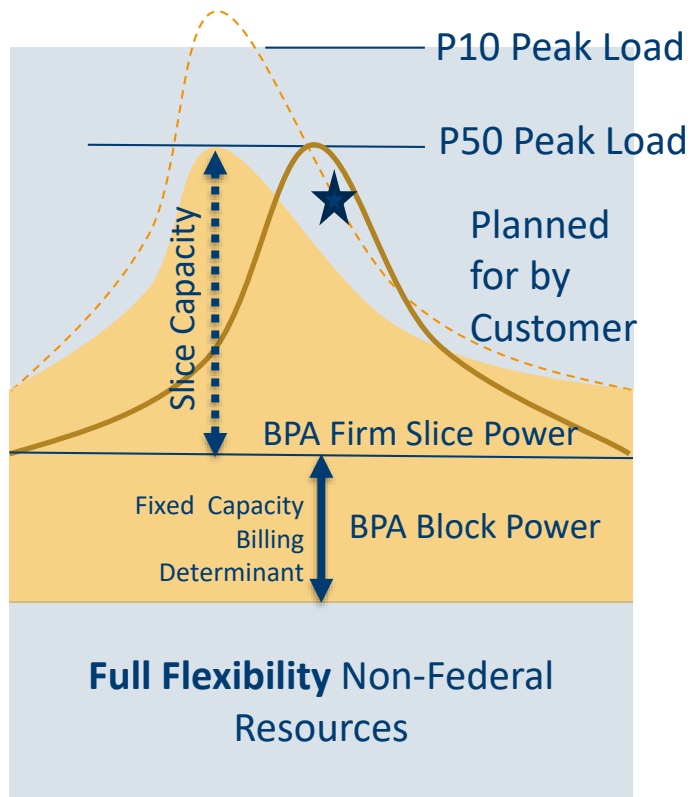
Must be carefully designed and constrained to provide similar uncertainty and load-driven use as capacity provided to the Load Following product.

Slice/Block

 +  = WRAP Qualified Capacity Contribution provided by BPA

 Secondary

Slice/Block Product



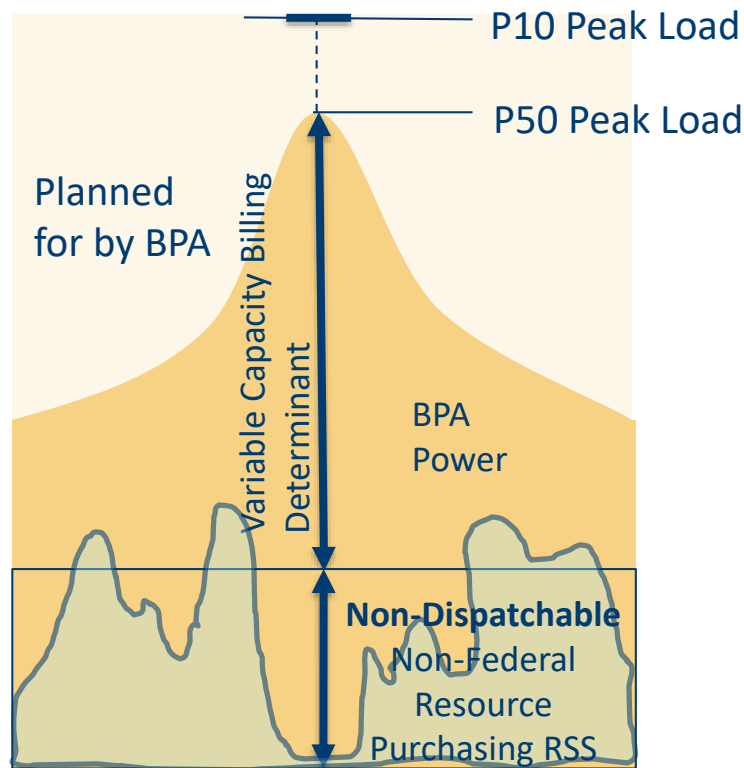
★ Firm Slice and P50 Load may not match each month. Must be managed through a combination of non-federal resources, balancing power purchases and secondary energy management.

BPA obligation determined by system capability. Because of the system capability constraint, customer is provided simulated access to the operational flexibility of the system and full non-Federal resource flexibility. Customer will need to balance the firm system the same as BPA and make risk informed decisions on managing secondary generation. Consistent with this approach, BPA does not allocate Slice BPA's balancing purchase costs nor does BPA pass on the cost/benefit of managing secondary sales. **Provided access to firm Slice capacity regardless of load and pays for it whether used or not and whether available or not.**

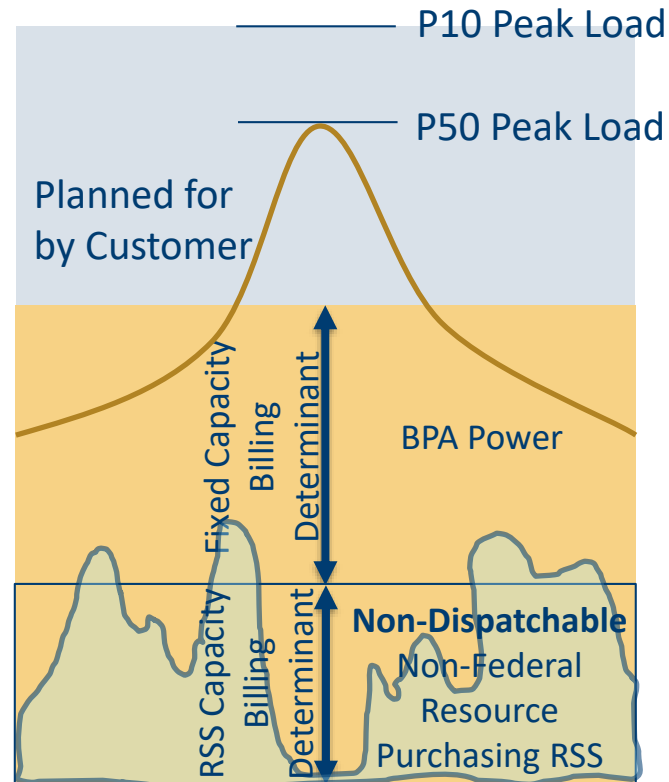
Resource Support Services

 +  = WRAP Qualified Capacity Contribution provided by BPA

Load Following Product & RSS



Block Product & RSS



Capacity purchased through Resource Support Services (RSS) would be available to meet Qualified Capacity Contribution (QCC).

Block with Shaping Capacity Tool Demonstration

(Tool will be posted 11/13/2023)





Slice/Block

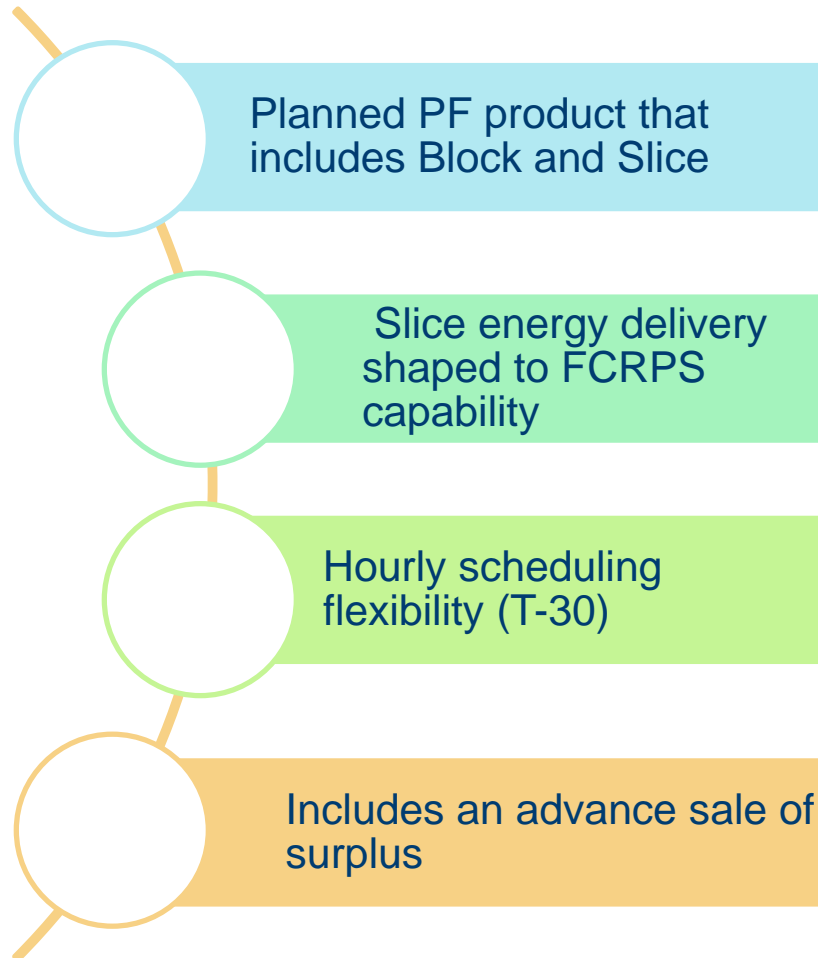
Overview

- Slice/Block Under Regional Dialogue
- Slice/Block as a Day-ahead Product
- Slice/Block Ratio
- Minimum Threshold
- Risk and Operational Complexity
- Exploring Firm Commitments

What is the Slice/Block RD Product?

- Slice/Block product is a planned product that bundles the Slice product and the Block product to meet a customer's **planned annual** net requirements load.
 - Block portion of this product provides a planned amount of flat (monthly) firm power.
 - ~50% of customer's annual energy net requirements shaped to monthly net requirements.
 - Amounts change each rate case and are equal to a customer's net requirements load – Critical Slice amounts.
 - Slice portion offers a federal system sale of power that includes 1) firm requirements power, and 2) an advance sale of surplus power
 - Slice does not grant a customer operational control and is a system resource
- Bonneville does not guarantee that the amount of Slice/Block Energy will be sufficient to meet a customer's regional consumer load, on an hourly, daily, weekly, monthly, or annual basis.

Key Features – Current Slice Product



- ✓ Slice advanced sale of surplus is a load obligation on BPA
- ✓ Flexibility in use of non-federal resources
- ✓ Block reduces water year risk to customers

- ✓ Requires monitoring 24x7 systems
- ✓ Provides flexibility/capacity of FCRPS to shape resources to loads

- ✓ Customer flexibility until T-30 to adjust resources (Allows customers to follow their load variation without giving up control of own resources)

- ✓ Customers receive direct financial benefits of secondary energy and water conditions
- ✓ Allows customers to manage trading floor risk differently than BPA
- ✓ Requires a trading desk or scheduling agent

Slice – Operations Context

- The **number and complexity of FCRPS operational constraints** have increased over the course of Regional Dialogue and are likely to grow over time.
- Slice adds **complexity to new operations**; Bonneville must consider how those new operations would be implemented in a simulated environment.
- Slice also **creates planning uncertainty until near real time**.

Slice as a Day-Ahead Product

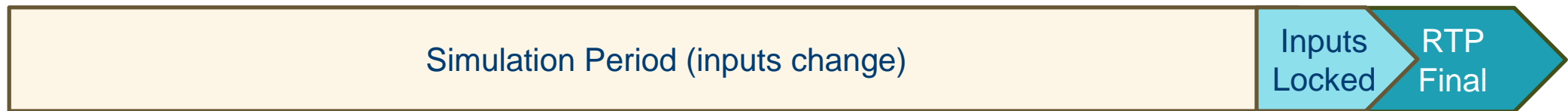
- Bonneville optimizes the FCRPS to serve the load obligations of all customers.
 - In a day-ahead market, the Slice/Block product needs to fit into Bonneville's optimization for the region as a whole.
- Slice/Block customers under a day-ahead product would:
 - Submit a final slice take ahead of the day-ahead market run and ahead of when Bonneville's market submittal. It would not provide an opportunity to submit bid range associated with slice to the market.
 - No ability to adjust slice take for real-time market, nor bid slice into real-time market. Including a real-time component would increase the uncertainty and complexity of offering the product.

Timing of Day-ahead and Real Time Slice

- Determines when inputs are locked and thus whether customers share in immediate outage risk.
- Product would not allow changes to slice right-to-power to follow load changes and settlements



Hourly Slice (Current Product)



Day-ahead Slice (BPA Proposed Slice)



Slice/Block Ratio – Block

Bonneville proposes to establish a block amount of at least 50%.

- The **block portion** of the product must be equal throughout a month although customers **can opt for a flat annual or flat within-month shape**.
- The annual amount of block is calculated as the difference between the **customer's planned annual net requirements load and the firm slice amount** from the Slice/Block product.
- The **annual amount of block energy can change as needed** to absorb changes to annual and rate case updates. This allows the slice percentage to remain unchanged throughout the contract.

Slice/Block Ratio – Slice

Bonneville proposes to cap the slice portion of the Slice/Block product at 50%.

- The customer's slice output is **calculated based on a percentage of the annual firm portion of the Tier 1 system**. And is a sale of firm power.
- At certain times during the year the **Slice/Block product may deliver more or less power** due to water availability and system operations. So generally, the better the water year, the more energy is available under slice.
- The Slice/Block product includes **requirements power and advance sale of surplus power**.
- A peak net requirements would not be applied to the Slice/Block product.

Slice Proposal - Comparison to RD

Attribute	Regional Dialogue	Provider of Choice
Planned PF product that includes Block and Slice?	Yes	Yes
Slice/Block ratio?	Slice/Block ratio 50%	Slice % capped at 50%
Scheduling?	Hourly scheduling flexibility (T-30)	Day-ahead scheduling-ahead of DAM submittals
Advanced sale of surplus?	Yes	Yes
Slice energy delivery shaped to FCRPS capability?	Yes	Yes
RSO Test or equivalent?	Yes	Yes

Minimum Threshold

- At the start of Regional Dialogue contracts, Slice/Block product participation was at **27%**.
- Slice/Block participation has dropped to **19%**.
 - Some indicators suggest more customers may leave the product.
- This has prompted questions regarding product viability and a minimum level of participation at when Bonneville would offer the product.
- Bonneville proposes that **15%** participation is needed to ensure the Slice/Block product remains viable.

Risk and Operational Complexity

- **How risk factors into Slice/Block product:**
 - Bonneville acknowledges that under the current product design Slice/Block dampens the financial impact of water year variability.
 - While Bonneville uses Slice/Block to manage risk, Slice/Block is not the only tool that could be used to reduce water year risk. Bonneville has other tools available to manage that risk.
- **Operational complexity and cost to administer the Slice/Block product relative to benefits:**
 - Dedicated Slice staff in addition to Slice/Block-specific work across other business processes.
 - The Slice Computer Application.

Exploring Firm Commitments

Bonneville will need to explore when a **firm commitment** from customers who anticipate electing a Slice/Block product will be needed.

- Enables sufficient time to make changes to the Slice Computer Application and internal business processes to ensure the product is fully operational in 2028.
- Ensures resources, both staff and funding, are not deployed if minimum threshold will not be met under Provider of Choice.

Slice/Block Proposal – Day-ahead Summary

Timing

- Slice/Block will be a day-ahead product.
- A real-time component to Slice/Block will not be offered.

Scheduling and flexibility

- No sub-hourly services.
- Slice/Block customers must provide a final hourly RTP prior to DAM submittal.

RSO test or equivalent

- RSO test is required to offer a pre-sale of surplus.
- Studies and other tests will stay the same or be simplified.

Slice/Block Thresholds

- Slice/Block is capped at 50%.
- No more than 2000 aMW of Slice/Block.
- BPA will not offer a Slice/Block product that is less than 15% of the system or more than 25%.



Customer Presentation

Discussion





Wrap Up

Comments on This Workshop

Please share feedback **on this workshop** by Tues. Nov 28 to Post2028@bpa.gov

- Please note that direct responses will not be provided.

Feedback will help inform future workshops.



Workshops

Date	Topics
December 12, 2023	<ul style="list-style-type: none">• Product design discussions (cont'd)• Overview of Policy Implementation and Contract Development phase• Tentative workshop approach• Post-2028 process timeline overviews, including Public Rate Design Methodology (PRDM) timeline
Spring 2024	<ul style="list-style-type: none">• Slice in a fixed system• RSO test or equivalent under a day-ahead market• Other



Thank you.

Find Us:

Email: post2028@bpa.gov

Web: [Provider of Choice - Bonneville Power Administration \(bpa.gov\)](https://www.providerofchoice.gov)