Wholesale Electricity Markets 101

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Regional Transmission Coordination Task Force
Carson City, NV

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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

<table>
<thead>
<tr>
<th>Traditional Bilateral Market Model</th>
<th>Energy Imbalance Market Model</th>
<th>Joint Dispatch Market Model</th>
<th>Restructured Market Model</th>
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<tbody>
<tr>
<td>• Vertically integrated monopoly utilities</td>
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<td>• Full retail choice</td>
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<td>• Utilities own generation, transmission and distribution assets</td>
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<td>• Utilities divest generation assets</td>
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<td>• States oversee Integrated Resource Planning and resource adequacy</td>
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<td>• Merchant generators respond to price signals to build and retire generating units</td>
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<td>• Wholesale sales are executed bilaterally</td>
<td>• ISO real-time market for generation dispatch</td>
<td>• ISO real-time market for generation dispatch</td>
<td>• No Integrated Resource Planning</td>
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<td>• ISO day-ahead market for unit commitment</td>
<td>• Capacity markets for resource adequacy</td>
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<td>• ISO planning reserve margins for RA</td>
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<td>• ISO transmission planning</td>
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April 24, 2022
“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
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

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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