



Bonneville's Public Engagement for Establishing a Policy Direction on Potential Day Ahead Market Participation

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Agenda

- Why are we exploring Day-Ahead Market (DAM) participation?
- Overview of public engagement for establishing a BPA policy direction on potential DAM participation
- Discussion on Drafting BPA DAM Evaluation Principles
- Overview of Day Ahead Markets

Why Are We Exploring Day- Ahead Market (DAM) Participation?

Why DAMs?

General benefits of DAMs include:

- Economic dispatch/commitment of bid-in resources
- Potential for compensation for flexible capability
- Diversity benefit – larger pool of resources/loads
- More efficient integration of variable energy resources
- More efficient use of existing transmission
- Coordinated management of uncertainty and operations

DAM Options in the West

- Extended Day Ahead Market
 - California Independent System Operator's (CAISO) DAM
 - Expected to file its initial tariff with FERC in August 2023
- Markets+
 - Southwestern Power Pool's (SPP) DAM option for the Western interconnection
 - Expects to file its initial tariff with FERC in February 2024

Why Now?

- With the Majority of the West moving to join a DAM, these markets will impact almost every aspect of BPA's business, regardless of BPA's participation.
 - Market availability for balancing purchases & surplus sales: If most of the West is participating in a DAM, Bilateral liquidity from the day ahead timeframe is expected to significantly decrease
 - Transmission availability will be driven by the DAM(s)
- The designs of the two DAM options in the west are moving very quickly
 - Both DAM options expect to file initial tariffs with FERC over the next eight months
 - EDAM expected filing in August 2023 and Markets+ in February 2024
 - Bonneville's engagement needs to match this pace to ensure BPA can influence the development and implementation of these markets

Public Engagement Overview for BPA's Potential DAM Participation

Goals for This Engagement

- Provide regional education regarding DAM and Bonneville's potential participation.
- Provide ample opportunity for public input into Bonneville's evaluation.
 - BPA is seeking both formal feedback and discussion within the workshops on issues related to BPA's potential participation in a DAM.
- Right-size engagement intensity, ensuring sufficient information and involvement while recognizing additional significant BPA public processes in flight.
- Complete the engagement within a timeline that ensures BPA continues to be at the forefront of DAM development.

Update on Areas of Focus Identified To Date

When BPA met with public power customers last week to discuss this engagement, two major areas of interest were:

- Consistency of 5b public power rights with a DAM
 - BPA has been working with PPC and other customer groups to define how 5b rights will be not be affected in a DAM.
 - The consistency of 5b rights with a DAM will be a topic for discussion and feedback at the September public workshop
- BPA's approach for a developing a business case as to why Bonneville is establishing its direction
 - This business case will cover both of BPA's business lines (Power and Transmission) and may primarily focus on potential qualitative benefits from DAM participation
 - To the extent possible, BPA will rely on industry-standard analysis in determining whether to join a DAM
 - In contrast to the EIM cost benefit analysis, Bonneville anticipates that DAM benefits will be broader and less focused on Power Services' Net Secondary Revenue
 - Business case drafting will commence in Q4 of FY2023.
 - Bonneville will coordinate through this public engagement on this business case to ensure it adequately addresses raised concerns and has broad support.

Engagement End Product

- This engagement's end product will be Bonneville's policy direction regarding potential DAM participation.
- This policy direction will include:
 - An indication as to whether Bonneville intends to pursue joining a DAM
 - A high-level business case as to why Bonneville is establishing this direction
 - If Bonneville intends to pursue DAM participation, this direction will also include an indication of which DAM BPA intends to pursue joining

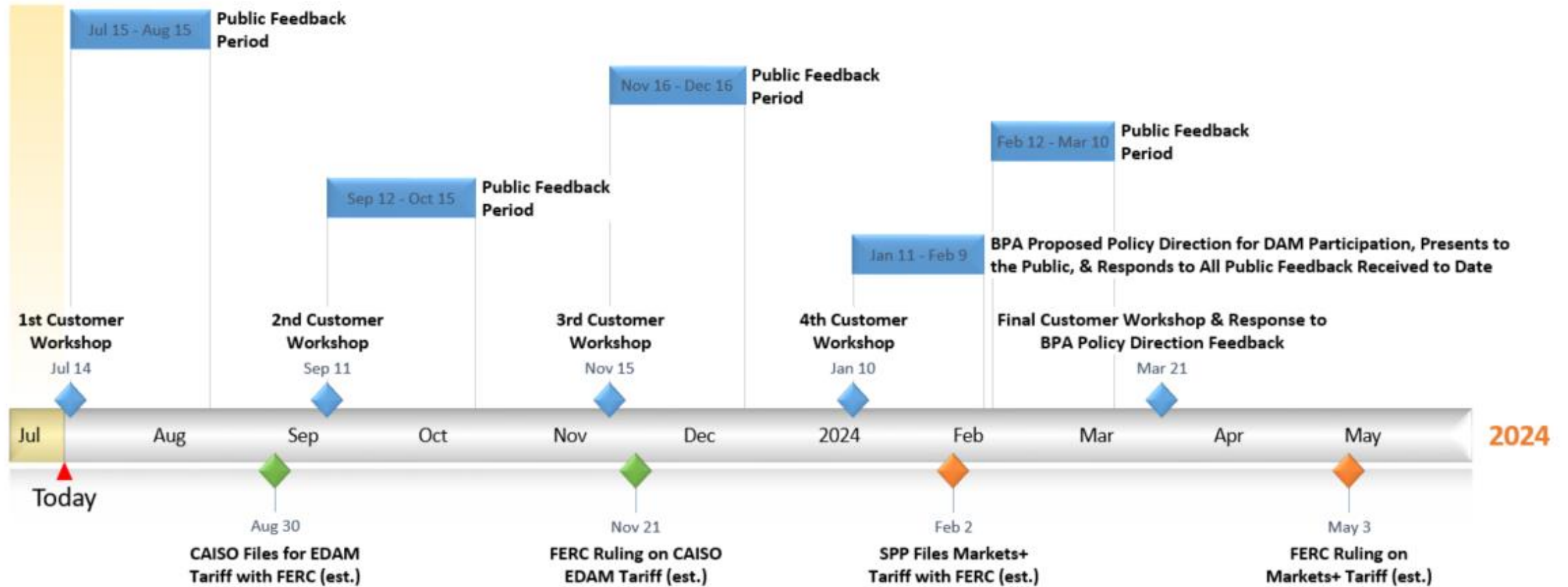
Engagement Details

- This engagement is scheduled to run from July 2023 through early 2024.
- Bonneville will conduct at least five public workshops and solicit formal public feedback between each workshop.
 - Bonneville will address all formal public feedback received when it issues its policy direction.
- Bonneville anticipates issuing its policy direction in the first quarter of calendar year 2024

Engagement Outline

- The format of these public workshops will mirror the six step engagement process that BPA uses for Rates and Tariff workshops.
 - 1: Introduction and Education
 - 2: Description of the Opportunity
 - 3: Analyze the Opportunity
 - 4: Discuss Alternatives
 - 5: Discuss Feedback
 - 6: Staff Proposal
- BPA will adjust its meeting outline as needed to respond to developments in the design or regulatory approval of the two DAMs as well as public needs and feedback.

Timeline for Public Engagement



Note: Dates are based of calendar year

◆ BPA Activities

◆ CAISO Activities

◆ Markets+ Activities

Proposed Workshop Schedule

- This Public Engagement is intended to be an open and evolving dialogue between Bonneville and the public on BPA's evaluation of Day Ahead Market (DAM) participation.
- The following schedule should be viewed as BPA's initial proposal. This schedule will adjust as needed to meet changing priorities for discussion in response to workshops and feedback received during this engagement.

Proposed Workshop Schedule

- Workshop 1 - July 14, 2023
 - Introduction and Education / Description of the Opportunity (Steps 1 & 2)
 - Why are we exploring Day-Ahead Market (DAM) participation?
 - Overview of public engagement for establishing a BPA policy direction on potential DAM participation
 - Discussion on Drafting BPA DAM Evaluation Principles
 - Overview of Day Ahead Markets

Proposed Workshop Schedule

- Workshop 2 - September 11 and 12, 2023
 - Discussion and feedback on the consistency of 5b rights with a DAM
 - Description of the opportunity (Step 2)
 - Overview of additional developments in either DAM
 - Analyze the Opportunity (Step 3)
 - BPA will present its first draft of its DAM evaluation principles for discussion and formal feedback

Proposed Workshop Schedule

- Workshop 3 - November 15, 2023
 - Discuss Alternatives (Step 4)
 - Provide a comparative analysis of the two DAMs (EDAM and Markets+) from a perspective of how they have advantages or disadvantages for Bonneville and its customers/constituents.
 - Overview of BPA's policy catalog regarding DAM Participation Evaluation
 - What issues is BPA exploring ahead of finalizing its policy direction and what work needs to be done in future steps of market exploration

Proposed Workshop Schedule

- Workshop 4 - January 10, 2024
 - Discuss Customer Feedback (Step 5)
 - Walk through feedback received during the public engagement, responding to major themes and other areas as deemed appropriate/warranted ahead of BPA releasing its policy direction and the formal written responses to received feedback.

Proposed Workshop Schedule

- Workshop 5 - March 21, 2024
 - Staff Proposal (Step 6)
 - Present BPA's released policy direction
 - Overview of responses to feedback received following the release of BPA's policy direction (BPA will also post written responses to received feedback)

Discussion on Drafting BPA DAM Evaluation Principles

Drafting of DAM Evaluation Principles

- The following slide includes BPA's decision principles from the EIM and WRAP decisions and the proposed DAM participation principles that BPA has received from customer/constituent groups
- This slide will be the starting point for BPA drafting its first version of DAM evaluation principles, which will be presented for discussion and formal feedback at the September public workshop
- For today's workshop, BPA is seeking responses to the following two questions as they relate to the example principles on the next slide.
 - What unique elements for DAM participation should be included in BPA's principles that may have not been captured in its principles for EIM/WRAP?
 - What granularity should BPA be aiming for in these principles?
- BPA will also seek formal feedback on its first draft of DAM principles following the September workshop

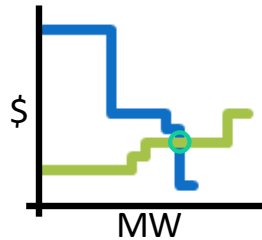
Starting Point for Drafting DAM Evaluation Principles

- BPA is proposing to use the following principles to help start the drafting of DAM participation principles
- WRAP/EIM principles
 - STATUTES: BPA's participation is consistent with its statutory, regulatory and contractual obligations.
 - RELIABILITY: BPA will maintain reliable delivery of power and transmission to its customers.
 - BUSINESS: BPA's participation is consistent with a sound business rationale.
 - STRATEGY: Bonneville's participation is consistent with the objectives of Bonneville's Strategic Plan.
 - CUSTOMERS: BPA's evaluation of EIM participation includes transparent consideration of the commercial and operational impacts on its products and services.
 - VOLUNTARY (used in EIM but not WRAP): BPA's participation is discretionary, and BPA retains its ability to effectively exit the market in the event participation is no longer consistent with these principles.
- PNGC/NRU/PGP/WPAG Proposed Day Ahead Market Participation Principles
 - MARKET DESIGN: Transparent Price Formation Results in Fair Compensation for Services
 - STATUTES: Respects Existing Laws, Statutory Obligations, Regulations, and Local Regulatory Authorities
 - GOVERNANCE: Independent Governance Informed by an Open, Transparent and Representative Stakeholder Process
 - RELIABILITY: Resource Adequacy and Resource Sufficiency Requirements Promote Reliability, Ensure Equity and are Applied Consistently
 - MARKET DESIGN: Transmission Framework Honors Open Access Principles and Minimize Cost Shifts
 - MARKET DESIGN: Market Power Mitigation is Appropriately Applied and Recognizes the Unique Situation of Hydropower Systems
 - MARKET DESIGN: Greenhouse Gas Accounting Accurately Accounts for GHG Attributes of Resources

Overview of Day Ahead Markets

What is a Day Ahead Market?

Footprint-wide Security Constrained Unit Commitment/Economic Dispatch (SCUC/SCED) performed day-ahead at hourly granularity

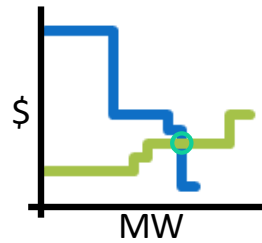


....But what does that mean?

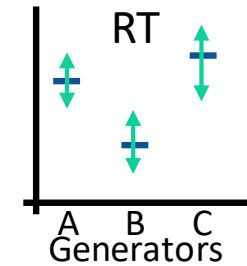
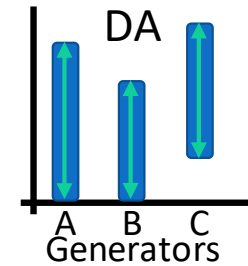
Finds the most economical solution of generation commitment/output to serve load across the footprint each hour of the day, while respecting system/operational limits

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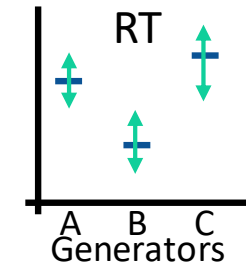
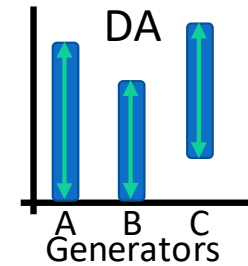
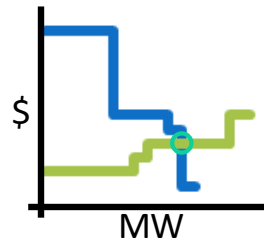
Larger volume than real-time markets; commits units and sets expected output to serve all load, rather than just incremental to expected output



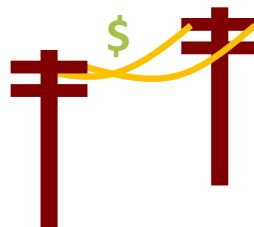
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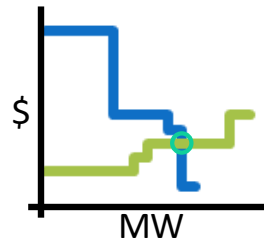


Larger utilization of transmission system than real-time markets

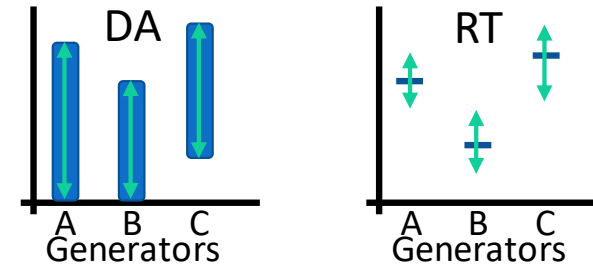


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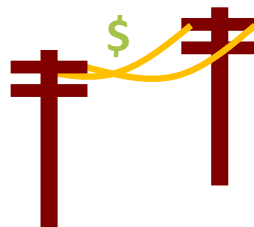
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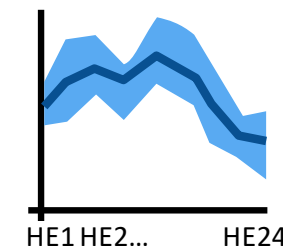
Larger volume than real-time markets; commits units and sets expected output to serve all load, rather than just incremental to expected output



Larger utilization of transmission system than real-time markets



Includes footprint-wide flexible reserves to cover load/gen uncertainty



Incremental Market Functions

Real-Time Market

Day-Ahead Market

- Includes participation in the associated real-time market

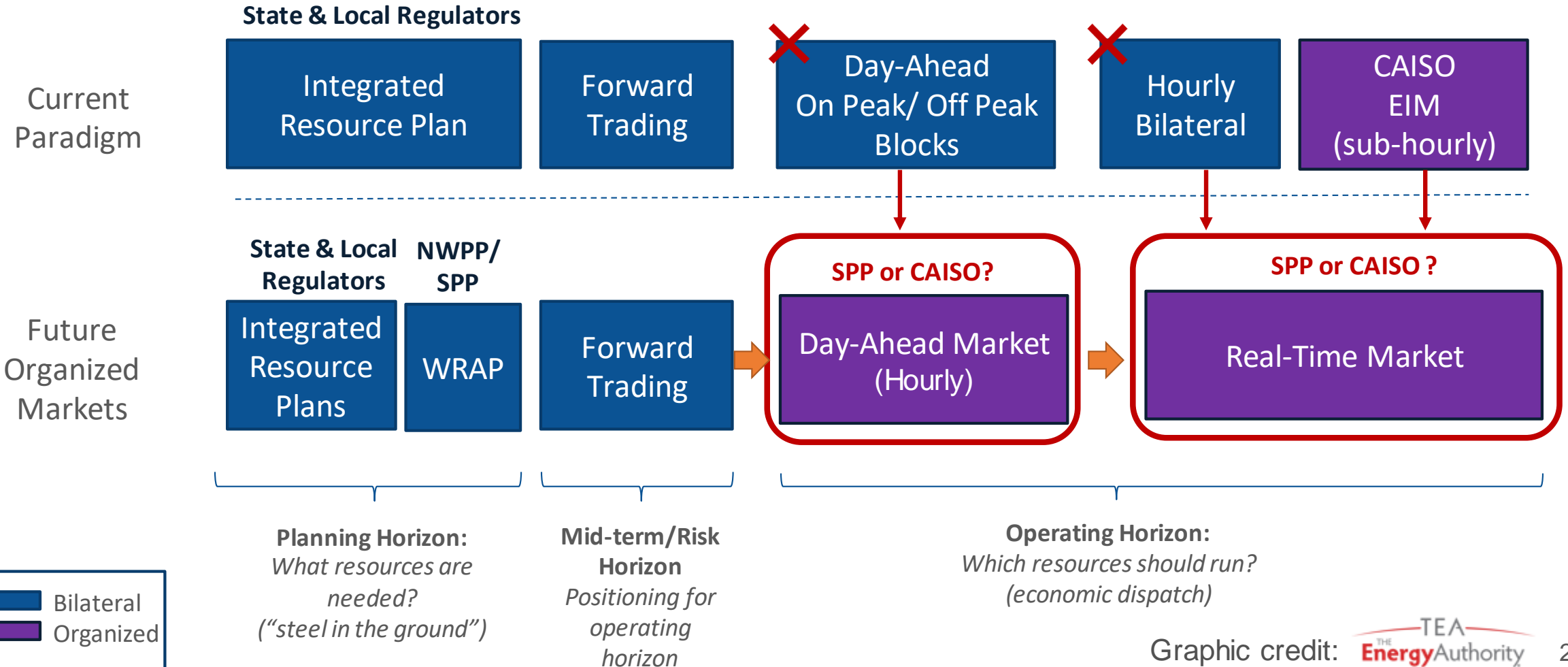
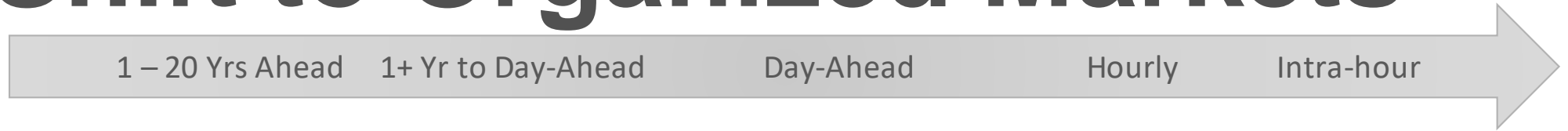
RTO

- Includes participation in associated day-ahead and real-time markets
- Adds combination of coordinated transmission planning, transmission service provision, BAA consolidation, and/or ancillary services market

Related Functions

- Reliability Coordinator
- Resource Adequacy (WRAP - SPP)

Shift to Organized Markets



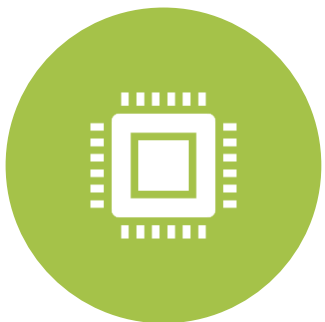
What's Changing in an Organized Day-Ahead Market



Day-Ahead and Intra-Day bilateral markets lose significant liquidity



Day-ahead bilateral block trading is replaced by resource offers and load bids that result in optimized transactions through the market with hourly granularity



In the day-ahead and real-time horizons, the market operator optimizes all supply to the entire market footprint



Uncertainty between day-ahead and real-time is managed by the market through procurement of uncertainty and ramp products as well as intraday “reliability unit commitment” (RUC) processes

Questions?



Wrap up

- Public feedback period on BPA's DAM participation following this workshop
 - 7/15 – 8/15
- Next DAM Evaluation Public Workshop
 - 9/11 & 9/12 (two day workshop)
- Please send any feedback regarding this process to techforum@bpa.gov (please put “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