

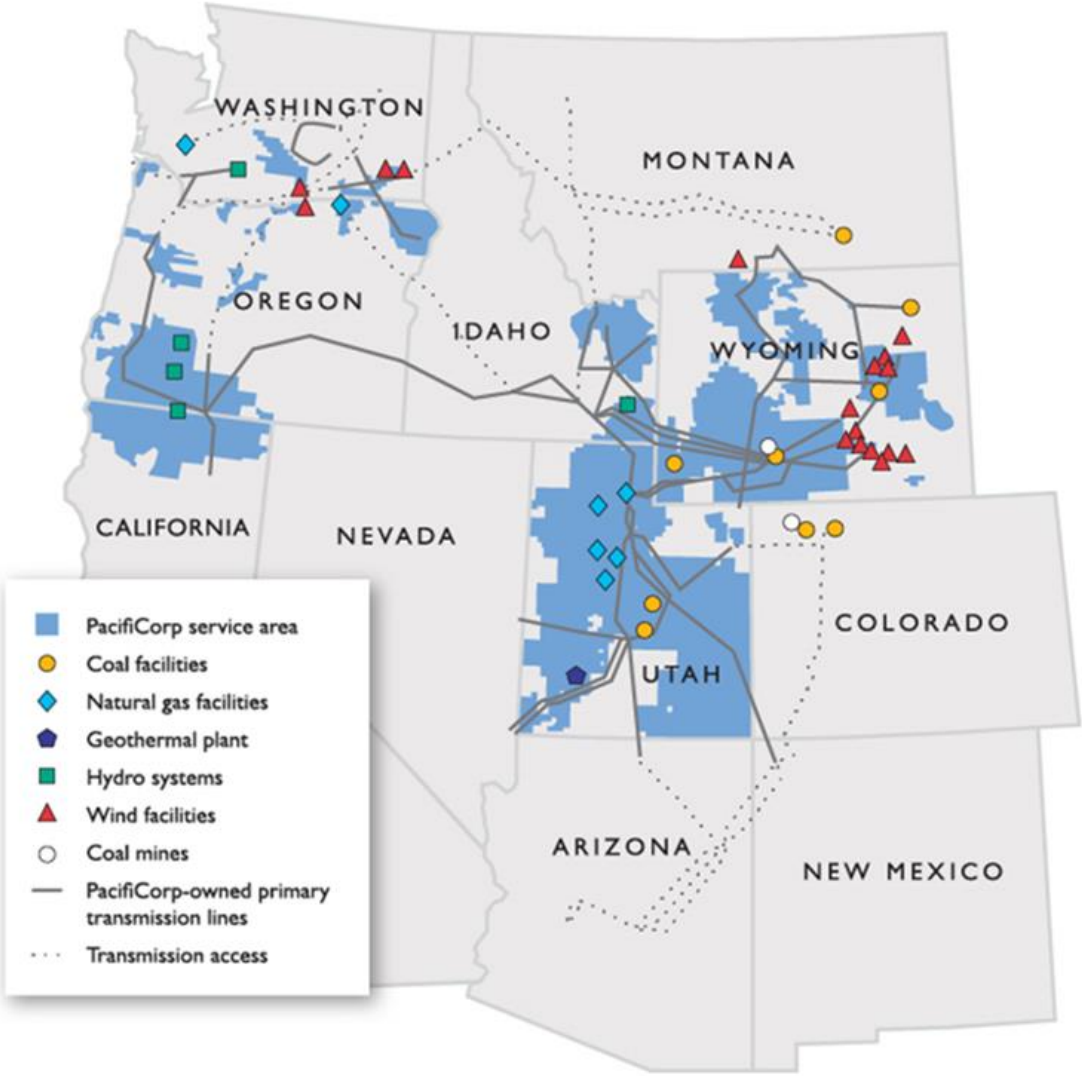
Update on Western Day-Ahead Market Development

Michael Wilding
Vice President, Energy Supply Management

Oregon Senate
Committee on Energy and Environment
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PacifiCorp Service Area



Western Energy Imbalance Market (WEIM) Continues to Deliver Value

Growing Participation and Diversity

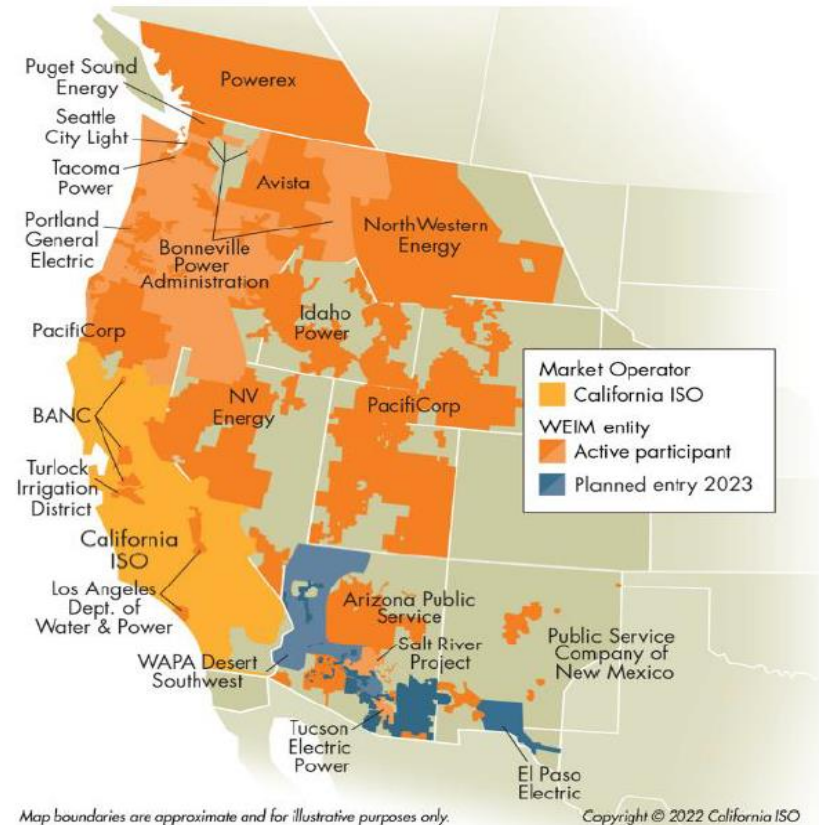
- WEIM launched in 2014 with CAISO and PacifiCorp
- Footprint expansion to approximately 80% of WECC load by 2023
- Automated dispatch has facilitated energy transformation in the West through the integration of renewable generation and storage

Economic Benefits

- \$538 million PacifiCorp benefits since inception
- WEIM has exceeded \$3.0 billion in total benefits
- Q3 '22 benefits alone were \$527 million total / \$85 million PacifiCorp

Additional Benefit – Improved Reliability

- Automated dispatch has improved situational awareness and communication
- Sept 6, 2023 – Record heat across the West
 - Region rode through event maintaining reliability during supply scarcity and record loads
 - WEIM prices were at \$2,000/MWh cap – sellers were paid and buyers were able to meet load
- Individual balancing authority areas (BAAs) maintain balancing and reliability responsibilities, but WEIM allows BAAs to carry less reserves
- Operator and regulatory confidence in WEIM lays the groundwork for Day-ahead Market expansion



Western Market Evolution – Moving to the Day-Ahead

- **What is the Day-Ahead Market and how is it different from the Real-Time Market?**
 - EDAM will optimize day-ahead schedules for all participating load, generation, and transmission as opposed to only real-time imbalances as currently optimized in WEIM.
 - Significantly higher transactional volume – and benefits potential
 - Improved response to significant weather events and changing conditions in the market
- **What are the market options?**
 - Extended Day-Ahead Market (EDAM) – operated by the California Independent System Operator (CAISO)
 - Markets+ – Operated by the Southwest Power Pool (SPP)
 - Business as usual – rely on bi-lateral market and WEIM
- **PacifiCorp announced our commitment to pursue EDAM on 12/8/2022**
 - EDAM builds on platform and benefits already established under WEIM
 - EDAM includes California loads and resources – Markets+ is designed to *exclude* California
 - Growing confidence in governance model while recognizing low barrier to exit
 - EDAM will be first Day-Ahead market offering, Q4 2024 target

Extended Day-Ahead Market (EDAM)

Business Case

- **EDAM is poised to deliver significant progress toward the goal of supplying customers with the most reliable, most affordable and cleanest energy available at any given time**
 - The day-ahead market builds upon exceptional value created by WEIM
 - Implementation is expected to cost around \$1.5 million, an investment likely to pay for itself within days of operation
 - PacifiCorp has extensive experience with CAISO operating systems and uses the Nodal Pricing Model to assign power costs across its regulated jurisdictions
- **EDAM will bring Operational and Reliability Benefits**
 - The optimization of all load, resources and available transmission will unlock greater regional diversity, resulting in greater benefits for customers
 - Optimized transfers without a transmission hurdle rate will reduce reliance on inefficient block products in the bilateral market
 - Major weather events in the Western U.S. demonstrated the value of improved regional coordination of WEIM – EDAM will preserve and build upon these capabilities
 - Diversity benefit of the footprint will be shared among participants, reduced uncertainty requirement
 - EDAM leverages participation in Western Resource Adequacy Program (WRAP)
- **Public Market Studies**
 - U.S. DOE-funded State-led market study estimated \$642 million per year benefits with expanded west-wide market services
 - Updated with CAISO's EDAM market proposal in 2022 estimates up to \$1.2 billion in benefits and 2.92 million tons of CO2 reductions per year

Thank You

