



Wholesale Electricity Markets 101

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Western Interstate Energy Board

Regional Transmission Coordination Task Force

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Western Interstate Energy Board



The Western Interstate Energy Board (WIEB) mission is to promote energy policy that is developed through the cooperative efforts of WIEB member states and provinces, and in collaboration with the federal government.

WIEB accomplishes this mission by providing the tools and framework necessary to support cooperative efforts among the states and provinces in the West.



Framework for Cooperative Efforts

WIEB provides technical expertise and staff support to the following regional committees:

- High-Level Radioactive Waste Committee (HLRWC)
- Committee on Regional Electric Power Cooperation (CREPC)
- Western Interconnection Regional Advisory Body (WIRAB)
- Western EIM Body of State Regulators (WEIM-BOSR)
- Western Resource Adequacy Program Committee of State Representatives (WRAP-COSR)



Wholesale Electricity Market Models

Traditional Bilateral Market Model	Energy Imbalance Market Model	Joint Dispatch Market Model	Restructured Market Model
<ul style="list-style-type: none"> • Vertically integrated monopoly utilities • Utilities own generation, transmission and distribution assets • States oversee Integrated Resource Planning and resource adequacy • Wholesale sales are executed bilaterally 	<ul style="list-style-type: none"> • Vertically integrated monopoly utilities • Utilities own generation, transmission and distribution assets • States oversee Integrated Resource Planning and resource adequacy • ISO real-time market for generation dispatch 	<ul style="list-style-type: none"> • Vertically integrated monopoly utilities • Utilities own generation, transmission and distribution assets • States oversee Integrated Resource Planning and resource adequacy • ISO real-time market for generation dispatch • ISO day-ahead market for unit commitment • ISO planning reserve margins for RA • ISO transmission planning 	<ul style="list-style-type: none"> • Full retail choice • Utilities divest generation assets • Merchant generators respond to price signals to build and retire generating units • No Integrated Resource Planning • Capacity markets for resource adequacy

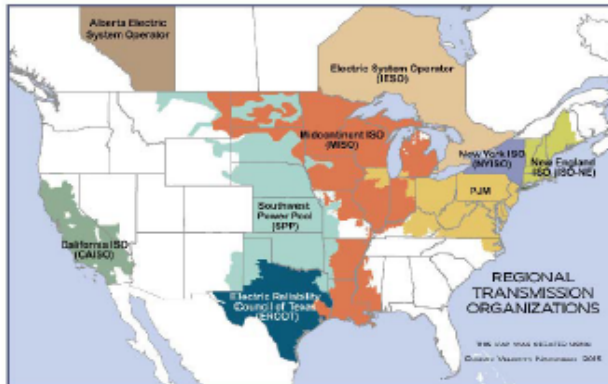


One Clear Success

“One of the clear successes of wholesale electricity markets is the security constrained economic dispatch that allows a region to more efficiently utilize generation resources for the benefit of consumers across a larger footprint than a single state or utility. All states can access this without surrendering their control over resource decisions. In fact, security constrained economic dispatch paired with the stability of rate based assets, which allow utilities to cover cost over the assets useful life, has demonstrated its value time and again.”

– Tony Clark

Regulation and Markets: Ideas for Solving the Identity Crisis



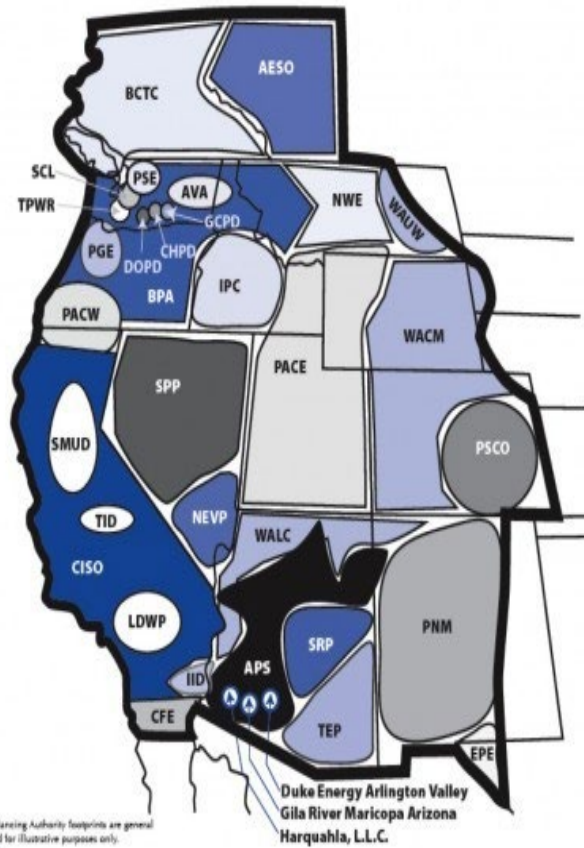
Tony Clark*

JULY 2017

* With thanks to my colleagues Ray Gifford, Michael Keegan, Matt Larson and Robin Lunt.



Four Primary Functions



1. ISO Real-time Market: for security constrained economic dispatch of generation resources
2. ISO Day-ahead Market: for security constrained economic commitment of generation resources
3. ISO Planning Reserve Margins: for resource adequacy efficient capacity expansion
4. ISO Transmission Planning: for transmission system expansion



Goals of Market Expansion

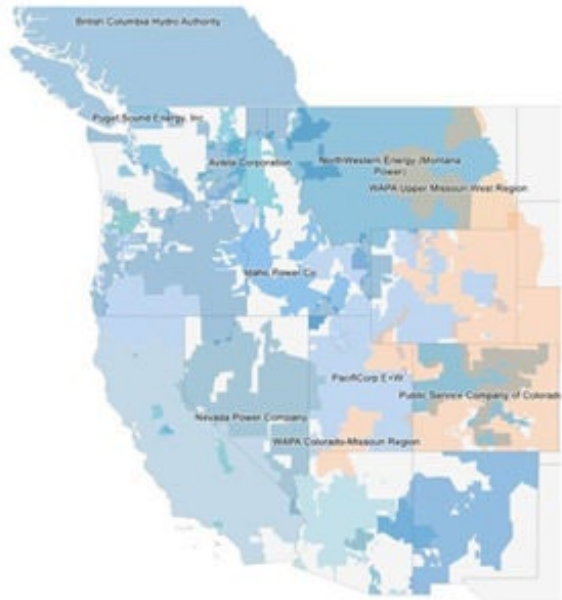


1. Least-Cost: market dispatch for utility power cost savings
2. Reliability: improved situational awareness for enhanced reliability
3. Decarbonization: leverage system flexibility to reduce curtailment of renewable energy
4. Transparency: improved data and information through consolidation



Current Regional Efforts

Status Quo



EIM entities that have announced intent to sign EIM Implementation Agreement (or equivalent)*

*Announcements that were made before the end of 2019 are included in the Status Quo footprint.

One Market



Studied in 2020 and 2030 timeframe

Two Market A



Only studied in 2030 timeframe

Two Market B



Only studied in 2030 timeframe

1. California ISO: Extended Day-Ahead Market (EDAM) Initiative
2. Southwest Power Pool: Markets+ Initiative
3. Western Power Pool: Western Resource Adequacy Program
4. Western Market Exploratory Group



Role of WIEB

- States are being asked to give up traditional ways of utility regulation.
- For example, should states give up some control over resource adequacy to achieve cost savings and reliability benefits?
- What is given up is often not commensurable in dollars and cents with what is gained.
- This will require creative rationality. The decision is not simply one of calculating benefits and costs.
- WIEB continues to work with states to explore these complex regulatory and market tradeoffs.



Two of WIEB's Contributions




Western Flexibility Assessment

Investigating the West's Changing Resource Mix and Implications for System Flexibility

December 10, 2019

Final Report

Prepared by Energy Strategies for submission under Agreement with the Western Interstate Energy Board



Implications of a regional resource adequacy program on utility integrated resource planning

Study for the Western United States

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Questions?

Thank You!

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