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Nevada's Wholesale Energy Market

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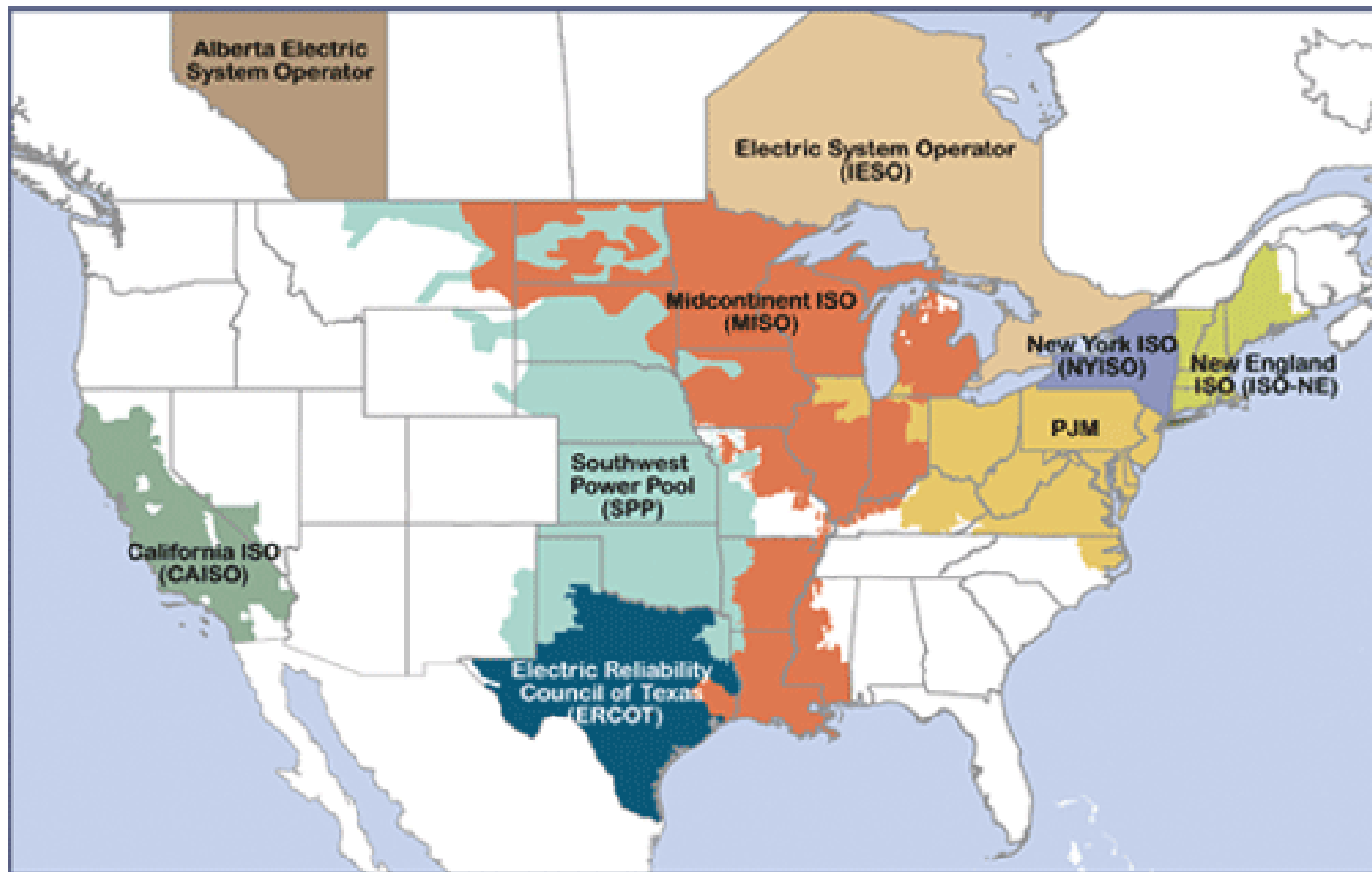


Wholesale vs. Retail Market



- Wholesale energy markets are regulated at the national level by the Federal Energy Regulatory Commission (FERC); energy is considered wholesale when it is possible it might be sold again before reaching the end customer
- Wholesale energy markets allow for energy to be purchased and sold by a variety of market participants, including utilities, retail energy providers, municipal utilities, public utility districts, rural cooperatives, and energy marketers
- Wholesale market participants purchase and sell energy from generating resources (owned by independent power producers or utilities), for final delivery to retail end-use customers
- Retail energy markets are regulated by the state in which the retail sale occurs, and consist of retail providers selling energy to industrial, commercial and residential end users

Existing Wholesale Electric Markets



Source: www.ferc.gov

Traditional vs. Organized Wholesale Market



- Traditional (“Bilateral”) Wholesale Markets
 - Operate with bilateral contracts – a buyer and a seller negotiate directly and sign a two-party contract to trade electric power for both long-term and short-term transactions
 - FERC ensures that energy prices for the bilateral contracts are just and reasonable and authorizes sales at market- or cost-based rates depending on whether a supplier has concentrated ownership in the market
 - Transmission and Reliability Services are provided by Transmission Owners who deliver the electric power from buyers to sellers and use generation they own or control to ensure supply and demand are balanced and the grid is operated reliably
- Organized Wholesale Markets (“ISOs”)
 - ISOs operate a central clearing house for short-term electric power transactions and also incorporate bilateral (typically long-term) transactions between participants
 - FERC ensures just and reasonable prices by approving the market rules and algorithms used to produce clearing prices and requires ISOs to have Independent Market Monitors to watch prices and investigate unusual outcomes
 - Transmission and Reliability services are provided by the ISO which use generation procured from the clearing house market to balance supply with demand and ensure grid reliability

Organized Wholesale Markets are Complex



- There is no standard market design for every ISO; design elements can include:
 - Energy products (day ahead, real time, fifteen minute bidding for variable resources, ramping, reliability must run)
 - Ancillary service products (voltage support, regulation, frequency response, contingency reserves)
 - Capacity products (planning reserves and capacity margins annually, monthly, hourly)
 - Congestion revenue rights
 - Virtual or financial trading on system (no delivery or acceptance of power)
 - Transmission ownership rights
 - Access to transmission system
 - Transmission charges and billing
 - System operations in normal and emergency conditions (scheduling, forecasting, dispatch, curtailments)
 - Outages and outage management
 - Metering
 - Creditworthiness
 - Dispute resolution
 - Market monitoring
 - Market power mitigation
 - Settlements and billing processes
 - Collecting revenue requirement for cost of administration and operations
- Establishing and operating an ISO is costly
- Why is Nevada discussing organized wholesale markets?
 - One reason: Question 3, if passed, would likely require an organized wholesale market

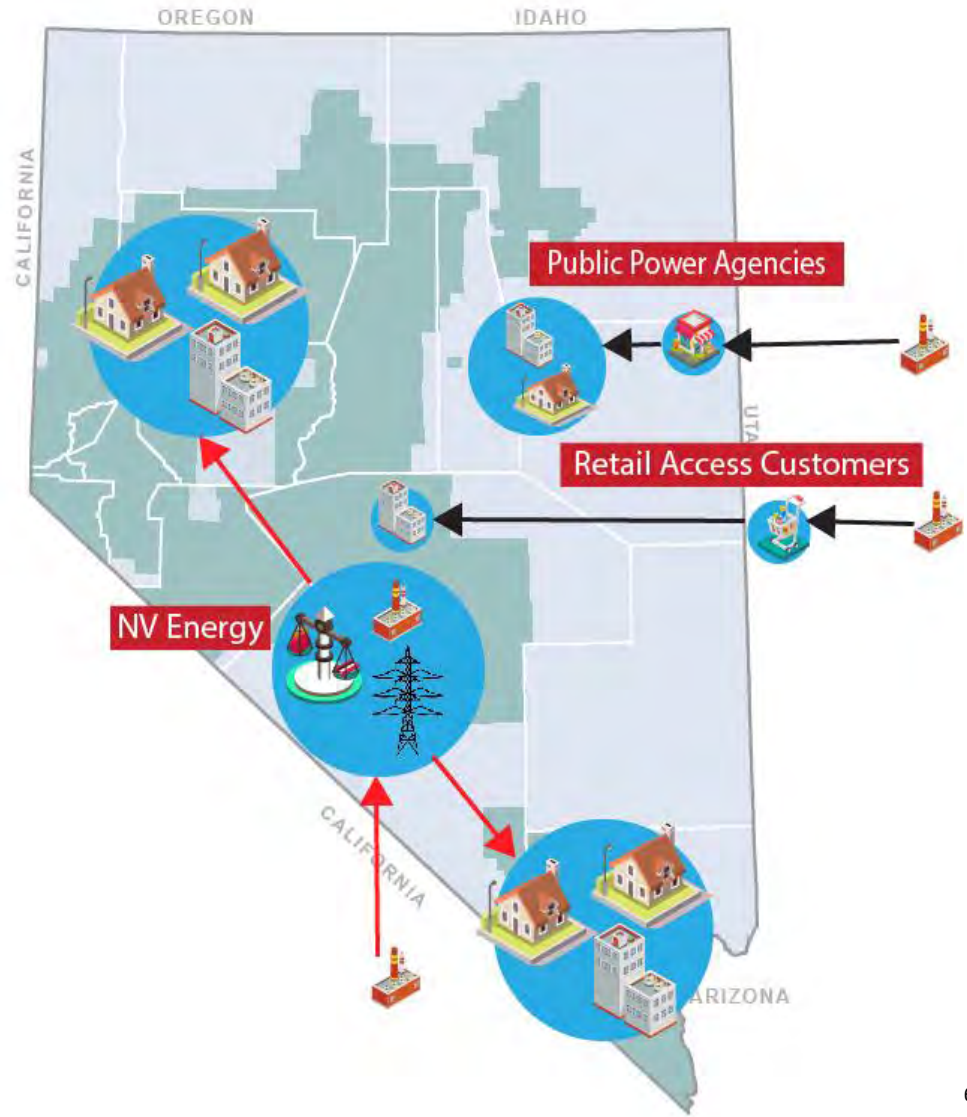
Nevada's Energy Market Today



NV Energy currently serves the majority of Nevada's retail load with its own energy portfolio

Public Power Agencies (rural co-ops, municipal power agencies) and retail access (704b) customers are served by other providers

NV Energy provides transmission service and balances all supply and demand for Nevada (including public power and 704b customers) through use of the generation fleet it owns and controls



Nevada's Energy Market if Question 3 is Implemented

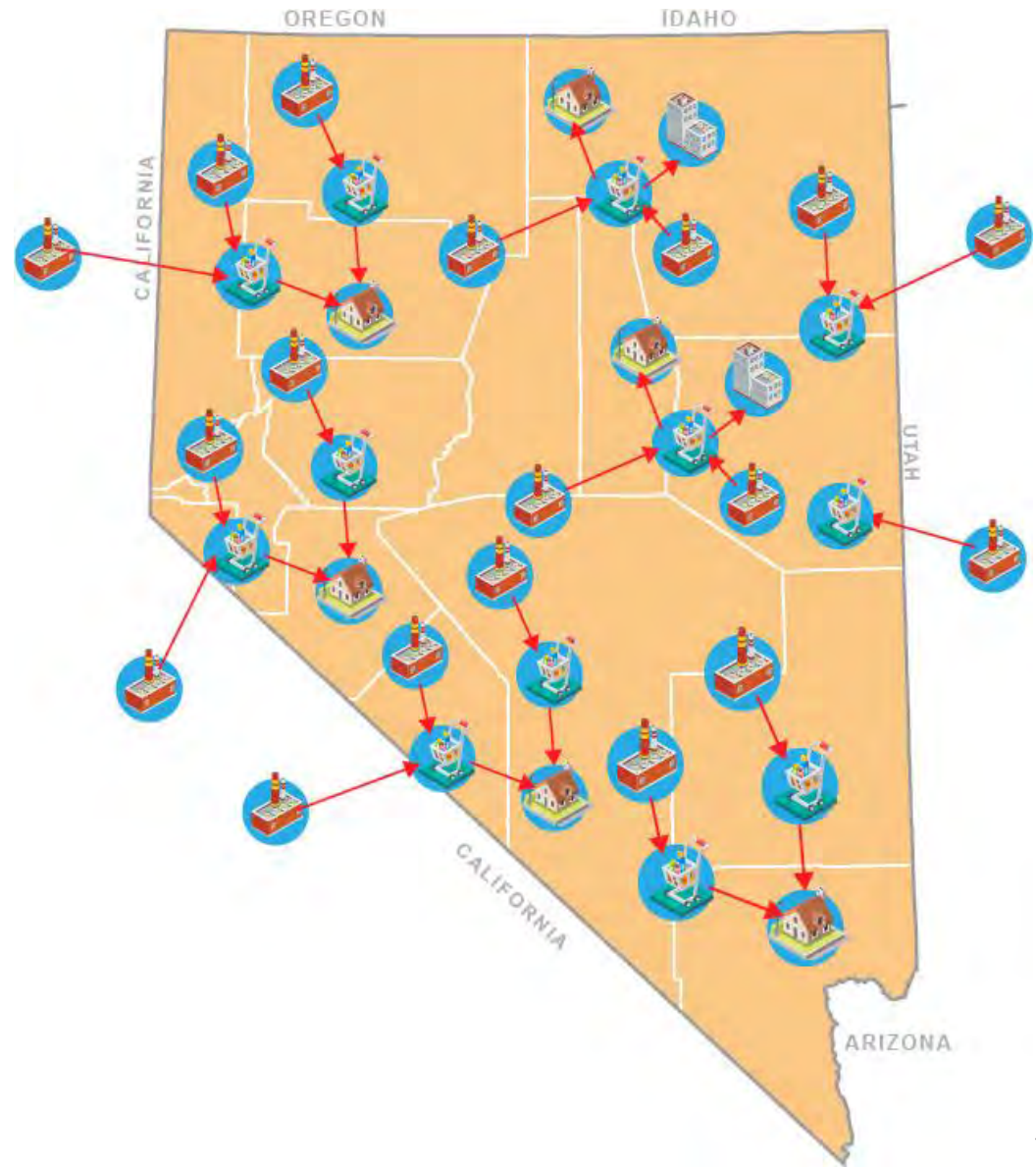


More retail providers would serve smaller fractions of the total retail load in Nevada

- A market solution of retail providers to access a liquid market to procure and optimize supply for the smaller fractions of load would be necessary

NV Energy would continue to own the transmission system, but would not own generation to balance the supply and demand for Nevada and ensure reliable grid operations

- A market solution for balancing and grid reliability services would be necessary



Important Aspects to Consider when Evaluating Wholesale Market Options



- Must Haves
 - Reliable operations
 - Nondiscriminatory transmission access
 - Resource adequacy program with valid price signals to incent new supply
 - Transparent and liquid market that produces reasonable prices
 - Implementation / facilitation of Nevada's public policy goals
 - Acceptable governance structure with appropriate representation for Nevadans
- Other Considerations
 - Cost of establishing / operating the ISO - Nevada's allocated share of the costs
 - Transmission investment decisions and cost allocation of existing and new transmission costs to Nevadans
 - Resource and load diversity to provide benefits to Nevada (does market compliment or impair renewable resource management issues?)
 - Adequate transfer capacity between Nevada to the market (would new investment be required?)
 - Impact on Nevada jobs and revenues
 - Support of Nevada's retail market and time to establish if Question 3 passes

Potential Benefits of Participating in a Larger Regional Market



- Efficient unit commitment and dispatch – may lower wholesale energy costs by optimizing all supply across a larger geographic area
- Lower peak capacity needs – Peak load diversity reduces generation capacity needed for the larger geographic footprint
- Efficient renewable and intermittent generation management
- Lower cost of new supply procurement – through joint planning and more diverse resources
- Emissions Reductions associated with lower capacity needs and renewable generation management
- Effective coordination of regional transmission planning
- Centralized regulatory compliance
- Enhanced reliability

Wholesale Market Options



- Existing wholesale (bilateral) Nevada market
- Establish a Nevada ISO
- California ISO (CAISO)
- Peak / PJM Market Services Proposal
- Southwest Power Pool (SPP)

Steps for Nevada to Establish a Wholesale Market Structure



- State determines funding source and process for evaluating Nevada's wholesale market options
- Determine which wholesale market option to pursue
- Regional stakeholder processes to establish governance structure, market design, and rules
- Regulatory processes to approve market and rules
- Systems integration, vendor procurement, stakeholder education
- Testing
- Launch