

---

# Washington UTC Day-Ahead Market Workshop



---

August 7, 2024

# PSE Evaluating Day-Ahead Market Offerings: Markets+ & EDAM



## SPP: Markets+

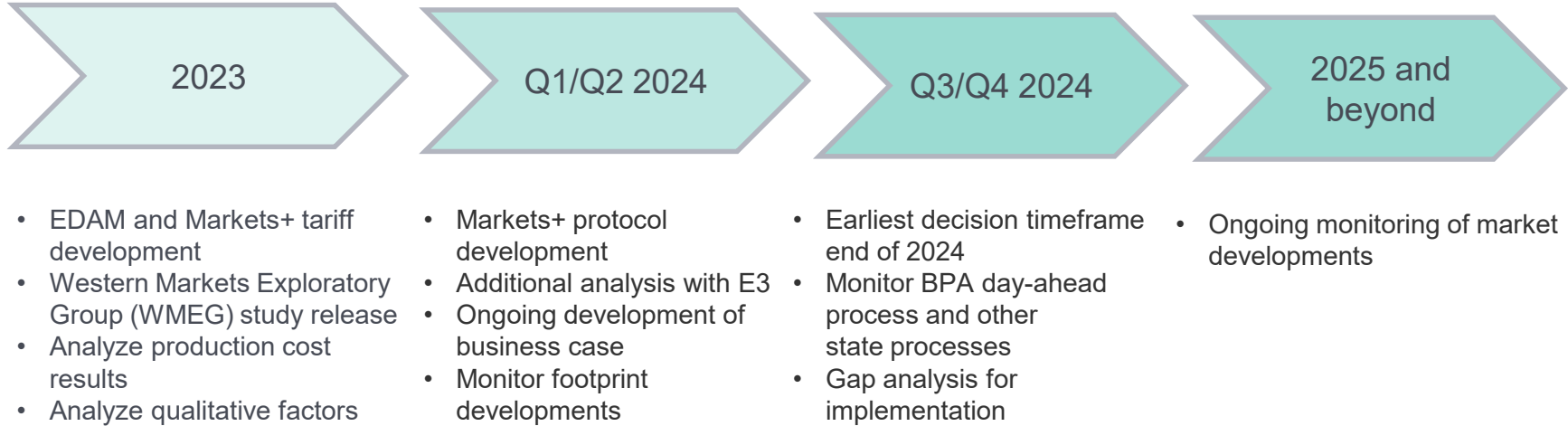
- SPP initiated the development of Markets+ in 2023
- 23 entities representing ~30% of WECC load Phase 1 funding parties collaborated to design and launch Markets+
- \$9.7M funding commitment for Phase 1 development
- PSE commitment: \$670k
- Go-Live 2027

## CAISO: EDAM

- CAISO initiated the development of EDAM in 2019
- PacifiCorp, Balancing Area of Northern California (BANC), Sacramento Municipal Utility District (SMUD), Los Angeles Department of Water and Power (LADWP), and Portland General Electric (PGE) have committed to EDAM
- Idaho Power, NV Energy have issued intentions to join EDAM
- Go-Live 2026

# PSE Evaluation Process

---



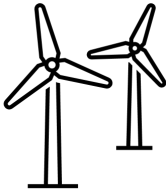
# Barriers

PRIMARY BARRIER IS THE DYNAMIC NATURE OF REGIONAL DEVELOPMENTS  
Decision is made in the context of multiple complex interacting variables

Timing



Regional Capacity Needs



Footprint and Market Partners



Regulatory



## Metrics to Assess Day-Ahead Markets

---

**Cost to serve load**

**Market dispatch emissions**

**Generation revenue**

**Megawatt-hours of CETA-eligible generation**

**Transmission wheeling and congestion revenue**

**Evaluation of qualitative factors**

**Implementation costs**

**Ongoing administrative costs**

**= Net cost to serve load while meeting CETA  
and the Climate Commitment Act**

# Qualitative Factors Inform Durable Benefits for Customers

---

**GOVERNANCE**

**GHG - ABILITY TO CLAIM CETA/CCA RESOURCES  
FOR WASHINGTON CUSTOMERS**

**RELIABILITY**

**FAST-START PRICING**

**CONFIDENCE IN MARKET TRANSFERS**

**POTENTIAL FOR VER AND LOAD PROFILE  
DIVERSITY**

## Resources and Sources of Data

---

- WMEG Production Cost Study
- Additional Scenario Analyses
  - Consideration of long-term purchases
  - Low hydro year
  - Additional footprint analysis
- Gap assessment
- Other data sources – Internal load, dispatch, purchase and sale data, Open-Access Same Time Information System (OASIS)
- Other regional studies – State-Led Study, Brattle, etc.

# PSE Decision Framework

## Governance

- Comparable consideration for all states
- Stakeholders take ownership of outcomes, driving initiation and development
- Clear process for elevating issues
- Role for state regulators
- Participants take a regional view
- All views on record

## Market Fundamentals

- Low cost market outcomes
- Reduced cost to serve load
- Resource Adequacy Integration
- Accurate compensation for flexible resources
- Load and renewable profile diversity
- Transparency in price formation and market products

## Clean Energy and GHG Accounting

- Reduced thermal dispatches
- Cost-effective means to meet clean energy targets
- Ability to claim clean resources paid-for by customers
- Flexible, entity-specific approach to identifying clean surplus
- Supports regulatory reporting and compliance

## Transmission

- Honors priorities and rights
- Enables transmission use for out-of-market needs
- Enables WRAP transmission holdback
- Balances market use of transmission with ability to market long-term firm



## Day-Ahead Markets and Customer Rates

---

- PSE studies indicate reduced cost to serve load in Markets+
- Increases in cost or little change in cost to serve load in EDAM
- Implementation costs of either market likely recovered in 1-2 years of market benefits
- Day-ahead market activities provide a lower-cost option for achieving clean energy goals relative to business-as-usual

# Operational Changes Envisioned

## Front Office

- New DA submission deadlines
- Shift of focus from trading to manage resource bidding and outcomes
- Financial and resource modeling
- Strategy around gas procurement and storage in a Day Ahead Market

## BA

- Equipment upgrades to meet Market requirements
- Increased responsibilities for submitting transmission and service flow constraints and capacities

## Finance

- New settlement charge codes and timelines
- Larger volumes of settlement charges to reconcile relative to a real-time or imbalance-only market

## Transmission

- Tariff changes
- Contract reviews
- Transmission recovery mechanism
- Increased requirements for transmission only customers

## Pathways

---

- PSE supports regionalization and a market that distributes benefits, costs, and risks in an equitable manner to all states
- PSE is not on the Launch Committee, but provided funding for Phase 1
- PSE encourages Pathways to make all meetings public and to consider dissenting voices to establish the trust needed to accomplish regional collaboration
- PSE will continue to engage and monitor Step 2 in the available public process

## Pathways – Step 1

---

- Step 1 does not meet PSE's principles for independent governance, but PSE does not oppose Step 1 advancing with additional work
- The proposal needs greater definition before a joint CAISO Board/WEIM Governing Body vote
  - CAISO should identify the governing documents and elements that will be changed to effectuate Step 1
  - CAISO should seek Board/Governing Body approval of the concept only and defer changes to the WEIM Charter and update all governing documents in one package
  - CAISO should provide an opportunity for all WEIM entities to craft changes to their governing charter

## Estimated Market Costs and Benefits



### CAISO Implementation Fee:

~\$1.2-2 million

### Internal implementation costs and EDAM costs incremental to WEIM:

PSE will know more upon completion of its gap analysis

**\*Unknown potential future exposure to costs of a new regional organization (RO)**

### Grid Management Charges:

CAISO estimate ~\$0.25-\$0.36/MWh

### Estimated Annual Scaled cost:

**2026:** NA

**2027:** \$7.4M-\$7.8M\*

**2028:** \$6.8M-\$7.3M

**2029:** \$7.7M-\$8.3M

**2030: \$8.6M-\$9.3M**

**\* Includes implementation fee**

### Annual benefits relative to business-as-usual:

Load service costs go up due to higher cost market purchases

## Estimated Market Costs and Benefits

### **Annual Operating Costs:**

SPP estimate ~\$0.115/MWh to \$0.133/MWh

### **Implementation Costs:**

SPP estimate ~\$0.027/MWh to \$0.053/MWh

**Total Combined Annual Rate: \$0.14/MWh to \$0.19/MWh**

**Estimated Total Combined Annual Cost for PSE:**

**\$6.4M to \$8.4M**


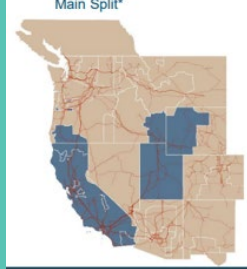
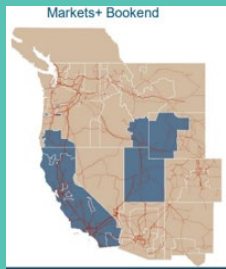
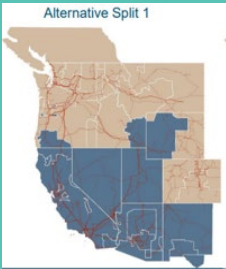






### **Internal implementation costs:**

PSE will know more upon completion of its gap analysis





### **Annual benefits relative to business-as-usual:**

Production costs go down significantly due to lower cost market purchases and shared footprint with Pacific Northwest hydro

# Production Cost Outcomes vs. Business As Usual

Footprint Map					
Scenario Name	EDAM Bookend	Main Split	Markets+ Bookend	Alternative Split 1	Alternative Split 2
PSE DA Market	EDAM	Markets+	Markets+	Markets+	EDAM
Direction					
Magnitude	\$	\$\$\$\$	\$\$\$\$	\$\$\$\$	\$

## Production Cost Outcomes vs. Business As Usual

Footprint Map	Alternative Split 3	Alternative Split 4	Alternative Split 4A	Alternative Split 4P
Scenario Name	Alternative Split 3	Alternative Split 4	Alternative Split 4A	Alternative Split 4P
PSE DA Market	Markets+	Markets+	Markets+	EDAM
Direction				
Magnitude	\$\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$\$\$\$\$	<p>Cost increase</p> <p>\$ \$ \$</p>



## Operational Benefits and Staffing

---

- PSE will know more regarding operational and staffing roles upon completion of its gap assessment
- Anticipated operational efficiencies with respect to short-term transmission procurement, bilateral trading, tagging, etc.
- Enhanced visibility into regional dispatch and inter-BA transfers

## Reliability and Resource Adequacy Planning

---

- PSE will know more regarding reliability and resource adequacy planning changes upon completion of its gap assessment
- PSE will continue to procure resources and capacity to meet its WRAP forward showing needs, and respective market resource sufficiency constructs outside the market (CAISO Resource Sufficiency Evaluation, Markets+ Must Offer Obligation)
- PSE sees significant value in a regional RA standard, RA metrics, and increased visibility into resource performance provided by the WRAP program

---

**Next Steps...**

---

