

Charting a New Path for West Virginia's Electricity Generation and



West Virginia'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 West Virginia. Investing in clean energy alternatives—like solar and wind power—can create and protect jobs in West Virginia, 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.

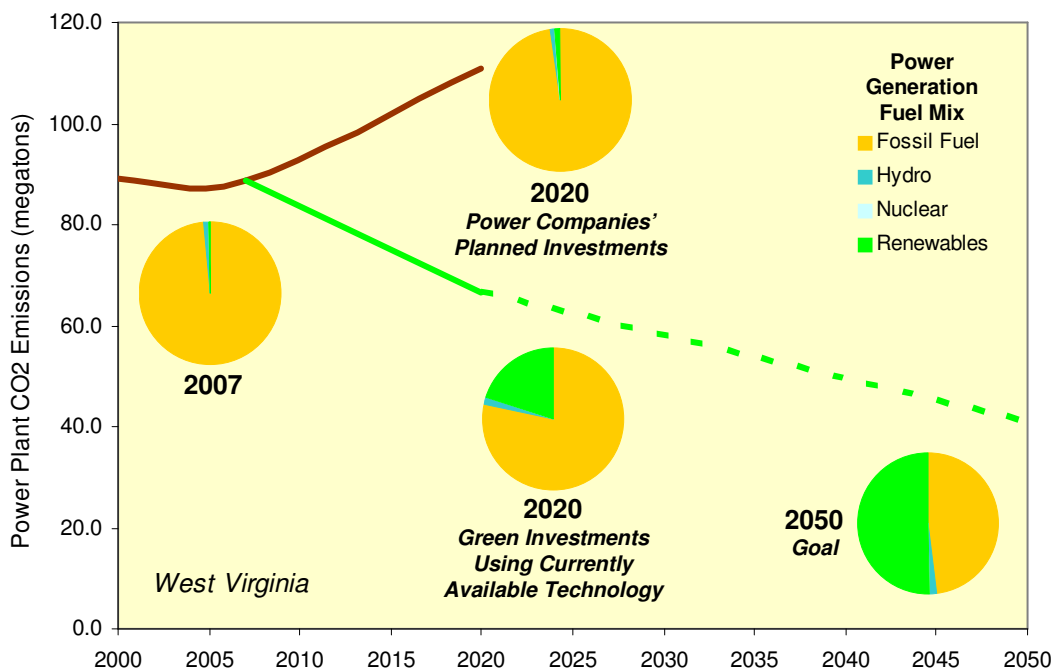
How does West Virginia generate electricity today?

In 2007, electric power generated in West Virginia primarily came from coal (98.4 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. West Virginia power companies plan to increase the energy generation from coal by 14.7 percent. Only about 0.2 percent of electricity generated in West Virginia is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

West Virginia has a choice to invest in a cleaner energy future

West Virginia 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 West Virginia 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.

West Virginia 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.



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, West Virginia 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 West Virginia

Renewable energies have been slow to catch on in West Virginia. The state is currently the second largest producer of coal and produces nearly all of its electricity from coal-powered plants. However, residents of the Coal River Valley who are fed up with the coal industry's environmental destruction and poor treatment of its workers are trying to move the state toward green energy. When a 6,600 acre strip mine was proposed in the region, local citizens joined together to create their own counter proposal: a 440 megawatt wind farm called the Coal River Mountain Wind Project. The project would create 200 construction jobs and 50 permanent on-site jobs, and produce enough electricity for 150,000 homes. Unlike the strip mine this project would not destroy the mountain and would create sustainable energy for countless years. All eyes are on West Virginia to see if this grassroots effort succeeds in stopping coal production with renewable sources.



Sources:

http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=WV

<http://www.alternet.org/environment/90991/>

Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, West Virginia 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 72 percent of West Virginia'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 West Virginia's energy and economic security

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

Expanded solar power. West Virginia has enough solar resources to produce 4,000 to 4,500 Whr per square meter using photovoltaic systems and 3,000 to 3,500 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in West

Virginia to solar power can provide enough electricity for about 900 households each year.

Expanded wind power. West Virginia is currently ranked 23rd for wind power, with 66 MW of existing electricity generation capacity and 264 MW under construction. The American Wind Energy Association ranks West Virginia 32nd in terms of its future wind potential, with 594 MW of potential capacity.

Biomass power. West Virginia has 3.7 million dry tons of biomass available each year that could be used to generate about 700 MW of electricity.

New Jobs. A nationwide investment in green infrastructure of \$100 billion over the next two years could yield 741 jobs in solar power and 666 jobs in wind power for West Virginia. That's 1,092 more jobs than an equivalent investment in conventional power would create.

How does West Virginia use electricity?

West Virginia's energy is used to power:

- homes (34 percent),
- businesses (23 percent), and
- industry (43 percent).

Per capita residential electricity use is 6,089 kilowatt hours per year, 35 percent greater 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.

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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.