



CLEAN ENERGY VISION

WESTERN GRID 2050: CONTRASTING FUTURES, CONTRASTING FORTUNES

New report reveals long-term clean energy plan as best way to boost the West's economy, security & health

The Western United States stands at an energy crossroads. States will invest \$200 billion in electric infrastructure over the next 20 years, to replace aging facilities and provide for growing needs. Decisions made today will have economic and environmental consequences for decades.

A new report, *Western Grid 2050: Contrasting Futures, Contrasting Fortunes*, examines two very different energy futures western states can choose to build with this investment: Business as Usual; or Clean Energy development.

Moving to clean energy, the report shows, can create more jobs and drive more robust economic development in western states than other investments can. If carefully planned, low-carbon electricity can be more secure and sustainable than our electric system today. While substantial investment will be required, electricity bills can be lower for consumers who aggressively pursue efficiency and conservation opportunities. Orderly transition to more diverse and decentralized resources can provide a foundation for new prosperity.

If states don't make a conscious choice to move to clean energy, it's likely electric service will evolve along a Business As Usual trajectory. *Western Grid 2050* is intended to begin a dialogue on the alternatives, so westerners can make an informed choice.

The report was prepared by Dr. Carl Linvill, John Candelaria and Ashley Spalding for Western Grid Group and Western Clean Energy Advocates. It is the first of a suite of materials from the two groups proposing sustained, orderly transition to clean energy across the western US.

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A Tale of Two Energy Futures

The report provides the first comprehensive overview of the economic, environmental, reliability and public health implications of these two very different development trajectories:

BUSINESS AS USUAL

This kind of development will add limited amounts of energy efficiency and geothermal, wind and solar power to utility portfolios, but the West would continue to get the majority of its power from coal and gas. Fuel price and supply risk are likely to increase. Air pollution, carbon emissions and water use will grow. The grid will remain as vulnerable as it is today. States will miss opportunities to lead development of clean energy technologies.

CLEAN ENERGY FUTURE

Instead, guiding investment toward a Clean Energy Future can enable much larger energy efficiency savings. Low-carbon energy can supply most of the power needed. The information technologies we rely on to connect to one another via computer and smartphone can also operate a smarter, more diverse and decentralized grid, providing greater security and reliability. Liabilities and risk, emissions, water use, and potentially the cost of electricity all decrease, as states gradually transition away from coal. State economies can become more competitive and robust as investment in clean technologies grows.

RETHINKING OUR ELECTRIC SYSTEM

How can those of us in western states evolve the ways we produce and consume electricity to put us in the best position to respond to the challenges of coming decades? *Western Grid 2050* provides a long-term perspective on production, distribution and use of energy resources and infrastructure to guide near-term development decisions.

Instead of looking primarily at short-term cost, the report evaluates longer-term effects of resource choices on our economy, security, environment and public health. This provides a more comprehensive and holistic look at the performance differences between Business As Usual and Clean Energy development trajectories.

For the period 2010-2050, the analysis examines two Business As Usual development scenarios: a base case and a high growth case. It compares these to three Clean Energy Vision trajectories: a low demand growth case; a base case; and a high demand growth case geared to supply larger amounts of low-carbon power if events increase electricity demand faster than efficiency measures can decrease it.

The two development paths create very different consequences—to western state economies, energy security and public health. These differences result from the distinct infrastructure needs of clean energy development versus the carbon-generated electricity upon which we now rely. They entail different approaches to the way electric service is planned and regulated, and the way the grid is operated. One of the purposes of the report is to frame key questions for further research into all of these dynamics.

UNIQUE FOCUS ON THE WESTERN US

Many studies in recent years have analyzed clean energy and low carbon futures for the US as a whole, for Europe, and for the global economy. *Western Grid 2050* is the first to focus only on the Western Interconnection out to 2050.

The report is based on, and extrapolates from, data collected from utilities and states by the Western Electricity Coordinating Council. It builds on the Western Renewable Energy Zone and Clean and Diversified Energy initiatives of the Western Governors Association. It looks at energy policies in place in western states. It attempts to quantify land and habitat impacts of both alternative development trajectories on the eleven states.

ORDERLY TRANSITION: BUILDING ON POLICIES NOW IN PLACE

Most western states already have renewable energy purchase targets, and several have been increasing them. Many have energy efficiency programs, and building and appliance energy use standards. The report shows how states can build on these policies to guide an orderly transition to a more secure, robust and cleaner future.

The key is sustained investment in clean energy resources, and sustained retirement of fossil fuels. Instead of refurbishing old coal plants and building new gas-fired generators, states can diversify the resources they rely on.

States can modernize and expand electric service to take advantage of new capabilities for saving energy, for using customer demand resources and electric vehicles, distributed generation, peak-shifting and energy storage, and use of information and control technologies. *Transition to Clean Energy: Policy And Investment Decisions for Western States*, soon to be released by Western Grid Group, identifies the many policies available to states to guide such a transition.

Information about WGG's work and staff is available at <http://www.westerngrid.net/about/>
WCEA goals, principles and participating organizations are available at <http://www.westerngrid.net/wcea/>

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REPORT AUTHORS AND SPONSORS

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Western Grid Group works to secure development of the infrastructure and policies needed to increase utilization of clean energy resources. WGG, a foundation-funded non-governmental organization, is staffed by former state regulators, energy project developers and state officials.

Western Clean Energy Advocates (WCEA) is a diverse and growing coalition working across the West to accelerate transition to clean and secure energy resources, and away from coal and gas.