



**Bonneville's Public Engagement for Establishing a Policy Direction on
Potential Day Ahead Market (DAM) Participation - Workshop 4**
November 29, 2023

Libby Kirby, Market Initiatives Policy Lead
Andy Meyers, Market Initiatives Policy Lead
Matt Hayes, Stakeholder Engagement Lead
Russ Mantifel, Director of Market Initiatives



Agenda

- Discussion on 5b obligations/ Day-Ahead Market (DAM) compatibility
- Review of BPA's policy direction public process
- Considerations for BPA's DAM Business Case
- GHG Update and Consideration of GHG Business Case
- Next Steps
- Q&A and Closeout

Note: we will break for lunch during the review of the business case considerations



Discussion on 5b Obligations & DAM Compatibility



DAM Participation & Section 5(b) Compatibility

- BPA will continue to supply electric power to 5(b) customers with long-term contracts and plan FCRPS operations to meet preference customer loads.
- Like EIM and WRAP, BPA expects a day-ahead market could offer access to a greater portfolio of diverse resources from which to assure BPA's firm power customers receive an adequate, efficient, economical, and reliable power supply.
- A day-ahead market's must offer obligation or resource sufficiency obligation would require Bonneville to demonstrate that its resources and bilateral purchases are positioned to meet its load obligations.
- Bonneville would retain flexibility to make resource offers that would fall within the range of hydro operations compatible with other project purposes, including making surplus sales when surplus is available.

Responding to PPC's Lenses for DAM Evaluation

- In the latest round of comments from the Public Power Council, they laid out a series of three lenses for evaluating BPA potential participation in a DAM:
 - Firmness of power supply
 - Certainty of delivery
 - Environmental attributes
- The following slides represent BPA's initial response to the above three lenses for viewing potential BPA DAM participation

Firmness of Power Supply

“Customers currently have a high level of confidence that generation from the federal system will be available to serve their net load and that BPA will be able to deliver on its contractual agreements. Customers have this confidence based on a robust planning process conducted by BPA and funded through customers’ power rates. Today, when generation from the federal system is available, customers can be assured that serving their load will be the primary use of that generation.” – *PPC, Lenses for evaluating potential BPA DAM participation*

BPA Assessment of Firmness of Power Supply Lens

- As a WRAP participant, BPA will be subjected to the forward showing program where BPA will need to demonstrate that it has the capacity needed to serve its forecasted load:
 - BPA's forecasted load includes its preference customers, including transfer loads
 - BPA's Slice obligation is accounted for in this process through a resource reduction
 - Any contract sales are also included
- In a DAM, BPA will need to satisfy a must offer obligation or resource sufficiency evaluation to show that it is bringing enough capacity to meet its forecasted load for the DA horizon. In Markets+, this is based on the WRAP obligations described above.
- In a market, each entity has control over how much or little its resources can be increased or decreased (via submitted minimums and maximums).
 - Due to hydrologic constraints, environmental constraints, and non-power obligations, it is not feasible for the market to displace the majority of FCRPS output.

Certainty of Delivery

“Curtailments of BPA firm transmission are exceedingly rare, which offers customers a high level of certainty that generation purchased from BPA will be delivered to preference load. Firm transfer service also provides a fairly high level of confidence in federal deliveries.”

– *PPC, Lenses for evaluating potential BPA DAM participation*

BPA Assessment via Certainty of Delivery Lens

- OATT-based curtailment procedures will largely remain the same.
 - BPA can still use e-Tags with current NERC curtailment priority to schedule contract deliveries in advance of the market.
- The Market should, on balance, improve reliability of delivery to loads.
 - A market will proactively redispatch to ensure delivery to load, including those that are self-scheduled.
- Market redispatch should be more effective at addressing congestion than traditional curtailment protocols.
 - The market operator will find the most economic/efficient redispatch to solve congestion rather than doing a variation of the status quo: ~10:1 pro rata curtailment and each BA having to find replacement power that might still end up affecting the overloaded flowgate.

Environmental Attributes

“BPA’s generating portfolio is dominated by hydro and augmented with nuclear generation and limited purchases from unspecified resources. This results in a federal base system with very low carbon content. Today it is clear that these attributes are associated with BPA’s power products and that BPA’s customers can claim these attributes for the portion of their power supply coming from BPA.” – *PPC, Lenses for evaluating potential BPA DAM participation*

BPA Assessment via Environmental Attributes Lens

- The details of the GHG accounting for each market and how they will interact with state programs is still under development, but maintaining the environmental attributes of the FCRPS is a core principle of BPA in its evaluation of DAMs.
- There has been voiced concern about a market dispatching fossil fuel resources instead of FCRPS hydro (decreasing hydro). The amount of unspecified imports will be managed via Bonneville's marketing strategy to the extent possible given hydrological constraints.
- There may be a potential difference in how WA and non-WA customers see carbon content in their power, given WA's pricing program and other states not having a pricing program.
 - BPA will continue to work with market and state entities and customers to appropriately reflect environmental attributes



Review of BPA's Policy Direction Public Process



How This Process Relates to a Decision

- This process will conclude with a policy direction on BPA DAM participation and which market BPA may focus efforts on.
- BPA's subsequent decision process (if applicable) would include:
 - A Rate Case
 - A Tariff Case
 - Close coordination with the POC product and contract development efforts

How This Process Relates to a Decision

DAM Policy Direction Process

- Series of workshops to explore initial viability of DAM participation for BPA as well as an evaluation of DAM options in the west
- Process output: a policy direction that states if BPA intends to pursue a DAM and if so which market BPA will focus effort on.
- If BPA's policy direction indicates it is intending to pursue DAM participation, this will then feed into a DAM Decision process.

DAM Decision Process

- Would begin following the policy direction if BPA indicates an intent to pursue DAM participation.
- Would consist of a series of public workshops, where issues with market participation and its impact on BPA, its customers, and its constituents are explored and evaluated in a transparent manner.
- Would tie into both a rate and tariff case.
- Process output: a BPA decision on whether to join the market.



Considerations for BPA's Day-Ahead Market Business Case



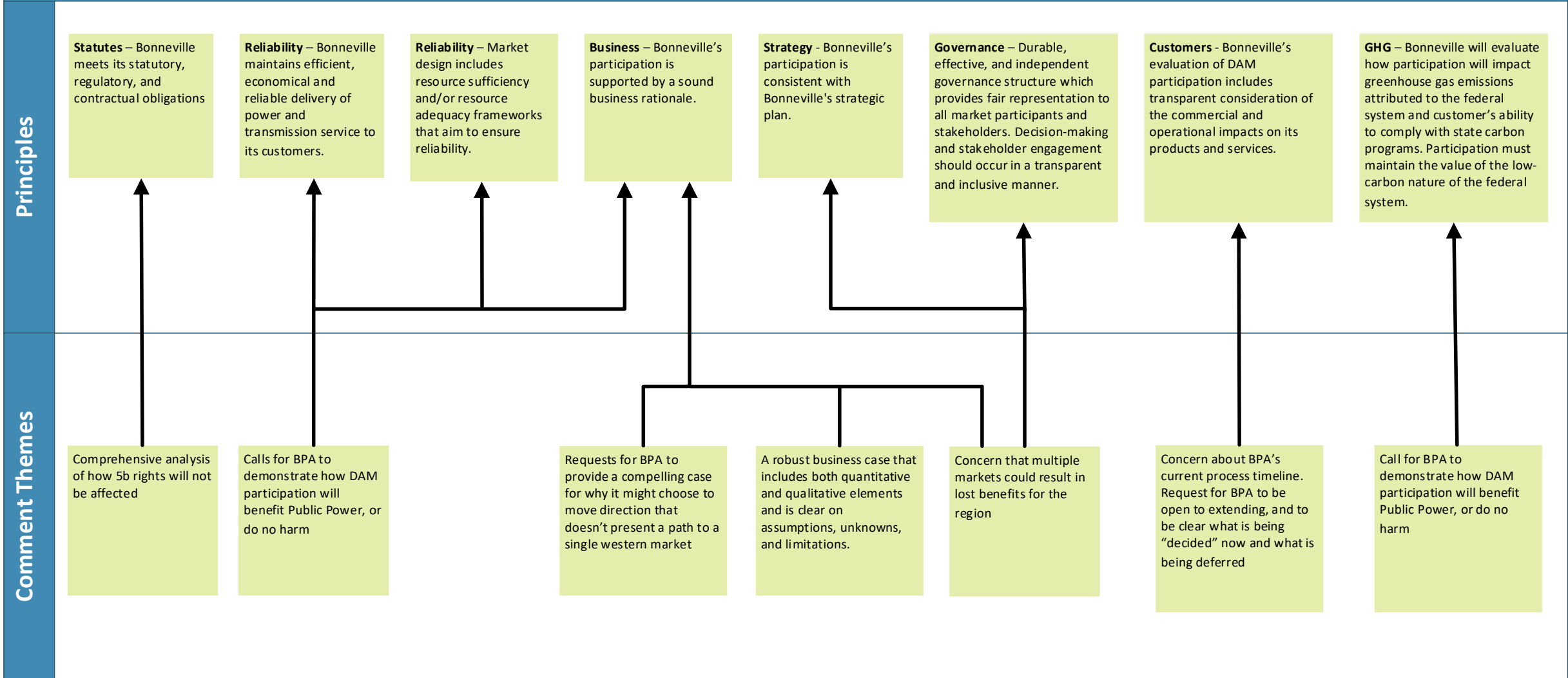
Evaluation of DAM Business Case Considerations

- Today's review of business case considerations represents BPA's current position in our DAM evaluation.
 - Our evaluation is based on the best available information to date and will remain flexible to adjust as new information becomes available or current information changes
- BPA will continue to evaluate the evolving factors over the next several months while establishing a policy direction.
 - Including providing greater clarity as to how these factors, in each market, are expected to impact BPA

Overview of BPA's Policy Catalog Regarding DAM Participation Evaluation

- BPA committed to providing the following reviews for the November workshop:
 - How both DAM options in the west compare when examined via our business case considerations
 - The primary issues we are currently tracking in our DAM evaluation
- The following tracking of customer comments and business case considerations evaluation accomplishes both these goals:
 - Together, both provide an overview of the primary areas of interest of BPA and what we have received via public comment
 - These will be the areas of focus through the remainder of this policy direction process as well as into any subsequent decision process if applicable.
- The timeline for each of these items is yet to be determined, and it should be expected that some of these items will be evaluated prior to BPA issuing its policy direction and others will be explored or further explored during a subsequent decision process.

Cross Walk of Public Comment Themes and BPA DAM Evaluation Principles



DAM Evaluation Business Case Considerations

Considerations	Associated Principles/ Criteria
Roles and Responsibilities	Business/Customer Evaluation Criteria
Key Areas of Similarity	Business/Customer Evaluation Criteria
Governance	Governance
Ancillary Services	Reliability
Transmission Requirements	Customer Evaluation Criteria
Transmission Scheduling	Customer Evaluation Criteria
Transmission Revenue Recovery	Business Evaluation Criteria
Congestion Rent	Business Evaluation Criteria
Reliability Considerations	Reliability
Settlements	Business/Customer Evaluation Criteria
Resource Adequacy	Reliability
Resource Sufficiency	Reliability
Flexible Products – Procurement and Compensation	Business Evaluation Criteria/ Reliability
Market Power Mitigation	Business Evaluation Criteria/ Reliability
Energy Imbalance Market	Business Evaluation Criteria/ Reliability
Greenhouse Gas Design	Business Evaluation Criteria/ Environmental

DAM Participation and Roles/Responsibilities

Role	Responsibility
Market Operator (MO) for DAM	<ul style="list-style-type: none">• CAISO for CAISO EDAM• SPP for SPP Markets+• Under both DAMs<ul style="list-style-type: none">• The MO will operate a DAM across its footprint with multiple TSPs and BAs.
Market Participant for DAM	<ul style="list-style-type: none">• Balancing Authority (BA)• Load Responsible Entity / Load Serving Entity in DAM BA• Under both DAMs<ul style="list-style-type: none">• Each BA, TSP and TOP will continue to maintain their own respective tariff, rates, and reliability responsibilities.

TAKEAWAY: The DAM does not take on the role of the BA. Ultimately, BPA will still have the same BA responsibilities it has today.

Key Areas of Similarity for EDAM and M+

- BAA and NERC reliability responsibilities remain unchanged
- TSPs will maintain their own Tariff, business practices and rates as they do today
- Real-Time Balancing Market
- Day-Ahead unit commitment with financially binding day-ahead schedules
- Nodal pricing model (marginal energy, losses and congestion) with GHG adders for carbon pricing programs
- Flexible resource participation model (the ability to aggregate electrically similar resources)

Governance

- Criteria linkage: Governance

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> Support from Customers / Constituents Support from State PUCs 	<ul style="list-style-type: none"> Stakeholder initiatives are staff-driven and conducted through public process Body of State Regulators(BOSR) and Regional Issues Forum(RIF) provide state and sector input. Joint Authority model with the EIM Governing Body and CAISO Board CAISO Board appointed by California Governor CAISO must design transmission and scheduling practices to align with California policies for reliability and native load 	<ul style="list-style-type: none"> Stakeholder led work groups/tasks forces for DAM development Participant and stakeholder led governing body (MPEC) Checks and balances within WG/TFs, MPEC, IMIP, and M+ State Committee (MSC) Independent SPP board of directors provides oversight.

Governance – Potential Impacts

- Potential Impacts if BPA Joins EDAM:
 - Joint authority governance model provides mechanism to air and reconcile out-of-state interests; ultimate authority remains with CAISO board
 - Non-California entities do not have equitable representation in the selection of the CAISO Board and its priorities
- Potential Impacts if BPA Joins Markets+:
 - Sector-based policy development so participant-driven framework
 - Requires substantially more staff and executive time to engage in decision development

Ancillary Services

- Criteria linkage: Reliability

Consideration	CAISO EDAM and SPP M+
<ul style="list-style-type: none"> • Ancillary Services 	<ul style="list-style-type: none"> • BA and TOP NERC / WECC responsibilities remain with the BA/TOP • Procurement of ancillary services remains the BA's responsibility. • Market Participants to provide an advisory reporting of contingency reserves to the MO. <ul style="list-style-type: none"> • MO will need to know the capacity set aside for contingency reserves that is unavailable for dispatch.

Ancillary Services – Potential Impacts

- Potential Impacts if BPA Joins a DAM:
 - Ultimately still the BA responsibility.
 - May need to evaluate ACS products under a DAM.

General Transmission Considerations

- Update Coordinated Transmission Agreement between CAISO and BPA
 - Necessary for all outcomes of BPA's public process for DAM participation
- Develop a Seams Agreement between SPP and BPA
 - Necessary for all outcomes of BPA's public process for DAM participation
- Evaluate and mitigate potential transmission revenue impacts
- Reliability
 - The DAM does not take on the role of the BA
 - Larger footprint should help with variable resource integration
 - Potential for two Reliability Coordinator Services and two Market Operators in the West requiring more coordination

Transmission Requirement

- Criteria linkage: Customers

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Effective Use of the Transmission System 	<ul style="list-style-type: none"> • All EESC transmission is “all in” unless opted out • Interchange transmission is made available by three “buckets” 1) Self-Schedule, 2) transmission customer releasing its rights to the market, and 3) all unsold ATC is made available to the market. 	<ul style="list-style-type: none"> • Market Participant’s transmission is “all in” unless opted out • Unsold transmission from the TSP and unscheduled transmission from the transmission customer or MP is considered available for M+ use

Transmission Requirement – Potential Impact

- Potential Impacts if BPA Joins a DAM:
 - The BPA Tariff and Business Practices will need to incorporate changes that allow a DAM to function (commercially and operationally) within its footprint.
 - BPA will continue to maintain its own Tariff, Business Practices and Rates.
 - BPA will continue to sell transmission products it offers to date.
 - Transmission customers retain the rights to submit a balanced self-schedule.
- Regardless if BPA joins a DAM:
 - BPA will have transmission customers that may wish to use their BPA transmission rights in DAMs.
 - BPA will continue to maintain its Tariff, Business Practices, and Rates.

Transmission Scheduling

- Criteria linkage: Customers

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Effective Use of the Transmission System 	<ul style="list-style-type: none"> • Imports, exports, and wheel-through across EDAM footprint are required to be scheduled • Customers can self-schedule generation and transmission • During the DAM clearing process, pausing processing TSRs for the day ahead sales is up to the TSP's discretion 	<ul style="list-style-type: none"> • Imports, exports, and wheel-through across M+ footprint are required to be scheduled • Customers can self-schedule generation and transmission • During the DAM clearing process (10am – 1:30pm PPT), the TSP will pause processing TSRs for day ahead sales only

Transmission Scheduling – Potential Impacts

- Potential Impacts if BPA Joins a DAM:
 - The BPA Business Practices will need to be updated to conform to DAM timelines.
 - DAM timelines will not align to the WECC Preschedule Calendar.

Transmission Revenue Recovery

- Criteria linkage: Business

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> Transmission Cost Shifts 	<ul style="list-style-type: none"> The CAISO will assess an EDAM transmission access charge (TAC) to recover the eligible revenue shortfalls of one EDAM balancing area to the other EDAM balancing areas. EDAM TAC to compensate TSPs for losses resulting from transitioning from bilateral transmission service to day-ahead market service. 	<ul style="list-style-type: none"> M+ Market Transmission Use (MTU) charge to compensate TSPs for loss of STF and NF revenues from DAM participation. M+ MTU rate will be charged to all market activity, load, generation and imports/exports.

Transmission Revenue Recovery – Potential Impacts

- Potential Impacts if BPA Joins a DAM:
 - BPA will continue to recover all costs.
 - Market participation should result in net secondary revenue credits.
 - Monitoring cost shifts and/or upward rates pressure.
 - Wheeling lost revenue and cost shift from PTP to NT.
 - Both EDAM's TAC and M+'s MTU charges are intended to mitigate risks over time, including reduction of sales associated with:
 - Hourly, daily, weekly, monthly firm point-to-point
 - Hourly, daily, weekly, monthly non-firm point-to-point
 - Wheeling revenue

Congestion Rent

- Criteria linkage: Business

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> Transmission Products and Services 	<ul style="list-style-type: none"> Tariff determines how “inertie” congestion revenue is handled (according to “buckets” described above) Similar to how EIM allocates congestion revenue today, it’s up to each EDAM Entity to determine how to allocate congestion revenue within their own tariff. Leads to potential differences in congestion revenue allocation treatment across EDAM Entities and the CAISO BAA 	<ul style="list-style-type: none"> Common distribution method for all binding transmission constraints in DAM <ul style="list-style-type: none"> NT: Eligibility is tied to a customer’s monthly MW cap, which is determined by the TSP billing methodology (monthly coincidental peak for BPA). Market Operator will utilize customer source to sink paths from DNRs to NT load, leveraging a merit order stack of lowest to highest cost supply, up to the monthly cap. PTP: Eligible TSRs include firm reservations of a month or longer, CF transmission, and resales or redirects of eligible transmission. The redirect or resale is allocated to the new path/new owner if the transaction occurs prior to the monthly snapshot (currently 15 days prior to the start of the month) Excess congestion rent will be distributed to transmission customers, per the TSP OATT.

Congestion Rent – Potential Impacts

- **Potential Impacts if BPA Joins EDAM:**
 - Gives TSP more autonomy to assess the needs of their customers and manage exposure to congestion rent
 - Easier to change congestion rent allocation given individual TSP tariff
- **Potential Impacts if BPA Joins Markets+:**
 - Consistent allocation methodology of congestion rent across the M+ footprint
 - Design leverages OATT framework and aims for equity between PTP and NT customers

Reliability Considerations

EDAM Impacts to BPA

- CAISO has experience with BPA's flow-based paths
- Incremental enhancement to existing systems
- Resource adequacy mismatch between CA RA requirements and WRAP
- Reliance on Resource Sufficiency Evaluation
- Transfers from CAISO footprint to EDAM BAAs are curtailed based on CAISO's tariff

M+ Impacts to BPA

- SPP is learning about BPA's flow-based paths
- Learning about SPP systems and tools (focus for M+ Phase 2)
- Reliance on must offer requirement for DA and RT, requirement to be member of WRAP

Settlements

- Criteria linkage: Business/Customer Evaluation Criteria

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Settlements 	<ul style="list-style-type: none"> • CAISO settles with EESC on some items (e.g. interchange, congestion rent) and PRSC on DA generation • Overall settlements window is 24 months, includes recalcs/reruns (4 months) 	<ul style="list-style-type: none"> • SPP settles directly with Market Participant • Overall settlement window is 4 months, includes recalcs/reruns (2 months)

Resource Adequacy

- Criteria linkage: Reliability

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Resource Adequacy 	<ul style="list-style-type: none"> • EDAM does not require RA program participation; relies solely on Resource Sufficiency evaluation 	<ul style="list-style-type: none"> • Participation in WRAP is a prerequisite for M+ participation • Ensures all market participants have the same metrics for Resource Adequacy

Resource Sufficiency

- Criteria linkage: Reliability

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Resource Sufficiency 	<ul style="list-style-type: none"> • EDAM Resource Sufficiency (RS) Evaluation assesses if BA generation capacity and energy is sufficient to meet forecast demand • Enforced through penalties and restricted market access if found insufficient 	<ul style="list-style-type: none"> • Must offer requirement for both DA and RT to discourage leaning amongst Market Participants and ensures LREs bring sufficient resources to meet load • Enforced through financial penalties if found insufficient for both the DA and RT must offer requirement • Integrated into WRAP requirements

Flexible Products – Procurement and Compensation

- Criteria linkage: Business/Reliability

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Flexible Products – Procurement and Compensation 	<ul style="list-style-type: none"> • Two new products in DAM <ul style="list-style-type: none"> • Imbalance Reserve Product (IRP) • Reliability Capacity • IRP is biddable <ul style="list-style-type: none"> • Up and down, with price caps • CAISO influences procurement quantity based on expected price and other factors 	<ul style="list-style-type: none"> • Non-biddable (MO to assign a MW quantity for each MP) Flexibility Products <ul style="list-style-type: none"> • ST Flexibility Reserve Up/Down (10-min product) • Mid-Term Flexibility Reserve Up-Only (1-hour product) • Boilerplate design from SPP WEIS and SPP RTO East • Potential additional products to be considered in Phase 2

Market Power Mitigation

- Criteria linkage: Business/Reliability

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Market Power Mitigation 	<ul style="list-style-type: none"> • EDAM, pivotal supplier test with Hydro Default Energy Bid (DEB) • Market power is assumed (without conduct and impact test) • Considering BAA-level market power mitigation 	<ul style="list-style-type: none"> • Conduct and Impact Test, with pivotal supplier component (still determining BAA vs BAA with a transmission assessment for “zonal”) • Ongoing discussions in MDWG regarding market power mitigation framework • Market Monitoring Unit (MMU) has proposed alternatives to adopting CAISO’s Hydro DEB which still recognize storage horizons for hydro resources

Energy Imbalance Market

- Criteria linkage: Business/Reliability

Consideration	CAISO EDAM	SPP M+
<ul style="list-style-type: none"> • Energy Imbalance Market 	<ul style="list-style-type: none"> • Western Energy Imbalance Market (WEIM) • WEIM has Resource Sufficiency Tests based on hourly submissions • Includes both 15- and 5-minute markets 	<ul style="list-style-type: none"> • M+ will have a Real-Time Balancing Market (RTBM) • Leveraging the framework used in SPP's other markets • RTBM will have a RT must offer quantity based on day-ahead awards • 5-minute market only



GHG Update and Consideration of GHG Business Case



Greenhouse Gas Design

- Market design for GHG accounting is driven by state GHG emission reduction programs.
- GHG reporting and compliance obligations, under state programs for today's bilateral markets, are based on e-tags and contracts.
- Carbon Pricing Programs (e.g. Washington's cap-and-invest program and California's cap-and-trade program)
 - Current market design for both Markets+ and CAISO provide for solutions for states with carbon pricing programs.
 - The market assigns specific resources to load in the state (often referred to as "deeming" or "attributing").
 - A "GHG Adder" is added to the bid price of an emitting resource, moving the location of that resource up the "stack" of dispatchable resources in the market optimization when considering delivery of that resource to the GHG pricing zone.
- Non-Pricing Programs (e.g., emission reduction programs like those in Oregon or Colorado), clean energy standards, or other GHG reporting requirements
 - Neither market currently offers a market solution for states with non-pricing programs
 - This means there is no market assignment of a specific resource to load.

Greenhouse Gas Design

- Carbon pricing programs
 - These programs regulate in-state generation and electricity imported into the state. There is a cost assigned to emissions attributed to in-state and imported electricity.
 - Market design attributes specific resources and associated emissions for serving load in the state.
 - Resources located in the state or willing to be attributed to the state include a GHG adder to reflect the cost of compliance (i.e., resource-specific emission factor multiplied by forecasted allowance price)
 - The optimization will seek out the most economical market solution considering GHG adder for load in the GHG zone.
 - The market optimization will attribute specific resources to load in the state.
 - GHG adder is not considered in the optimization for generation not deemed to the GHG zone.

Greenhouse Gas Design

- Non-Pricing Programs
 - No current market solution. Both markets have indicated willingness to explore options in the future. Development of such a solution will be a novel concept.
 - May be out-of-market solutions for resource specification for GHG reporting and compliance under their programs. The market may not make a specific attribution, but states could still recognize contracts as the basis for utility resource and emission reporting.
 - Market design for GHG pricing programs can impact/recognize some of the contractual commitments that may form the basis for non-pricing program reporting.

Greenhouse Gas Design

Market Design Element	CAISO EDAM	SPP M+ (Based on approved conceptual design, still in progress)	Notable differences for BPA?
<p>Pathway for contractually committed resources to be attributed to load in a GHG zone?</p> <p><i>Note: Washington’s Climate Commitment Act considers the federal system to be an import to the state (as opposed to in-state generation)</i></p>	<p>Yes</p> <p>There is a pathway for contracted (committed) resources. They can be attributed to the GHG area if economical and are excluded from the baseline.</p> <p>CAISO would need to be informed of the contract and set a MW quantity. Implementation would need to be considered for contracts that are for a dynamic MW quantity.</p>	<p>Yes</p> <p>Type 1A – resources considered internal to the GHG zone and can only be attributed to a GHG zone (being debated)</p> <p>Type 1B – resources external to the GHG zone that can be attributed to GHG zone if economical</p>	<p>Not clear at this time as design for M+ has not been finalized and implementation details for either market have not been discussed.</p>

Greenhouse Gas Design

Market Design Element	CAISO EDAM	SPP M+ (Based on approved conceptual design, still in progress)	Notable differences for BPA?
<p>Method for determining amounts available to meet load in GHG area?</p> <p>(In other words, how much of a resource can the market attribute?)</p>	<p>Model determines amounts based on what is surplus to the entire footprint external to GHG area.</p> <p>A baseline (counterfactual) is run for all loads and resources outside the GHG area. Only resource amounts that weren't dispatched in the counterfactual can be attributed.</p>	<p>Entity specific determination</p> <p>Step 1: Resource operator determines amounts available for their resource(s): Type 1A/B (contractually obligated), Type 2 (surplus)</p> <p>Step 2: Threshold run. Optimizes the potential dispatch with the limitation that amounts selected for the GHG zone can only be from above the entity's threshold load obligations on Type 2 resources. (being debated)</p>	<p>M+ is an entity level look at what amounts are contractually committed or surplus. It affords more flexibility for the resource operator to determine amounts that can be attributed.</p> <p>The "threshold" step for M+ offers a market-based solution for managing what resource amounts can be attributed to the GHG area.</p>

Greenhouse Gas Design

Market Design Element	CAISO EDAM	SPP M+ (Based on approved conceptual design, still in progress)	Notable differences for BPA?
<p>Method for optimizing and determining which resources are attributed to state?</p> <p>(In other words, out of the identified resource amounts available, how much is the model actually attributing to the state?)</p>	<p>Floating Surplus</p> <p>Optimization can attribute any resource amounts identified per previous slide in the counterfactual, at any point in the resource dispatch.</p>	<p>Threshold + Floating Surplus</p> <p>Floating Surplus: A second run – the actual optimization - is done.</p> <p>Optimization can attribute any resource amounts identified per the threshold run at any point in the resource dispatch.</p>	<p>Essentially the same.</p>

Greenhouse Gas Design

Market Design Element	CAISO EDAM	SPP M+ (Based on approved conceptual design, still in progress)	Notable differences for BPA?
Additional limitations to address emissions leakage?	Under contractual framework, the BAA can attribute resources to the GHG area, regardless of if the BAA is a net importer or exporter.	The first run (threshold run) is intended to limit leakage.	The CAISO’s BAA limitation is outside of BPA’s control as well as any participating non-federal resources in BPA’s BAA.
Unspecified Pathway	No. A specific resource will always be attributed. If there are reliability issues, GHG constraints will be lifted to make more specified resources available for attribution.	Yes. Unspecified amounts can be attributed if economical or due to lack of available specified amounts.	It is unclear what happens in EDAM in the event there is a lack of available specified resources.



Q&A and Closeout



Next Steps

- Continue to receive, review, and consider public comments and issues of importance to external entities
- Continue to further evaluate BPA's business case considerations and develop DAM business case
- The next workshop (currently scheduled for 1/10/24) will primarily focus on responding to public comments.

Wrap Up

- Please submit comments on this workshop by January 5th
- The next public workshop will be January 10th
- Please send to techforum@bpa.gov (with “DAM Participation Evaluation” in the subject heading)
 - All formal feedback received will be posted to the BPA.gov page for BPA’s DAM Participation Evaluation