

Charting a New Path for Nevada's Electricity Generation and Use



Nevada's energy future is at a crossroads

One path leads to increased dependency on fossil fuels—threatening our economy and fueling global warming. The other leads to a new, smarter energy future for Nevada. Investing in clean energy alternatives—like solar and wind power—can create and protect jobs in Nevada, save families and businesses money, and make America more energy independent. Clean energy is also the most effective solution to the threat of global warming. We can start making progress right away using proven technology, and then draw on American innovation to take us the rest of the way with new technologies.

How does Nevada generate electricity today?

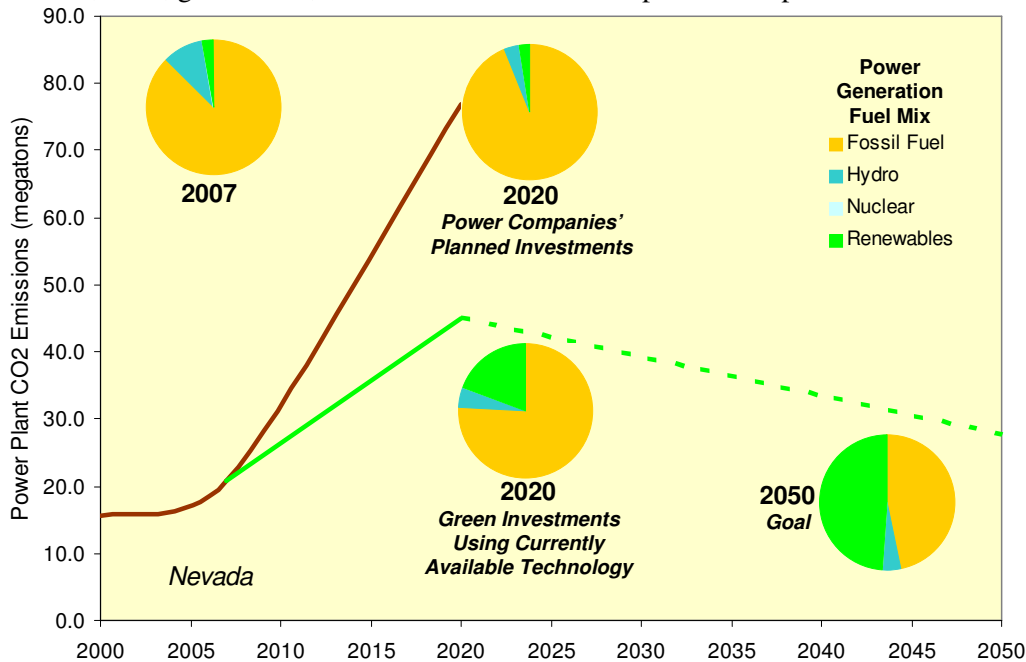
In 2007, electric power generated in Nevada primarily came from coal (27.1 percent), gas (45.4 percent), and hydro (9.8 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Nevada power companies plan to increase the energy generation from coal by 433.1 percent, gas by 54.0 percent. Only about 2.8 percent of electricity generated in Nevada is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Nevada has a choice to invest in a cleaner energy future

Nevada can achieve a new energy future by making better investments as utilities replace increasingly aged infrastructure and expand capacity. An important first step is for Nevada to generate at least 20 percent of electricity from renewable sources by 2020, a goal readily achievable with today's technology. Continuing to convert 15 percent of the state's energy portfolio to renewable energy sources each decade could yield an energy profile of at least 65 percent renewables by 2050.

Nevada can also benefit from improved energy efficiency. Technologies are available that could reduce demand nationally by 20 to 30 percent over the next decade. Innovations in energy efficiency should allow us to keep demand constant after 2020, even as the population grows.

Today, Nevada is ranked 21st in the nation for energy efficiency, largely because the state's utilities are already spending \$9 million annually to improve energy efficiency.



About the chart: 2000, 2007 and 2020 Power Companies' Planned Investments from CARMA 1.0 (www.CARMA.org). The 2020 Green Investments projection assumes that, using currently available technology, Nevada makes (1) improvements in efficiency to reduce overall demand by 25 percent and (2) shifts away from fossil fuels so that 20 percent of power generation is from renewable energy sources. The 2050 Goal assumes (1) hydro and nuclear are unchanged, (2) continued efficiency improvements keep total demand flat, and (3) renewable energy replaces at least 65 percent of power generation formerly done through fossil fuel burning. Note that the projection of future CO₂ emissions from fossil fuels assumes no investment in carbon capture and storage.

Making a Difference in Nevada

Nevada is home to the third largest concentrated solar power plant in the world and the largest photovoltaic power plant in North America. The region's vast solar potential has made Nevada a hot bed for solar manufacturing. In July 2008, Ausra opened a new solar thermal factory in Las Vegas. Currently the plant employs 50 people and aims to produce 700 megawatts worth of solar panels annually—creating enough energy to power half a million homes once they are installed. The Ausra factory is the largest producer of mirrors and absorber tubes used in large-scale solar plants. The construction and installation of panels at the plant could provide 1,400 jobs every year.



Sources:

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Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Nevada can reduce its future carbon dioxide (CO₂) emissions from electricity generation by 41 percent compared to the business-as-usual path that utilities are following now.

Given that 53 percent of Nevada's CO₂ emissions come from electricity generation, diversifying and updating our power sources is critical for cutting the state's total global warming pollution.

Increasing Nevada's energy and economic security

Investing in renewable energy sources will reduce Nevada's dependence on fossil fuels and at the same time create new green collar jobs. A new energy future in Nevada could include:

Expanded solar power. Nevada has enough solar resources to produce 5,000 to 6,500 Whr per square meter using photovoltaic systems and 5,000 to 7,000 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in Nevada to solar power can provide enough electricity for about 1,600

households each year.

Expanded wind power. Nevada is currently ranked 39th for wind power. The American Wind Energy Association ranks Nevada 21st in terms of its future wind potential, with 5,740 MW of potential capacity.

Biomass power. Nevada has 0.3 million dry tons of biomass available each year that could be used to generate about 60 MW of electricity.

Geothermal power. Nevada has 42 geothermal projects under development, with the potential to produce as much as 1,902 MW of new power capacity.

New Jobs. A nationwide investment in green infrastructure of \$100 billion over the next two years could yield 1,135 jobs in solar power and 977 jobs in wind power for Nevada. That's 1,790 more jobs than an equivalent investment in conventional power would create.

How does Nevada use electricity?

Nevada's energy is used to power:

- homes (35 percent),
- businesses (26 percent), and
- industry (39 percent).

Per capita residential electricity use is 4,806 kilowatt hours per year, near the national average.

References and Additional Reading:

American Council for an Energy-Efficiency Economy,
www.aceee.org.

American Wind Energy Association, www.awea.org.

Bioenergy Feedstock Information Network, bioenergy.ornl.gov

CARMA (Carbon Monitoring for Action), www.CARMA.org.

Database of State Incentives for Renewables and Efficiency,
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Geothermal Energy Association, www.geo-energy.org.

McKinsey Global Institute, 2007: *Wasted Energy: How the U.S. Can Reach its Energy Productivity Potential*.

Political Economy Research Institute, www.peri.umass.edu.

Renewable Energy Policy Project, www.repp.org.

For more information, visit www.nwf.org/globalwarming.