

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



Utah'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 Utah. Investing in clean energy alternatives—like solar and wind power—can create and protect jobs in Utah, 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 Utah generate electricity today?

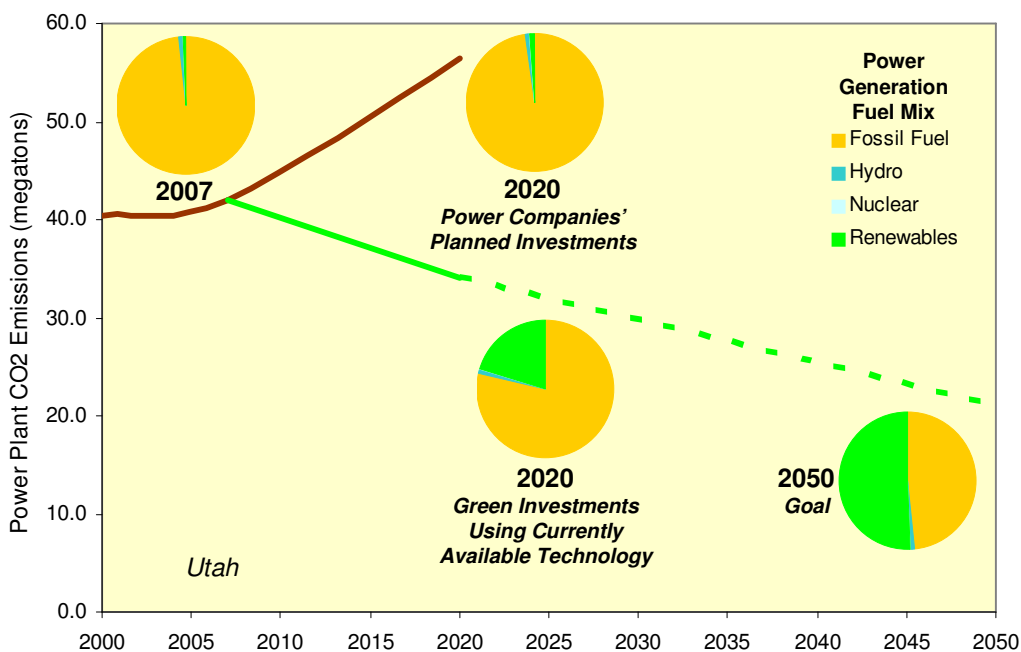
In 2007, electric power generated in Utah primarily came from coal (92.1 percent), and gas (5.1 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Utah power companies plan to increase the energy generation from coal by 40.4 percent, gas by 47.0 percent. Only about 0.4 percent of electricity generated in Utah is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Utah has a choice to invest in a cleaner energy future

Utah 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 Utah 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.

Utah 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, Utah is ranked 17th in the nation for energy efficiency, largely because the state's utilities are already spending \$17 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, Utah 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 Utah

Production of geothermal energy is on the rise in the United States. New geothermal projects in the West are expected to create 7,000 permanent jobs. Utah currently has two existing geothermal power plants and six more are in development. Geothermal is used throughout the state in everything from commercial greenhouses to resort swimming pools. The new plants are expected to produce enough electricity to power 244,000 homes.

Sources:

<http://deseretnews.com/article/1,5143,700249098,00.html>

http://geology.utah.gov/emp/geothermal/geothermal_use_utah.htm



Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Utah can reduce its future carbon dioxide (CO₂) emissions from electricity generation by 40 percent compared to the business-as-usual path that utilities are following now.

Given that 53 percent of Utah'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 Utah's energy and economic security

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

Expanded solar power. Utah has enough solar resources to produce 5,000 to 6,000 Whr per square meter using photovoltaic systems and 5,000 to 6,500 Whr per square meter using concentrating solar power systems.

This means that devoting just 1 square mile in Utah to solar power can provide enough electricity for about 1,500 households each year.

Expanded wind power. Utah is currently ranked 34th for wind power, with 1 MW of existing electricity generation capacity and 19 MW under construction. The American Wind Energy Association ranks Utah 26th in terms of its future wind potential, with 2,770 MW of potential capacity.

Biomass power. Utah has 0.7 million dry tons of biomass available each year that could be used to generate about 100 MW of electricity.

Geothermal power. Utah has 6 geothermal projects under development, with the potential to produce as much as 244 MW of new power capacity.

How does Utah use electricity?

Utah's energy is used to power:

- homes (31 percent),
- businesses (37 percent), and
- industry (32 percent).

Per capita residential electricity use is 3,191 kilowatt hours per year, 29 percent less than 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, www.dsireusa.org.

Department of Energy, Energy Efficiency and Renewable Energy, apps1.eere.energy.gov/states/alternatives/electricity.cfm.

Energy Information Administration, State Energy Data System, www.eia.doe.gov/emeu/states/_seds_updates.html.

Environmental Protection Agency, Energy CO₂ emissions by state, www.epa.gov/climatechange/emissions/state_energyco2inv.html.

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.