

**Special Meeting Agenda**  
**PUD Board of Commissioners**

Thursday, June 10, 2021 1:30 PM

Zoom

Port Townsend, WA 98368



To join online go to: <https://zoom.us/my/jeffcopud>. Follow the instructions to login. Meetings will open 5 minutes before they begin. TOLL FREE CALL IN #: 833-548-0282, Meeting ID# 4359992575#. Use \*6 to mute or unmute. \*9 to raise a hand to request to begin speaking.

**1. Call to Order**

Per the Governor's Extended Proclamation 20-28 and in response to the COVID-19 Pandemic, Jefferson County PUD is no longer providing an in-person room for meetings of the BOC. All meetings will be held remotely via Zoom until otherwise informed by the Governor. Participant audio will be muted upon entry. Please unmute at the appropriate time to speak. If you are calling in, use *\*6 to mute and unmute and \*9 to raise a hand to request to speak.*

**2. Agenda Review**

**3. Presentation by Public Power Council Staff**

2 - 61

[Jefferson PUD 6.10.21\\_FINAL.pdf](#) 

**4. Discussion**

**5. Adjourn**



# Intro to Regional Electricity Markets & BPA Impacts

Jefferson PUD Board Meeting

June 10, 2021

# Public Power Council Overview

- Since 1966, PPC has helped consumer-owned NW utilities have a unified voice on key energy issues
- We focus on the FCRPS and the Bonneville Power Administration at the regional and federal levels
- PPC represents more than 100 public power entities across 5 states – very small to very large
- Affordability and reliability are at our core, and it involves us in both power and transmission
- From BPA rates and contracts to power supplies to costs for fish and other investments – we're on it



# Public Power Council Overview

All PPC initiatives boil down to this simple but important fundamental view about BPA competitiveness



# Getting the Most From Your PPC Membership

- PPC advocacy is only as strong as our members!
  - Engaged Executive Committee, subcommittees, and membership
- PPC staff is a resource for you – reach out with questions and to share your perspective
- Monthly meetings and materials, website, working groups
- Meet your public power colleagues!

# Our Public Power Community

- Stick together: We will have differences, but collaboration is key
- Share your community perspective and context
- Help us advocate for transparency
- Join us where and when you can – public power credibility
- Share your ideas on strategy and vision

# PPC Staff and Capabilities

- Dedicated and professional staff with diverse skills in economics, finance, communications, law and more
- Consulting and outside expertise as needed



# Roadmap for Today

- Introduction
- Fundamentals of the Bonneville Power Administration
- BPA Power Supply: Contracts, Costs and Rates
- Regional Market Development
- Options for the Future: Post-2028 and Beyond

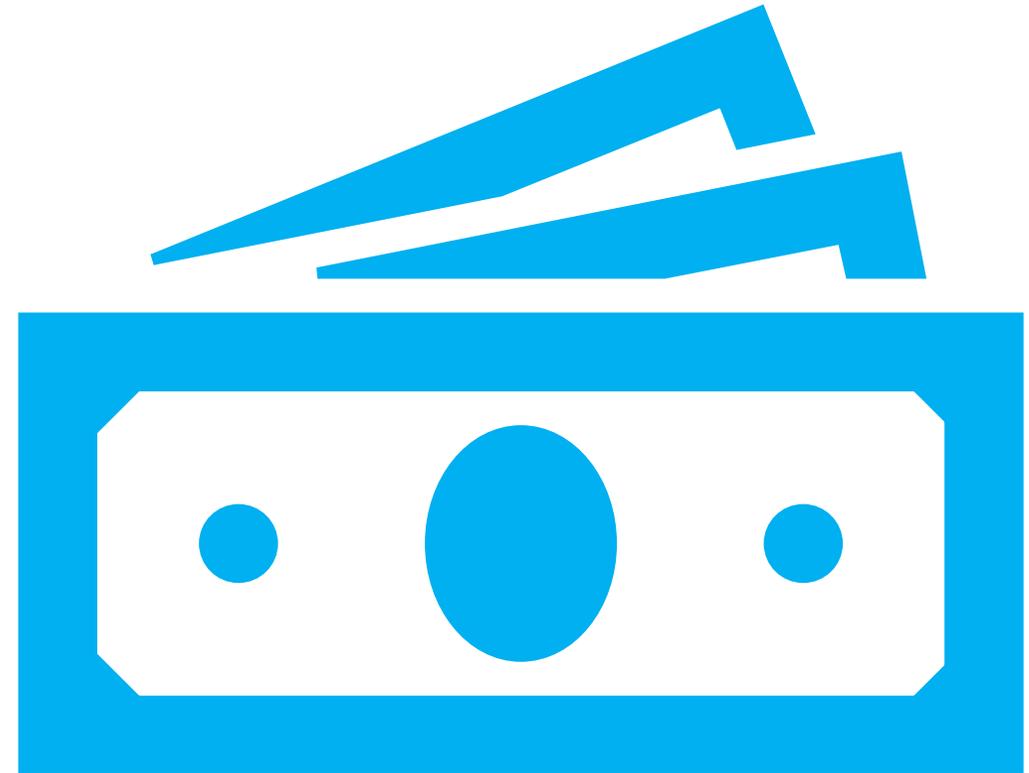
# What is power supply?

- Jefferson PUD is an electric distribution utility – but where does the electricity come from that comes on each time we flip the switch?
- Considerations for power supply:
  - Low cost/economical
  - Environmentally responsible
  - Reliable: energy, capacity, flexibility to meet demand at all times
- Current supply is entirely from the Bonneville Power Administration
- Potential for new choices after 2028

# Fundamentals of BPA

# Where it all begins...

- BPA is a self-financed Federal agency
- Pays all expenses from revenues it receives from the sale of power and transmission to eligible customers
- Self-financed status subjects it to certain financial, environmental, and social responsibilities
- Must set rates to comply with those responsibilities.



# BPA's Statute-Driven Business Model

- Recover total costs, repay debt to the Federal Treasury
- Assure adequate, economical, efficient, reliable power supply
- Ensure non-discriminatory transmission access with a high degree of safety and reliability
- Ensure **public preference** and regional preference
- Fulfill environmental and social responsibilities
  - Mitigate impacts, protect and enhance fish & wildlife populations affected by the FCRPS
  - Provide regional leadership in conservation and renewable resource development
- Preserve and balance economic and environmental benefits of the FCRPS
- **BUT, this model still allows for ample flexibility**

# The Foundation: Preference

- Public body and cooperative utilities in the Northwest have statutory preference to the power marketed by BPA:
  - Bonneville Project Act, 1937: “[T]he administrator shall at all times, in disposing of electric energy at said project, give preference and priority to public bodies and cooperatives.” 16 U.S.C. § 832c(a).
  - Flood Control Act, 1944: “Preference in the sale of such power and energy shall be given to public bodies and cooperatives.” 16 U.S.C. § 825s.
  - NWPA, 1980: “All power sales under this chapter shall be subject at all times to the preference and priority provisions of the Bonneville Project Act of 1937.” 16 U.S.C. § 839c(a).
- Where there are “conflicting or competing” applications for electric power, preference customers must be given priority over other would-be consumers of that power.

# Publics' Call Option

The Northwest Power Act requires that BPA offer a contract for service to a public body or cooperative utility whenever requested for its “net requirements” load, even if it means BPA must acquire power to serve a new request:

- “Whenever requested, the Administrator shall offer to sell to each requesting public body and cooperative entitled to preference and priority under the Bonneville Project Act of 1937 ... power to meet the firm power load of such public body...” to the extent that such firm power load exceeds such public body’s own resources.

# What does it include?

- Extends to all components of power produced by the federal power system and marketed by BPA, including both capacity and energy:
  - The Northwest Power Act, for example, subjects “[a]ll power sales” made by BPA to preference (16 U.S.C. § 839c(a)) and specifically defines “electric power” to include “electric peaking capacity, or electric energy, or both” (16 U.S.C. § 839a(9)).
- Delivered
- At Cost (contrast w/price)
  - BPA is a self-financed Federal agency
  - Pays all expenses from revenues it receives from the sale of power and transmission to eligible customers
  - Self-financed status subjects it to certain financial, environmental, and social responsibilities
  - Must set rates to comply with those responsibilities

# Furthermore...

- Congress has prioritized the needs of Pacific Northwest customers over those of users outside the region. 16 U.S.C. §§ 832m(b)(1), 837a, 837b.
- BPA's sales of energy outside the region are limited to power that would otherwise be wasted, i.e., power “for which there is no market in the Pacific Northwest at any rate established for the disposition of such energy.” 16 U.S.C. §§ 839f(c); 837(c). This power is called “surplus” power, and numerous restrictions are placed on its sale.
- Excess Federal Power Act, 16 U.S.C. § 832m, created a subspecies of surplus power called “excess federal power,” defined as “electric power that has become surplus ... due to the election by customers...” and authorized BPA to sell outside of PNW on firm basis for up to 7 years.

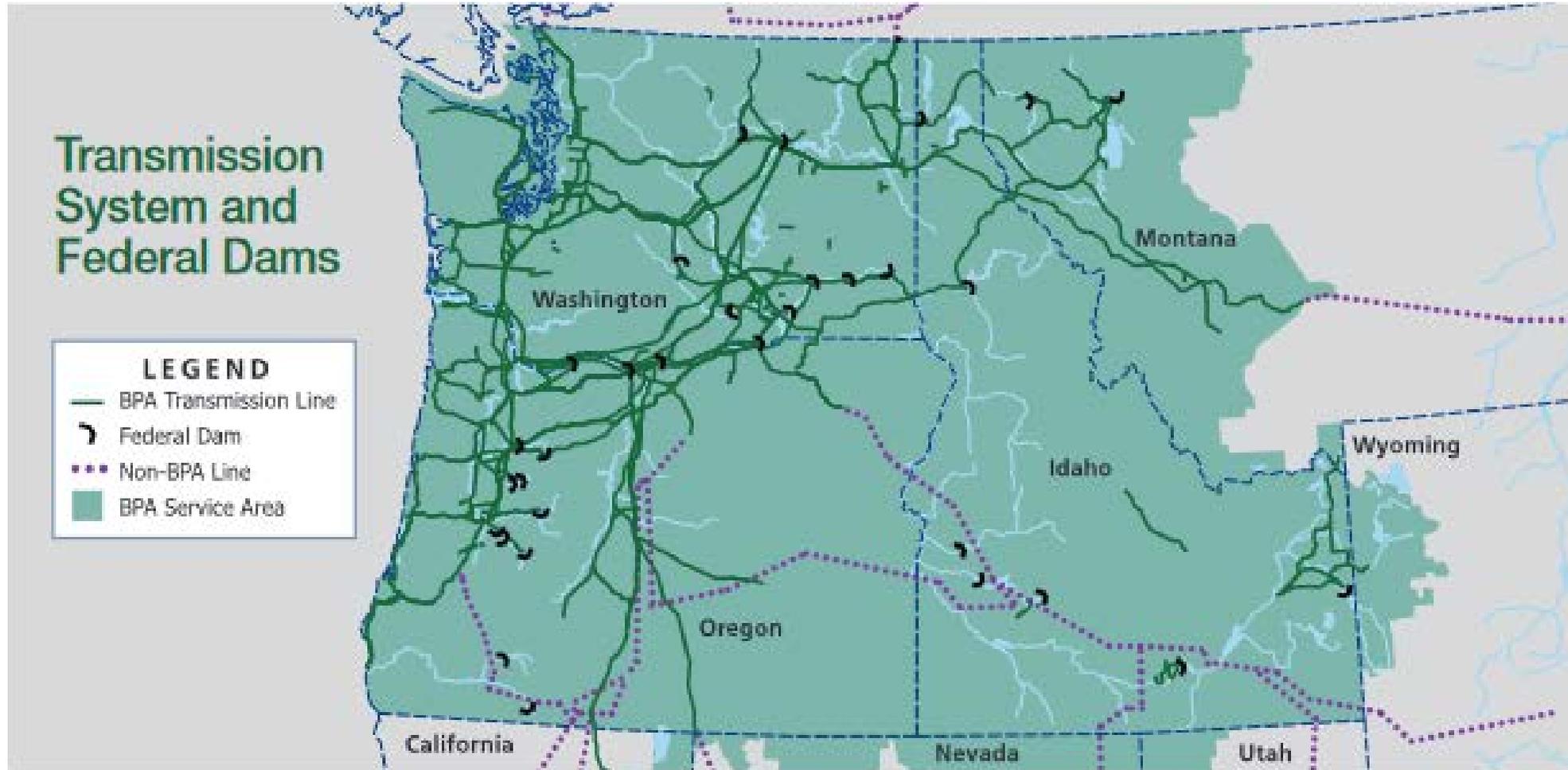
# BPA Power

- BPA markets the output of the Federal Columbia River Power System (FCRPS)
- 31 Federal hydro electric projects plus 1 nuclear power plant
  - About 7,500 aMW of energy
  - 83% hydro, 15% nuclear, 3% other
  - About \$2.5 billion in annual costs recovered through sales
- Essentially carbon free
- About 30% of the Pacific Northwest's firm, reliable annual power supply
- Serves most or all of the demand for 124 public utility district, cooperative, and municipal "preference" customers
  - Including Jefferson PUD

# BPA Transmission

- Backbone of the Pacific Northwest high voltage transmission system
- Over 15,000 miles of high voltage lines
  - $\frac{3}{4}$  of Northwest system
- 262 substations
- Delivers federal power to preference customers and also provides open access service to investor owned utilities, power marketers, and independent power producers
- About \$1 billion annual costs recovered through rates for service

# Federal Columbia River Power and Transmission Systems



# BPA Power Supply: Contracts, Costs, and Rates

# From Statutory Rights to Contracts

- The preference right of public utilities for federal power supply is defined in statutes
- BPA is obligated to sell a customer power (“Net Requirements”) equal to that customer’s load (“Total Retail Load”) net of any customer owned resources (“Dedicated Resources”)
- Net Requirement = Total Retail Load minus Dedicated Resources
- Service is obligated by the statute and implemented by contracts
  - Maximum of 20 years
- “Regional Dialogue” Power Sales Contracts implement BPA’s obligation to serve public power net requirements for FY 2012-2028

# Product Offerings and Design - Historical

- Pre-1980: Melded power rates, bundled transmission and power delivery
- Northwest Power Act
  - Guidance (sometimes ambiguous) on allocation of costs and benefits
  - PF, IP, NR rate pools
  - Broad discretion for BPA on design of rates and products
- Separate power and transmission rate offerings
- Specific power products generally defined by contract – generally melded costs



# Product Offerings and Design – Tiered Rate Methodology

- Negotiated and set by contract
- Rate construct that floats on top of BPA's other rate making requirements
- By “default” the NWPA contemplates melding of resources for load growth
  - BPA as central resource developer
- Tiered Rates Methodology flips this around – utilities responsible for their own choices beyond the base system
- Load Following, Slice, and Block products defined



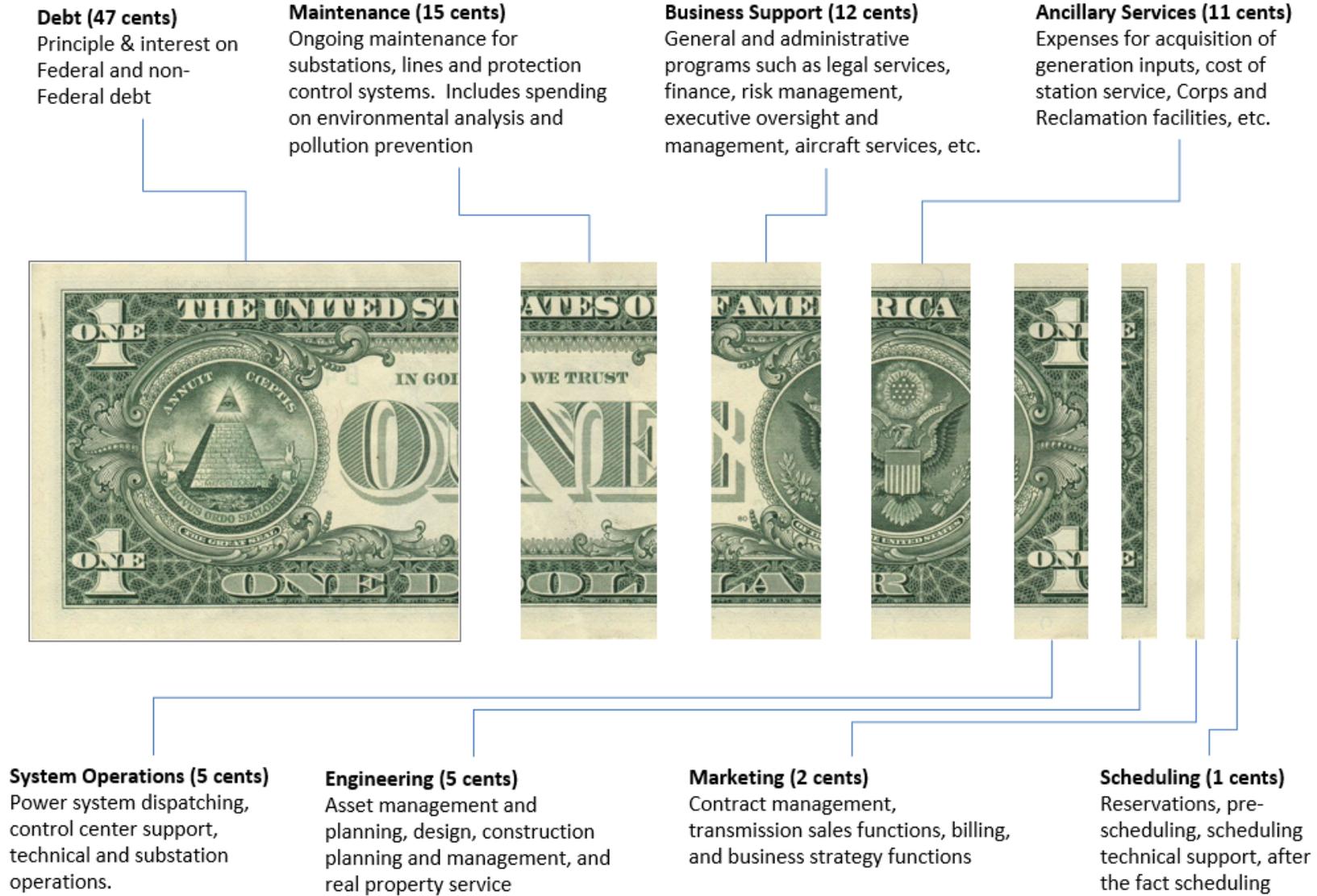
# The Load Following Product

- Electric demand and supply must be equal at all times
- Under the load following product, BPA meets customer demand in every hour
- A Load Following customer's Net Requirement is actual hourly demand net of any non-Federal resources
- Customer does not need to bring any capacity or flexibility
- No credit requirements
- Extremely low carbon
- Very different than a standard market purchase

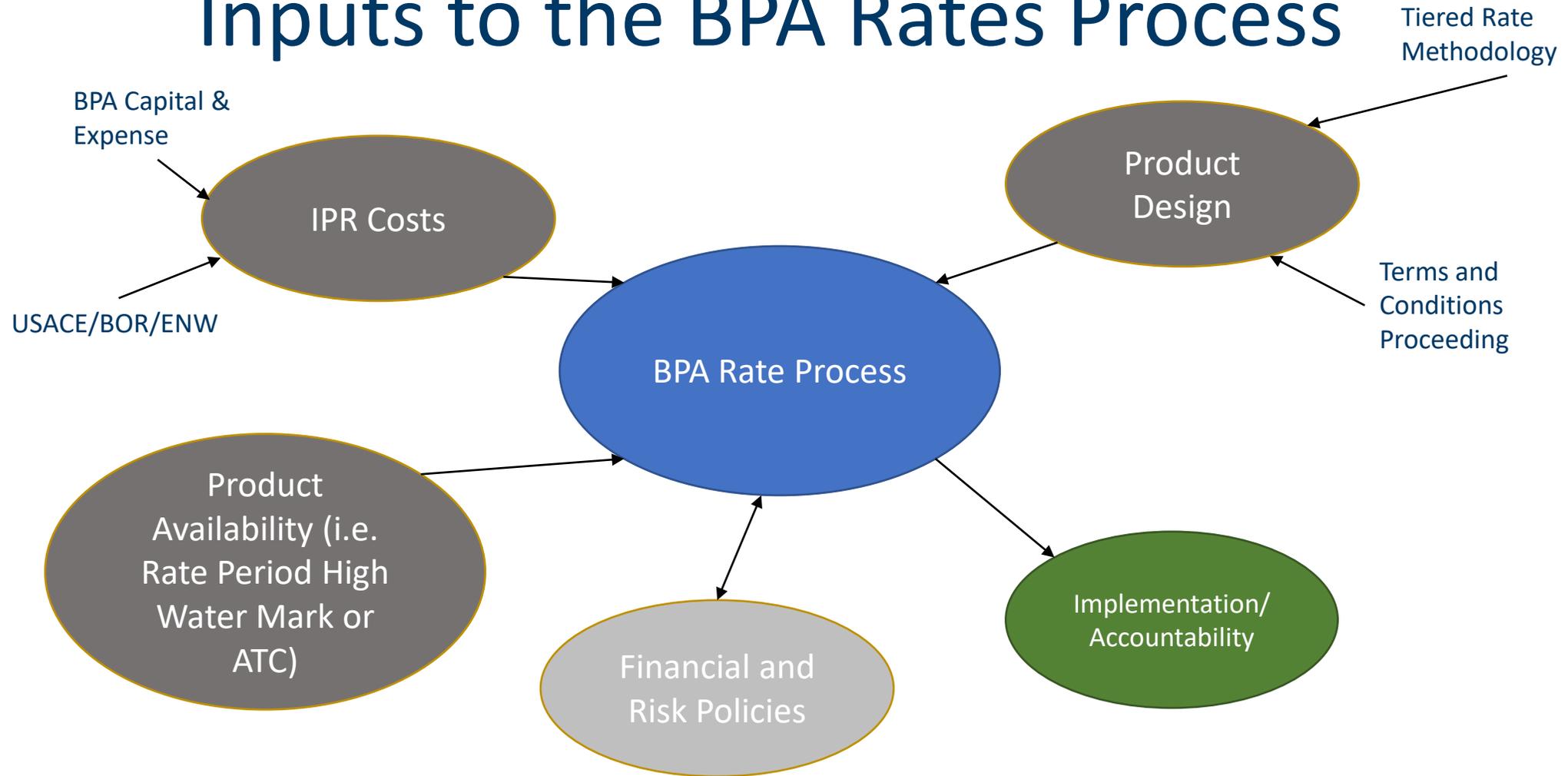
# How Bonneville spends a dollar of its power revenue



## How Bonneville spends a dollar of its transmission revenue



# Inputs to the BPA Rates Process



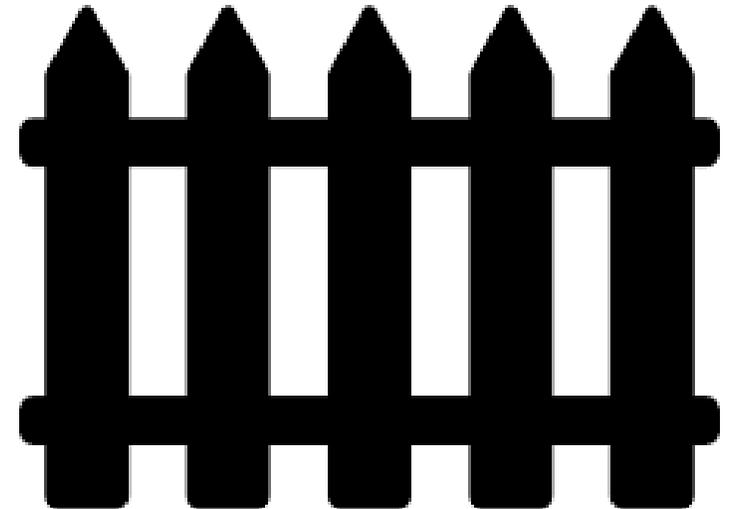
All items in **dark grey** are addressed outside of the Rate Case and are not issues in the case.

# Spending Levels: Integrated Program Review

- Typically, retail utilities consider costs, products, and rate design all at the same time
- BPA is atypical of most utilities as an (almost) exclusively wholesale provider and as a Federal agency with unique statutes
- For many years BPA has bifurcated its costs and rates
  - Administrative and legal convenience
- BPA's costs are still subject to customer review and legal challenge, just not as part of the “rate case” process itself
- BPA has at times further subdivided its program expenses and proposed capital spending
  - Based on customer feedback, capital spending and expense levels are now considered concurrently

# Financial Policies – On the Fence

- Significant impact on rates
- Sometimes argued and adopted in rate cases
- Also adopted in other venues with implementation in rate case
- Treasury Payment Probability (TPP) standard
  - Policy framework adopted in a financial plan
  - Implemented in rate case proceeding
- Financial Reserves Policy
  - Adopted in rate case proceeding
  - Implementation details in follow up workshops
- Leverage Policy
  - Adopted outside rate case
  - Implementation in rate case



# BP-22 Key Issues – Deep Dive

- BP-22 = Rate case to set rates for October 1, 2021 through September 30, 2023 (FY 2022 – 2023)
- Net Secondary Revenues
  - Largest offset to BPA's costs
  - Assumed value for power generated in excess of need in most water conditions
- Revenue Financing
  - Should BPA pay additional debt or keep rates at the lowest level?

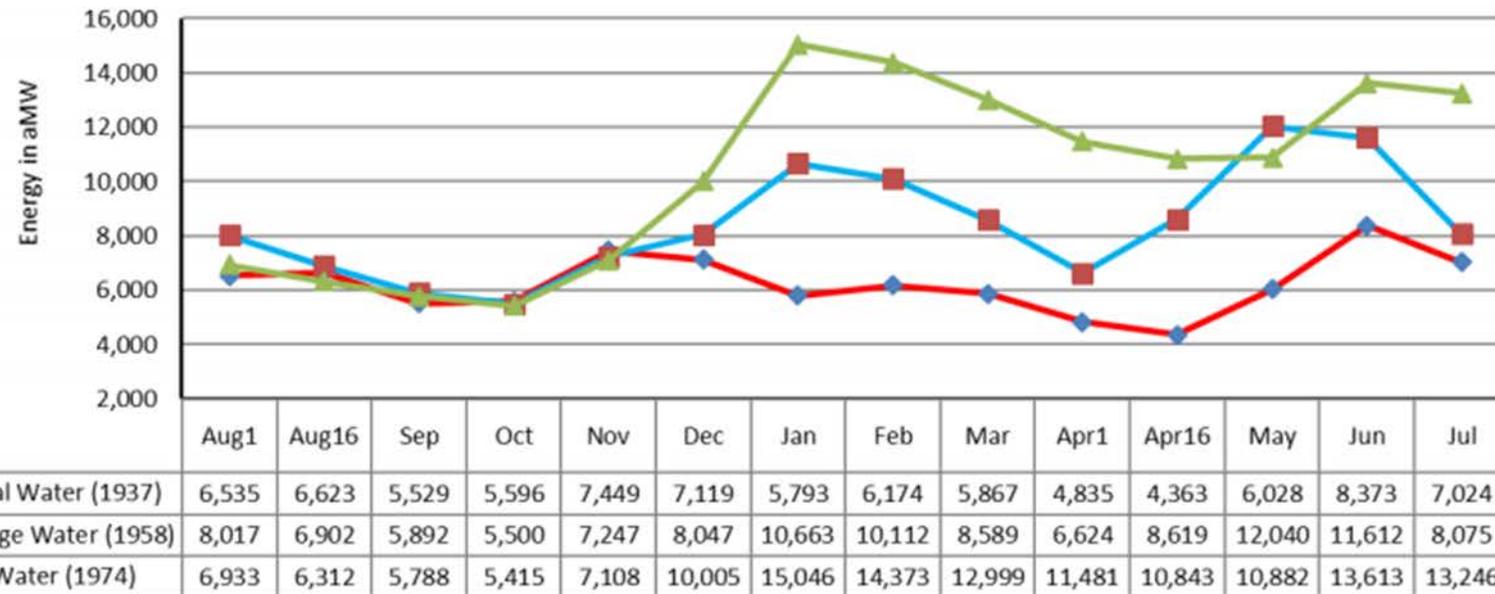
# Net Secondary Revenue Forecast Background

- BPA Net Secondary Revenues are the estimated short-term sales and purchases BPA expects it will make outside of its long-term regional dialogue contracts.
- The Net Secondary Revenues are the largest offset to power rates.
- Estimated Net Secondary Revenues can vary significantly depending on the assumed market conditions (i.e.. Changes in hydro conditions, fuel prices, transmission availability)

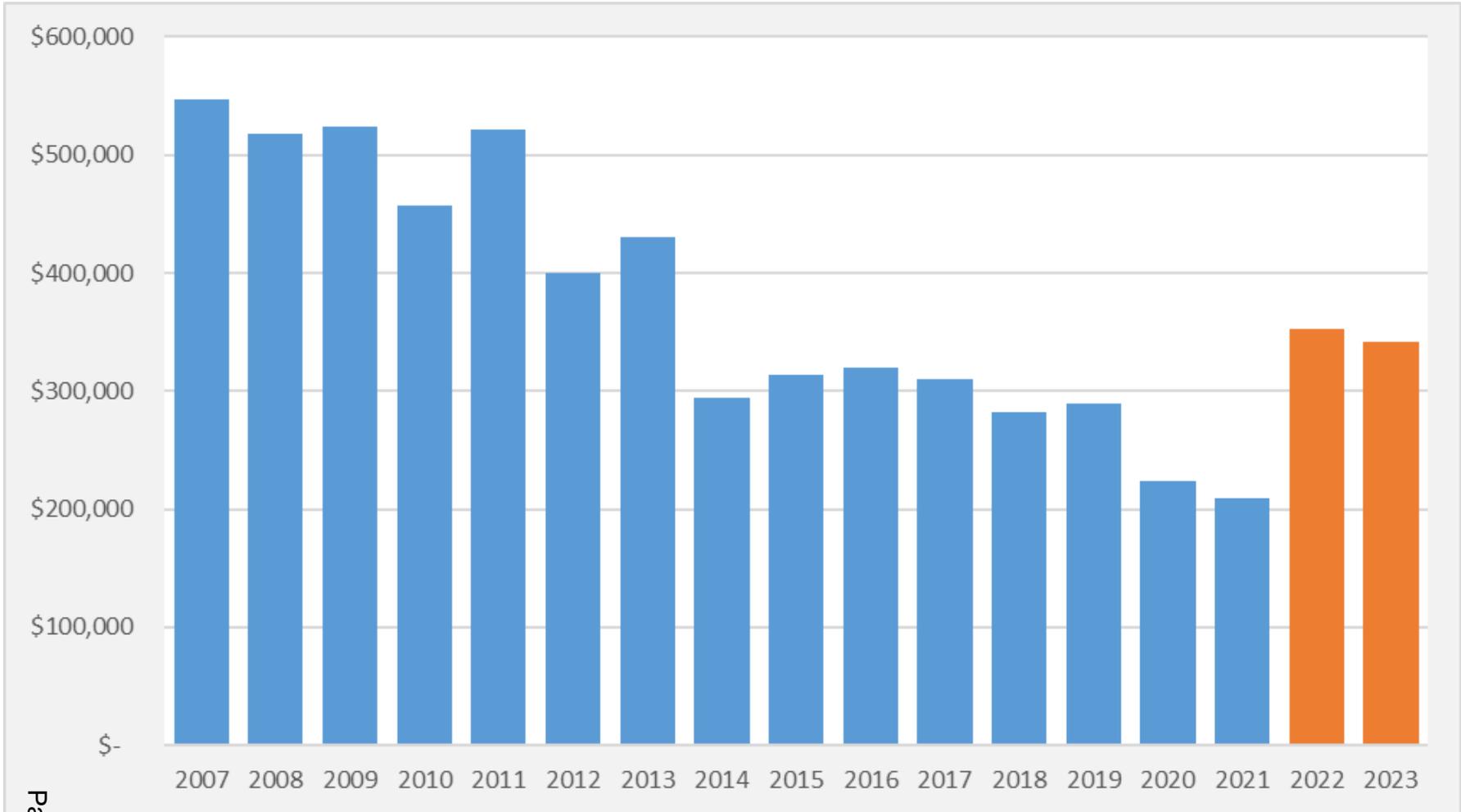
# Hydro Variability

Table 2-7

## Federal System Variability of Monthly Hydro Generation OY 2022 Under Different Water Conditions



# Net Secondary Revenue Historic Trends



- Since 2007 Net Secondary sales included in rates have trended down.
- The BP-22 Net Secondary Forecast may be the beginning in a rebound in market prices and resulting secondary revenues.

# Proposed Settlement

- Average 2 to 2.5% decrease in wholesale power rates proposed
  - Compared to 0% change in BPA's initial proposal
- Key Driver: adopt PPC's proposal to cap revenue financing in power rates at \$40M per year (compared to \$95M or more in BPA's initial proposal)
- Still not final, updates to come
- Individual utility impacts and situations vary substantially
- Outcome of cooperation among public power

# Intro to Regional Electricity Markets & BPA Impacts

# Organized Markets

- In economic terms, electricity is simply a commodity capable of being bought, sold, and traded. An organized market is simply a system – created pursuant to a particular set of rules and operated by a “market operator” – that enables purchases (through bids to buy) and sales (through offers to sell).
- Contrast with outside-the-market power purchase agreements, which are generally private bi-lateral transactions between counterparties.

# Types of Organized Markets

## ■ Energy Market

- Auctions used to coordinate the production of electricity on a day-to-day basis. In an energy market, electric suppliers offer to sell the electricity that their resources generate for a particular bid price, while load-serving entities (the demand side) bid for that electricity in order to meet their customers' energy demand. RTOs typically run two energy markets: the day-ahead and real-time markets.

## ■ Capacity Market

- NERC requires retailers to support enough generating capacity to meet forecasted load plus a reserve margin to maintain grid reliability. This market uses an auction to procure a level of future capacity deemed necessary for grid reliability.

## ■ Ancillary Services Market

- Uses short-term supply and demand to form prices that reflect the location-based marginal value of specific energy services.

## North American Independent System Operators

What is CAISO?

- In CAISO BAA

Grid Operator

Grid Planning

BAA Responsibilities

Administers DA Market

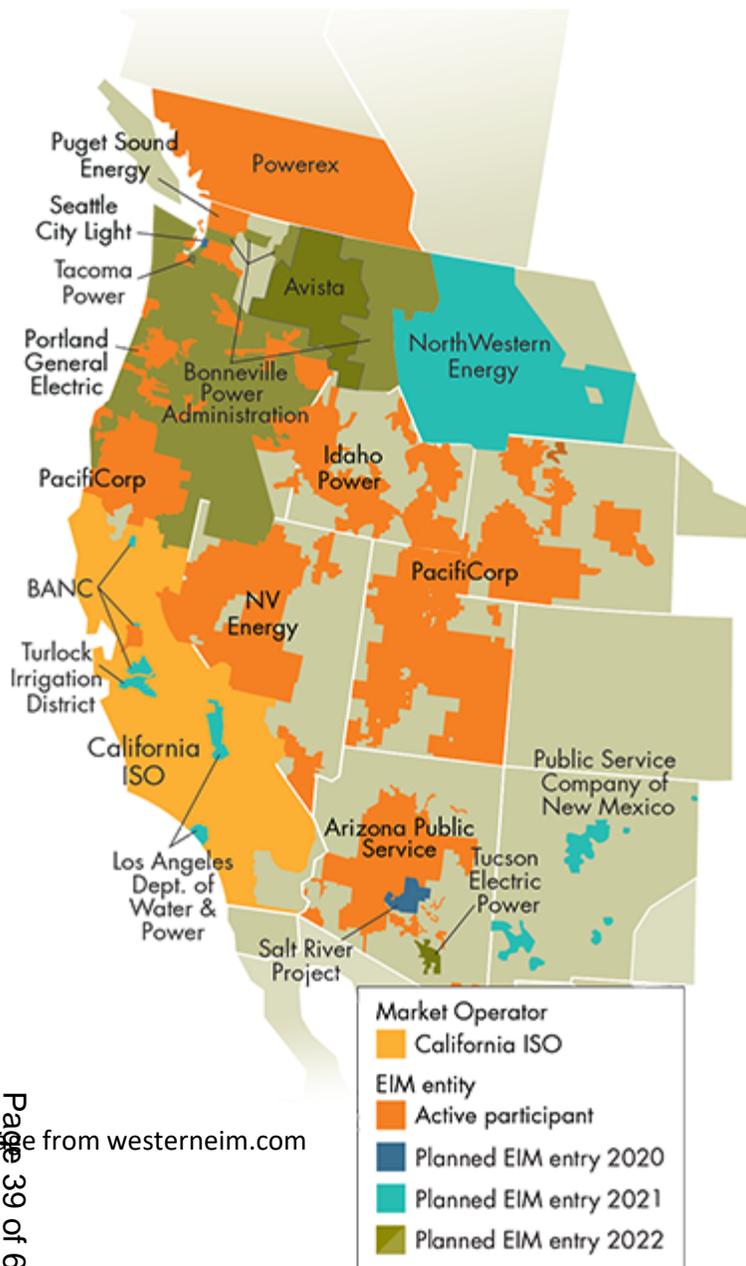
Administers RT Market

- In EIM Footprint

Administers RT market



# What is the Energy Imbalance Market?

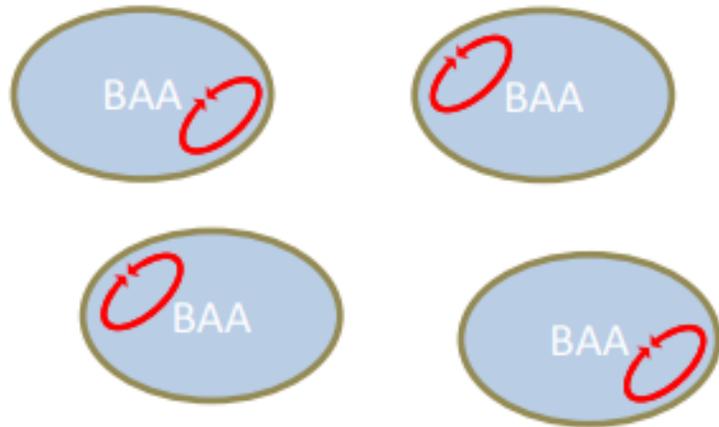


- Extends CAISO real-time market operations into other BAAs.
- Optimizes dispatch in real-time across the EIM footprint based on *bids of resources available in real time. (Units available to generate more or less in the next hour).*
  - Each EIM Entity starts with a base schedule and bid curve for their resources.
  - The bid curve conveys the cost of generating at various outputs.
    - If energy is available at a lower price, then entity will purchase energy from the market to meet real-time needs.
    - If others are serving load with higher cost generation, that generation will be reduced, and the less expensive generator will be dispatched – selling to the market.
- Regional benefits are created through lowering the total cost of regional dispatch required to meet load.
  - Allocation of regional benefits determined by market design and price formation.
  - Not all entities will benefit equally
- Participation is voluntary.

# How does the EIM create benefits?

## Without EIM:

Each BA must balance loads and resources within its borders.



## With EIM:

The market dispatches resources across BAAs to balance demand

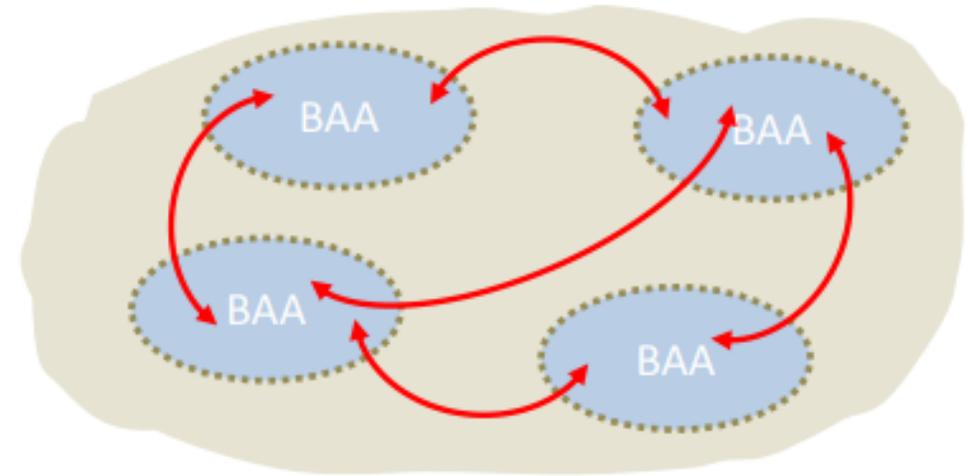


Image from BPA's EIM 101

# What does participation in the EIM look like?

EIM Entity

Participating Resource

Non-participating Resource

Load

# What about BPA's participation?

## Five Phases to EIM Decision



Exploration July 2018–June 2019  
Implementation agreement June–Sept. 2019  
Policy decisions Oct. 2019–Oct. 2020  
BP-22 & TC-22 Dec. 2020–July 2021  
Close-out Aug.–Sept. 2021

### Why Participate?

- More efficient dispatch of FCRPS expected to increase secondary revenues. These revenues are used to reduce power rates.
- More efficient dispatch of resources in the Balancing Area could reduce transmission congestion and address modest capacity deficits on the transmission system without new builds.

# Potential Impacts to Power Rates

- BPA business case identified \$29-\$34M in net benefits annually.
- BP-22 proposed rates assume \$0 net benefits for Power Services' EIM participation.
  - PPC filed testimony arguing for a higher recognition of benefit in BP-22, using a discounted version of the BPA business case.
  - BPA staff was not responsive to this recommendation.
- Currently no identified method for quantifying/estimating benefits of EIM participation and reflecting those benefits through lower power rates.

Preference

FERC

Jurisdiction

What are the legal considerations for BPA's participation?

Sound

Business

Principles

Existing  
Contracts

Autonomy

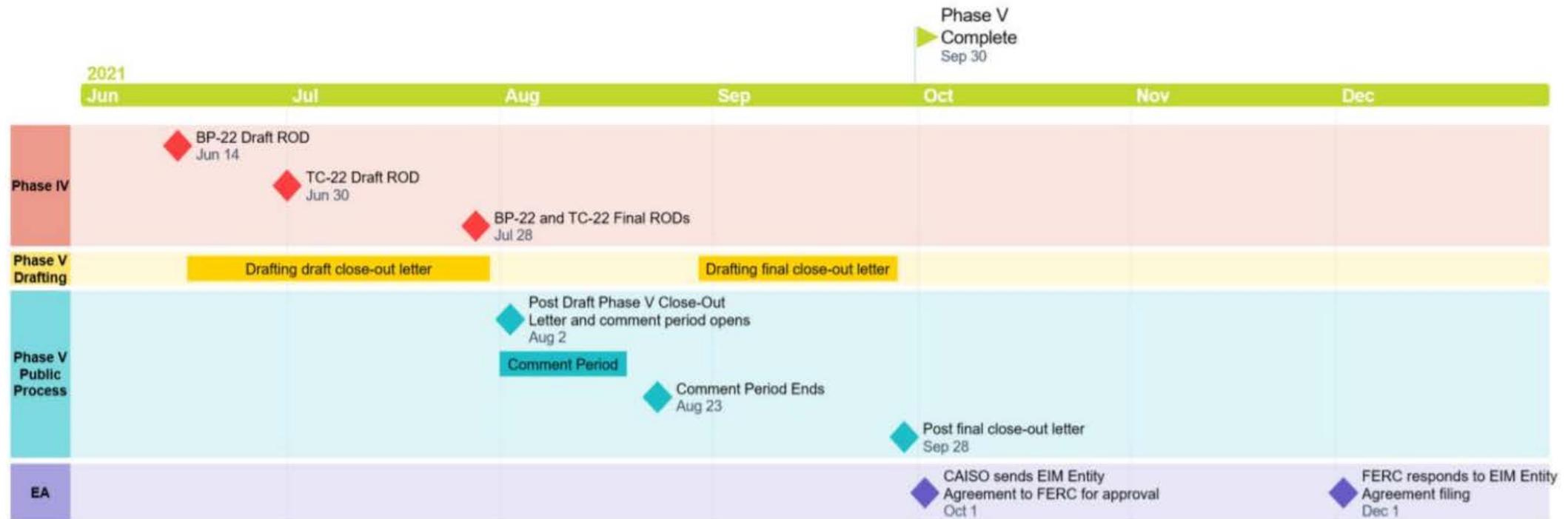
# What About Governance?

CAISO Board of Governors	EIM Governing Body
Provided ultimate decision-making authority through California statute.	Delegated authority from the CAISO Board of Governors through Governing Body charter. Charter is modified through approval by CAISO Board of Governors.
Members appointed by California Governor & reflect California interests.	Members nominated by stakeholder committee and confirmed by EIM Governing Body. Intended to reflect the diversity of EIM participants and stakeholders.
As political appointees have a range of background with varying levels of utility experience.	Candidates identified through recruitment process and have strong industry experience.

Current proposal to establish Joint Authority between these bodies for all rules that apply to EIM Entities.

# Next Steps on BPA EIM Participation

## PHASE V TIMELINE



PPC Staff will be asking for guidance on PPC's position at August Executive Committee Meeting

# Range of Feedback on BPA EIM Participation - PPC Members & Market Development Committee

## Full Range of Perspectives on BPA's EIM Decision:

- BPA must stop considering EIM participation.
- BPA should allow more time to make its decision on EIM participation.
- BPA must go forward as planned with EIM participation.

## Some Consistent Themes:

- Concern that there will be a lack of transparency and accountability related to BPA's participation.
- Concern that BPA has failed to develop or put forward any realistic metrics that it will use to measure its participation.
- Skepticism that BPA will adequately reflect expected EIM benefits in future rate cases to lower Power rates and concern that BPA has failed to develop any mechanisms for the equitable accounting of benefits and risks in rates.
- Interest in ensuring that BPA retains the flexibility to explore other market options should they become available.

# Potential PPC Response to BPA EIM Closeout

- Could develop a “risk mitigation package” to address specific concerns identified by PPC members.
- One potential element of that package shared at June Executive Committee Meeting to address concerns around transparency, accountability, and lower rates:
  - BPA commits to developing a mechanism for including secondary sales benefits associated with EIM participation in BPA rates in BP-24 and subsequent rate cases.
  - BPA develops a methodology to quantify the secondary revenue benefits resulting from participation in the EIM during the BP-22 period. This methodology will be reviewed and improved on in subsequent rate cases.
  - Secondary revenue benefits resulting from BPA’s participation in the EIM during the BP-22 rate period will be quantified and BPA works with customers to identify a mechanism for crediting BP-24 rates, reducing rates for power customers, and include that mechanism in the BP-24 Initial Proposal.
  - BPA commits to providing metrics on additional areas related to its EIM participation to help preference customers understand the impacts of BPA’s participation on their power products and transmission services.
- PPC staff will work with members to identify other areas of concern & potential mitigations in coming months.

# Potential Future Expansions of Organized Markets in the West

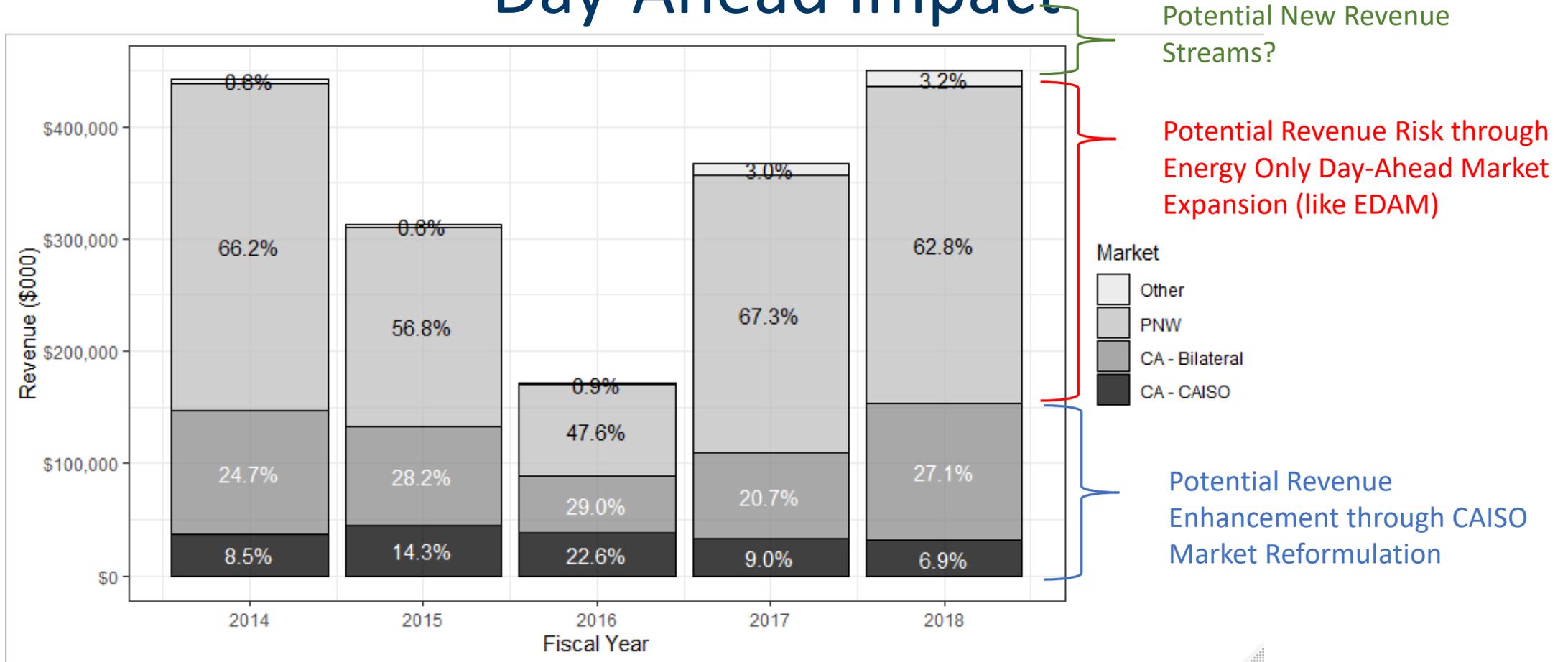
Real-Time	Day-Ahead	RTO
<ul style="list-style-type: none"> <li>• Optimizes dispatch of resources available in real-time.</li> <li>• Principally used to balance within hour deviations in renewable output and load.</li> <li>• Limited scope = limited risk and limited benefit.</li> </ul>	<ul style="list-style-type: none"> <li>• Optimizes dispatch of resources day-ahead by changing planned unit commitments.</li> <li>• Changes prices in day-ahead, and has greater impacts than real-time dispatch &amp; pricing.</li> <li>• Price formation becomes critical to ensure reliable operations and proper compensation to generators for attributes provided. <ul style="list-style-type: none"> <li>• Accounting for firmness and flexibility of resources.</li> </ul> </li> <li>• Transmission use and compensation for that use becomes more complicated.</li> </ul>	<ul style="list-style-type: none"> <li>• “Full service” organized market.</li> <li>• Centralizes nearly all functions of operating and planning for the regional transmission system.</li> <li>• Balancing areas are consolidated, and footprint operated as single system.</li> <li>• Participation is no longer optional.</li> <li>• RTO assumes responsibility for reliability and compliance.</li> <li>• Resource Adequacy is usually operated as part of a larger RTO market.</li> </ul>

CAISO EIM  
SPP WEIS

CAISO EDAM?  
SPP Markets+?

CAISO, MISO, NE ISO, SPP  
Grid West/Indigo – previous NW attempts

# BPA Secondary Sales – Potential Day-Ahead Impact



Source: FERC EQR

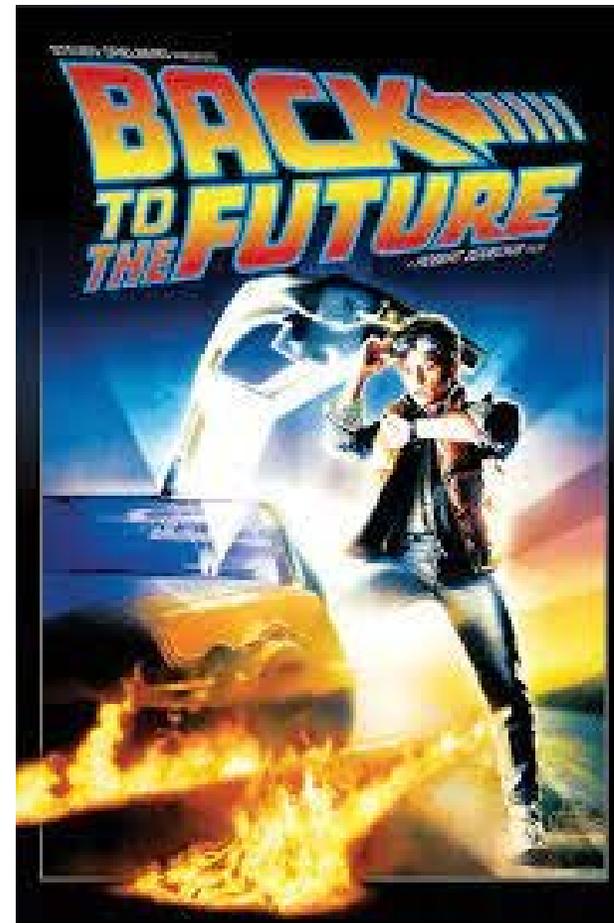
# Day-Ahead Much Larger Impact Than EIM

- Previous slide shows that potential impacts on BPA rates are much greater under a Day-Ahead Market (or RTO) than EIM.
- Formation of day-ahead market would require additional scrutiny of market design and governance.
- PPC collaborating with other entities on day-ahead market design analysis.
  - Expected late summer/early fall.
  - Will indicate high priority design issues with the greatest potential impact to BPA/PPC members.

# Post-2028 Power Supply

# Back to the future: Post-2028

- Current contracts with BPA run through September 30, 2028
- Utilities will have choices
- Strong PPC focus on making sure BPA offers the best array of options for preference customers
- Not “all or nothing” with BPA



# BPA Proposed Timeline

**PROVIDER OF CHOICE**  
— POST-2028 —

## Provider of Choice: Post-2028 Power Policy, Rates, and Contract Timeline



- Timeline outlines BPA's current expectation for the path to signed post-2028 power sales contract. This timeline is subject to adjustment.
- Customer engagement presumed throughout process. Formal engagements precede each formal deliverable, as noted with ★



# What is PPC doing?

- PPC was founded as a venue for development of power supply options for and by public power
- Committed to a member inclusive process to arrive at a unified public power positions wherever possible
- For 2021 this includes working towards a public power centric policy concept
  - Public power leadership input
  - Technical meetings with BPA and public power
  - Educational opportunities
  - Development of topic area white papers to build menu of policy options
  - End of year synthesis and conceptual proposals

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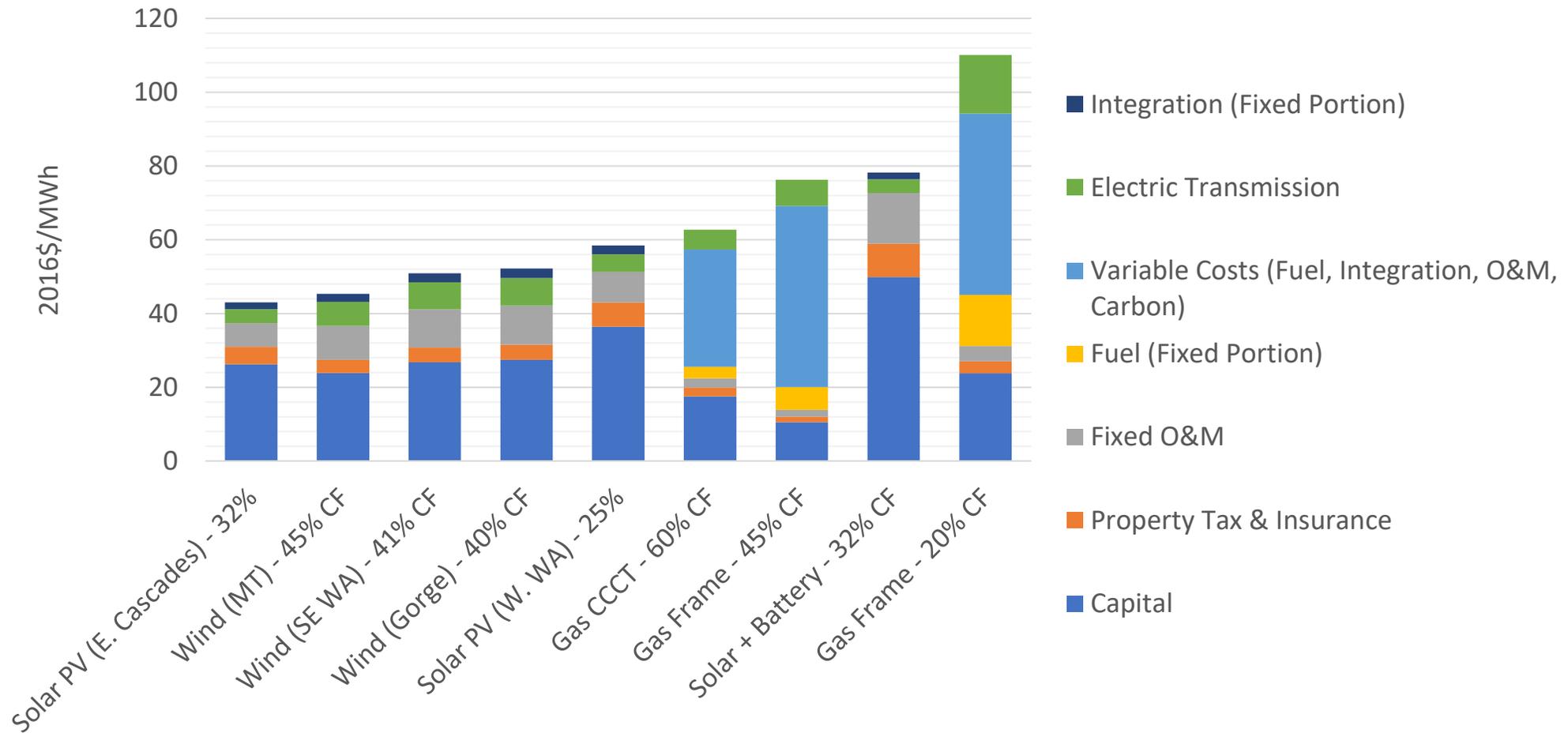
# Topic Areas

- BPA system size, definition, and allocation options
- Use of non-federal resources
- Capacity and Resource Adequacy
- Carbon Issues
- Contract length
- Cost Control
- Transmission and Transfer Service
- Energy Efficiency

# Utility Choices

- Continue with BPA and/or develop non-Federal resources
  - Different degrees of diversification are achievable
  - Potential for aggregation with other public power entities
- Capacity and flexibility are needed
  - Wind and solar have come down in cost, but cannot meet demand alone
  - New carbon free capacity and flexible resources still emerging and uncertain
- Market purchases may not be from specified sources
  - Carbon, credit, cost and delivery risk
- New natural gas generation may be impractical
- When comparing potential resources and portfolios, it is essential to take a comprehensive view and make sure cost/risk is truly “apples to apples”

# Individual Resource Cost Comparison





# Intro to Regional Electricity Markets & BPA Impacts

Questions?

Scott Simms – [ssimms@ppcpdx.org](mailto:ssimms@ppcpdx.org)

Michael Deen – [mdeen@ppcpdx.org](mailto:mdeen@ppcpdx.org)

Irene Scruggs – [iscruggs@ppcpdx.org](mailto:iscruggs@ppcpdx.org)

Lauren Tenney Denison – [tenney@ppcpdx.org](mailto:tenney@ppcpdx.org)

503-595-9770