



PROTECTING THE WEST'S LAND, AIR, AND WATER

Advancing a Regional Power Market for Cleaner, More Reliable, and Affordable Energy

How we power our homes and businesses is changing rapidly. Driven by increased demand for cleaner energy and the rapidly declining cost of renewable energy, the electricity sector is undergoing a rapid transition away from the conventional fossil fuel-based resources of the past. The formation of a regional power market is an essential tool to meet the challenges of the future by delivering clean, reliable and affordable electricity to power our homes and businesses.

A Regional Power Market Increases the Use of Clean Renewable Energy

Renewable resources like wind and solar provide clean, emissions-free, low-cost power. However, because these resources are variable by nature—i.e., each generator can provide power only when the wind is blowing and the sun is shining locally—to ensure sufficient power is available when needed, other generating resources such as natural gas-fired power plants must be available to fill in the gaps.

The larger geographic footprint of a regional market facilitates the reliable delivery of renewable energy. The sun is usually shining and the wind blowing somewhere in the West, even if not locally. For example, the sun comes up early in New Mexico and sets late in Washington State. The wind blows strongly most of the night in the Columbia Gorge and falls off just as the sun rises in solar rich states. And in Wyoming, the wind just blows. A regional market matches these sources of power with demand from our homes and businesses, enabling participating utilities to take advantage of distant as well as local renewable energy.





A Regional Power Market Improves Efficiency, Lowers Costs, and Promotes Economic Growth

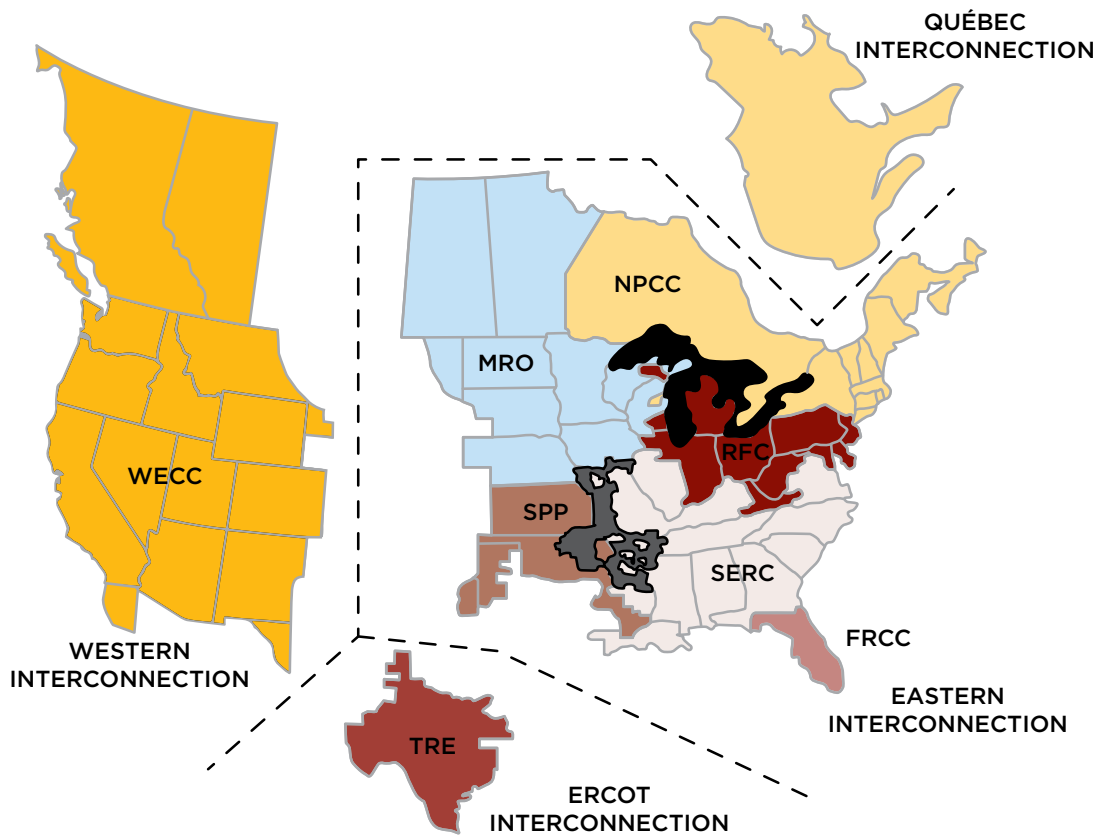
A regional power market efficiently deploys the lowest-cost energy from across the region to meet the needs of an expanded geographic footprint, thereby lowering costs. And, through lower energy prices, a regional market can spur economic growth. Lower electricity prices translate into greater household income, and more income to spend can stimulate local economies. Furthermore, areas of the West that are rich in renewable resources receive the additional economic stimulus from the construction and maintenance of new renewable generation.

A Regional Power Market Makes the Best Use of the West's Transmission Grid, Reducing the Need for Expensive and Potentially Environmentally Disruptive New Transmission Lines

Currently, sellers of electricity in the West must enter into contracts to move power from one location to another over long distances. For example, a utility in Montana may have power to sell to a utility in San Diego. To move that power, the utility may contract with multiple transmission operators through Oregon and California. However, since electricity follows the laws of physics rather than the contract path, this electricity may actually flow south through Utah (rather than the contracted Oregon/California path), unexpectedly overloading and stressing that part of the grid. To protect against this type of overloading, the lines in Utah may routinely be operated well below their full capability.

By contrast, a regional market is operated by a grid operator using highly sophisticated software, monitors, and computers that allow it to see the way electricity actually flows. This allows the transmission system to be more fully utilized and reduces the need to build expensive new transmission. Making more efficient use of the existing grid not only saves money, but also avoids potential harm to recreation areas, habitat, endangered species, and iconic landscapes.

Figure 1 **The West is One Large Integrated Network**



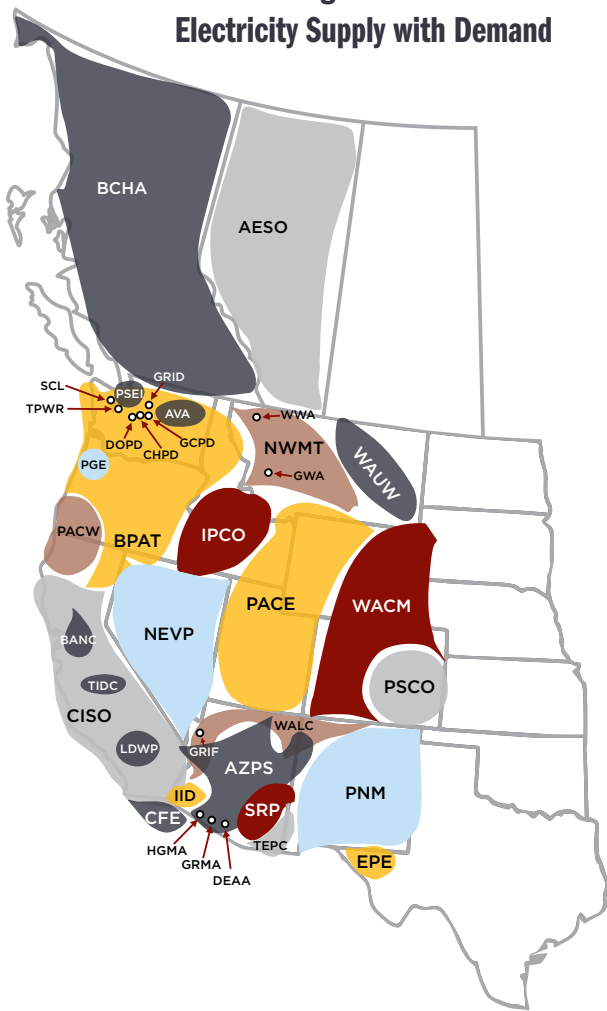
A Regional Power Market Enhances Reliability, Reducing the Risk of Blackouts

The transmission system in the West (also called the Western Interconnection) is one large integrated network that includes British Columbia and Alberta, Canada; all or parts of fourteen western states in the US; and the northern portion of Baja, Mexico (see Figure 1). Due to its interconnected nature, a glitch in any part of this large grid can lead to service interruptions hundreds of miles away. A regional power market would automate and significantly enhance the reliable delivery of power across the western grid.



Figure 2

The Western Interconnected Grid has 38 Balancing Authorities Coordinating Electricity Supply with Demand



In the West today, 38 separate entities, referred to as Balancing Authorities, match power generation to the demand from homes and businesses within their local areas (see Figure 2). Each has a relatively good understanding of its own operations, but the ability to view their neighbors' transactions is limited. Traders buy and sell electricity in large blocks, and most trades are arranged manually—by email or telephone. When an event occurs that poses a threat to the larger grid, such as the loss of a large generator or transmission line, the entity with the legal responsibility to assure reliability in that local area must locate additional power and available transmission. This can be time consuming, and deteriorating conditions on an interconnected grid can cause blackouts that can spread to neighboring utilities' systems.

A regional power market can improve reliability. By using sophisticated software, monitors, and other equipment, the regional power market's grid operator can view generation levels, power flows, and resource availability across the entire expanded footprint. In industry parlance, this is called "situational awareness." If a large unit or transmission line is lost, the system software swiftly and automatically re-deploys available generation using available transmission, reducing the risk of blackouts. Strengthening the reliable operation of the electricity grid is good for consumers.

It's Time for the West to Gain the Advantages of a Regional Power Market

Sixty percent of the country already enjoys the benefits of regional power markets, which include lower costs, improved transmission reliability, and increased use of renewable energy. It's time for the West to join in these benefits. A regional power market will increase our use of clean and renewable energy, improve electric grid reliability, help boost our local economies, and lower costs.

Figure 1 Note The Western Interconnection is one of four interconnections in North America. The North American Electric Reliability Corporation, or NERC, is responsible for ensuring reliability in only the US portions of these interconnections. The Western Electricity Coordinating Council, or WECC, coordinates with NERC to ensure electric grid reliability in the Western Interconnection. Image courtesy of the North American Electric Reliability Corporation. Figure 1 was originally titled "NERC Interconnections".

Figure 2 Note The Western Interconnection contains 38 separate Balancing Authorities that balance electricity supply with demand within their respective geographic areas. A regional market consolidates the number of Balancing Authority Areas, reducing fragmentation.

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