Block and PLVS

July 23, 2024

Workshop Objectives

- Share BPA's Monthly Block Shaping Factors product recalculation final proposal for all Block products.
- Share BPA's final proposal on elements of the Block with Shaping Capacity (BWSC) Design Elements.
- Discuss BPA's proposal for Peak Load Variance Service (PLVS) for BWSC product.

Monthly Block Shaping Factor Recalculation

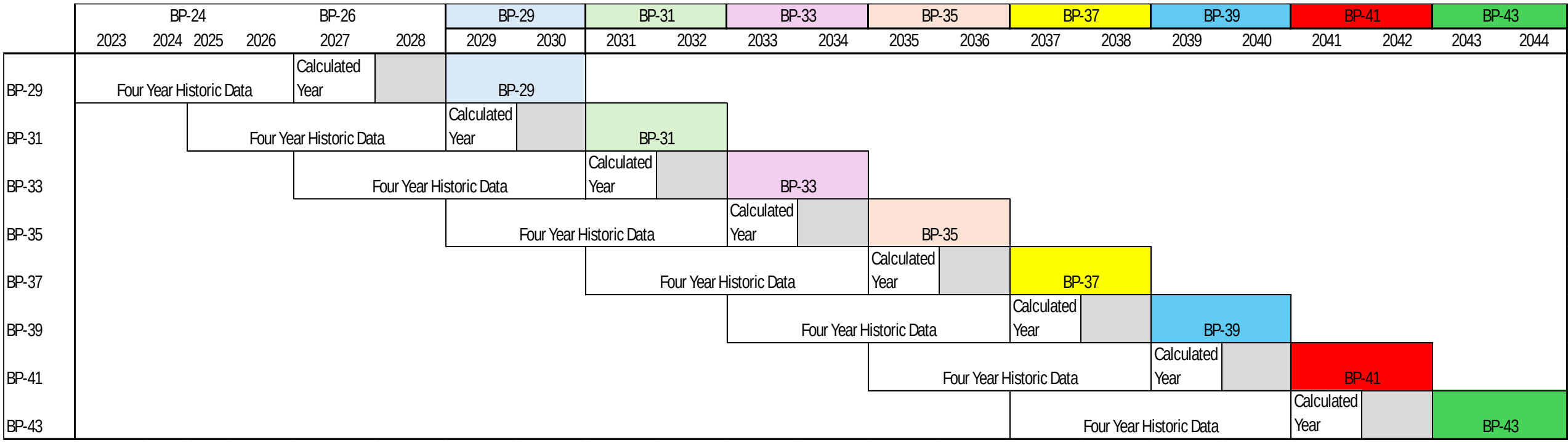
Block Shaping Factor Recalculation

- Bonneville has considered customer comments on the timing and frequency of block recalculation under Provider of Choice contracts.
- Bonneville will recalculate Block Shaping Factors each rate period, based off an average of 4 years of actual data.
  - Bonneville has determined the proposed approach relieves the administrative burden weighed in the ROD and is an appropriate shift from the ROD.

Block Shaping Calculation Timing

Contract Signed

Power Deliveries Begin



PROVIDER OF CHOICE POST 2028

Block with Shaping Capacity (BWSC) Design Elements

Ramp Rates

Bonneville is planning on applying a ramp rate of 20% for BWSC.

- The data shows that a 20% ramp rate will allow customers to follow their load variations in most hours.
- A higher ramp rate would require BPA to look at exactly how a customer deploys their resources. This would undo the simplicity of the planned product construct and add significant administrative burden for both customers and BPA.

First Half of Month Energy Test

Bonneville is planning that 45% to 55% of the energy in a month must be used in the first half of the hours of a given month.

- This test helps to ensure that Block is being taken to load and helps with BPA system planning.

A. Months with 744 hours = First half of the month would be **Hour 1 to 372.**
B. Months with 720 hours = First half of the month would be **Hour 1 to 360**.
and so on…..

Peak Load Variance Service (PLVS) for Block with Shaping Capacity

PLVS for BWSC

- Bonneville intends to offer Peak Load Variance Service (PLVS) as an add-on service that will help cover some of the variation in load between the planned P50 peak load and planned P10 peak load for a customer.
- PLVS would only be available to customers that take the BWSC product with the Shaping Capacity that is calculated using a customer's Peak Net Requirements (PNR).
  - PLVS would not be available to customers electing the 10% Shaping Capacity option.
- Customers would make a one-time election to add PLVS to their BWSC product when electing the product or making a product change to BWSC.

PLVS - Additional Flexibility

Additional Capacity with an amount of Energy

- Additional Capacity. PLVS would provide a customer additional capacity at an embedded cost to help meet loads when they are in excess of their maximum shaping capacity amount in a month.
- Limited Energy Amount. Bonneville would establish an amount of energy that a customer can use above its monthly BWSC Maximum Hourly Energy amount throughout the year, until that specific energy amount is exhausted.
- Amount of Energy Available. Bonneville is proposing to base this energy amount on an expected average number of event hours a year and the greatest delta between a customer's forecasted P10 monthly PNR and P50 monthly PNR.

Sample PLVS Energy Amount Calculation

- Assumed Events = 3 events a year at 50 hours an event = 150 hours a year
- Highest P10 to P50 monthly PNR delta
  - December P10 PNR = 150 MW
  - December P50 PNR = 100 MW
- PVLS Energy Amount
  - 150 hours * (150 MW - 100 MW) = 7,500 MWhs

Activating PLVS Energy

Activating PLVS

- Loads will need to be significantly higher than normal to activate PLVS.
- BPA recognizes that there is significant uncertainty around predicting load excursion events. BPA must balance this uncertainty with a need to have adequate information to make its own operational plans to meet potential load excursion events.
- Initial PLVS Notification. BPA is proposing that customers provide an Initial PLVS Notification that they may take PLVS energy 7 days prior to potential deployment. BPA is proposing that the product would include an annual limit of 6 Initial PLVS Notifications.
- The customer will have 3 days to cancel the Initial PLVS Notification or it will count as a PLVS Event. BPA is proposing that the product would include an annual limit of 3 PLVS Events.

Use of PLVS Energy

Timing for a PLVS Event

- PLVS energy would be locked down Day-Ahead to align with the Shaping Capacity notification utilized for BWSC. Operationally for the duration of the PLVS Event it would look like a temporary increase in maximum hourly Shaping Capacity amount.

BWSC Rules Continue

- Use of a PLVS Event does not change the underlying rules around the BWSC product. For example, ramp rates would continue at 20% and first half of the month energy usage rules would continue.

PLVS Hourly Energy Limits

Hourly Energy Limit

- Customers would be able to use their amount of available energy to increase their Block energy delivery from Bonneville above the BWSC Maximum Energy Delivery limit.
- The total hourly energy would be limited to the P10 PNR.
- Example:

  - December Maximum Hourly Energy Delivery with BWSC = 100 MW/hr
  - December Maximum Hourly Energy Delivery with PLVS Activation = 150 MW/hr

PLVS Daily Energy Limit

Daily limit for Energy Use

- Bonneville may implement a daily limit on the amount of energy taken during a PLVS event.
- Conditions have not been defined. In this instance BPA would need to ensure that full PLVS energy amounts are available to the customer across the year.

PLVS and BWSC Monthly Energy Neutrality

- The BWSC product has been designed to remain Energy Neutral throughout the month. However, BPA recognizes that additional flexibility provided under PLVS, and the timing of load events, may make it difficult for customers to remain energy neutral.
- If a customer managed their BWSC take across the month so that it only took the established net requirements energy amount for the month there would be no additional charge for energy.
- The customer would simply have used the standard BWSC flexibilities with the higher PLVS capacity limit to reshape the expected block to better meet its load. Energy amounts taken above the hourly BWSC maximum would still be subtracted from the amount of PLVS energy available to that customer.

PLVS and BWSC Monthly Energy Neutrality (Cont)

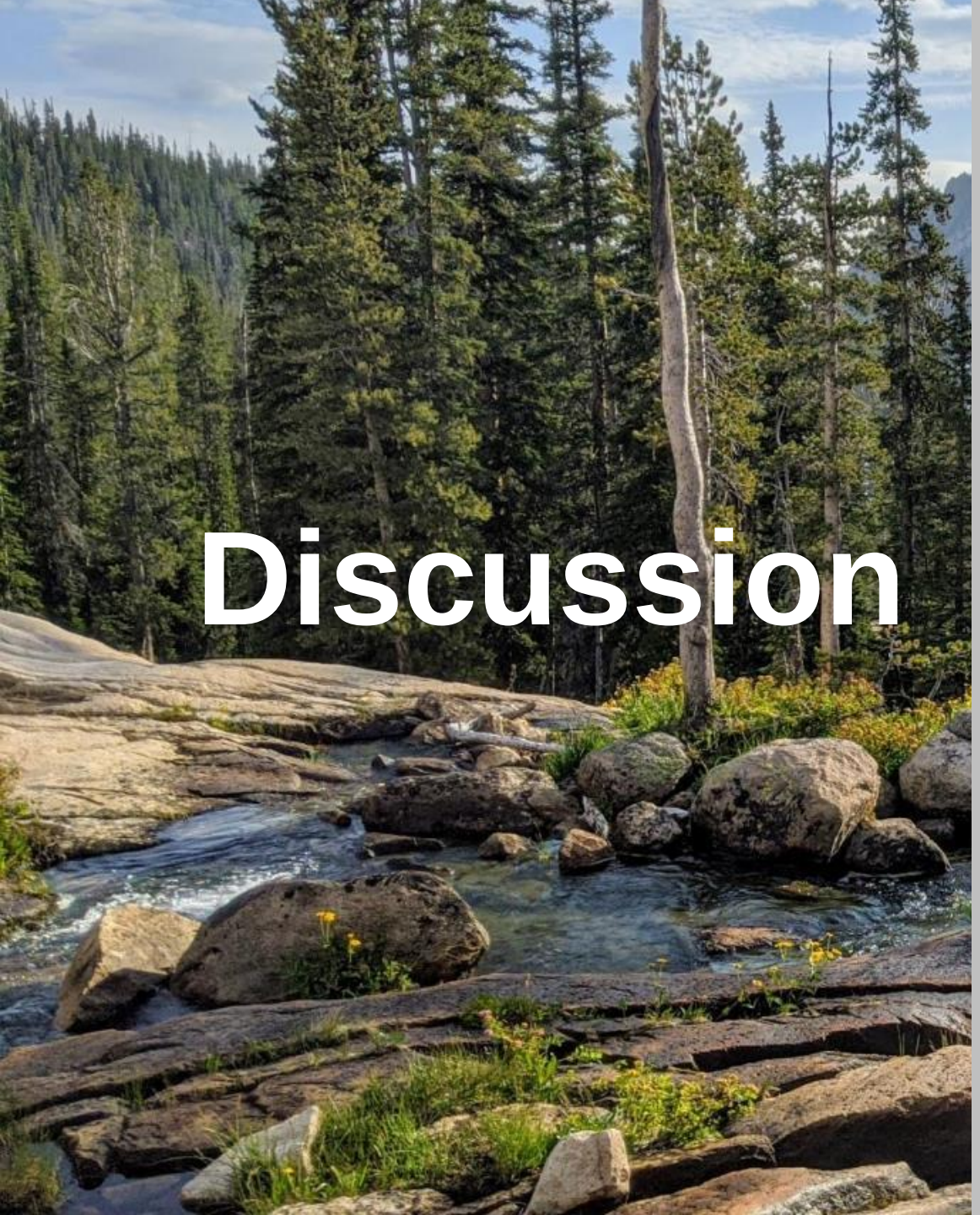
- If a customer exceeds their monthly block amount because of PLVS use, Bonneville will complete a true-up at the end of the month.
  - The additional energy would be charged the average market rate for the time-period the customer took the additional PLVS energy.
  - This does not apply to any additional energy taken unrelated to PLVS energy.

PLVS Design Elements

Feature	Details
Amount of Energy	An individualized amount of energy that can be used above the monthly BWSC Maximum Hourly Energy amount throughout the year, until the amount is exhausted.
Size of Amount of Energy	Available amount of energy based on average number of event hours a year and greatest delta between a customer's forecasted P10 monthly PNR and P50 monthly PNR. Amount of energy will be reduced if other limits are removed.
Activating PLVS	Loads will need to be significantly higher than anticipated to activate PLVS. Initial Notification with chance to withdraw before it becomes a PLVS Event. BPA is proposing annual limits of 6 Initial Notifications and PLVS Events.
Timing	Locked in Day-Ahead along with any other Shaping Capacity

PLVS Design Elements

Feature	Details
Additional Capacity	Provides additional capacity which increases hourly BWSC Maximum Energy Delivery limit during a PLVS Event. Total hourly amount would be limited to the P10 PNR.
Additional Energy	Within the rules for PLVS, gives the customer the option to take limited amounts of energy in excess of the established monthly block amount for an additional energy charge.
Daily Limit for Energy Use	Under Consideration.
BWSC Rules Continue	Use of a PLVS Event does not change the underlying rules around the BWSC product. For example, ramp rates would continue at 20% and first half of the month energy usage rules would continue.



Discussion

Reactions to design features and initial propose for PLVS service.

Bonneville is open to discussing aspects of the PLVS service design features.

Appendix

Block Product Options

Block Product Options
1. Flat Annual Block
2. Flat Monthly Block
3. Diurnally Shaped Block
4. Block with Shaping Capacity (BWSC) (add on to flat monthly block)
Different Options For Block with Shaping Capacity (BWSC)
A. BWSC with Base 10% Shaping Capacity
B. BWSC with PNR Shaping Capacity
C. BWSC with PNR Shaping Capacity + PLVS

*Any request to switch between any of the options above will be considered a product switch under Provider of Choice.