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

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

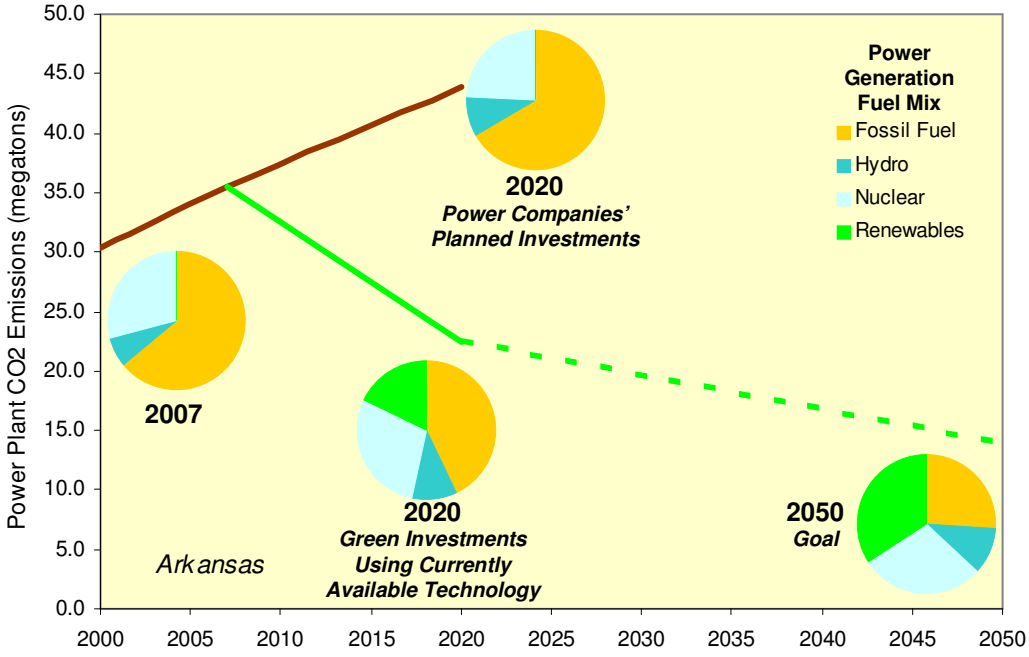
How does Arkansas generate electricity today?

In 2007, electric power generated in Arkansas primarily came from coal (45.9 percent), gas (11.4 percent), hydro (7.0 percent), and nuclear (29.1 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Arkansas power companies plan to increase the energy generation from coal by 24.7 percent, gas by 24.9 percent. Less than 0.1 percent of electricity generated in Arkansas is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Arkansas has a choice to invest in a cleaner energy future

Arkansas 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 Arkansas 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.

Arkansas 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, Arkansas 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 CO_2 emissions from fossil fuels assumes no investment in carbon capture and storage.

Making a Difference in Arkansas

In 2007, LM Glasfiber began construction in Little Rock of its newest North American plant. As the world's leading manufacturer of wind turbine blades, LM Glasfiber chose Arkansas for its proximity to Texas and Kansas, states with some of the highest wind potential. The plant produced its first set of blades in February 2008, by which time it had hired 190 employees. The company plans to provide a total of 1,000 jobs within the first 5 years of production. Arkansas Gov. Mike Beebe said the LM plant "elevates Arkansas's presence among the growing state and national interest in the renewable energy industry. This development is another step forward for our state's economy in today's global marketplace."

Sources:
http://arkansasrenews.com/
http://www.eere.energy.gov/inventions/energytechnet/resources/resultdetails/44
http://www.lmglasfiber.com/News/Archive/View News.aspx?id=%7BA8E6B227-1211-4B0F-AEF0-3BE94256D146%7D&y=2008

Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Arkansas can reduce its future carbon dioxide (CO_2) emissions from electricity generation by 49 percent compared to the business-as-usual path that utilities are following now.

Given that 42 percent of Arkansas's CO_2 emissions come from electricity generation, diversifying and updating our power sources is critical for cutting the state's total global warming pollution.

Increasing Arkansas's energy and economic security

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

Expanded solar power. Arkansas has enough solar resources to produce 4,500 to 5,500 Whr per square meter using photovoltaic systems and 4,000 to 4,500 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in Arkansas to solar power can provide enough electricity for about 1,200 households each year.

Expanded wind power. Arkansas is currently ranked 36th for wind power. The American Wind Energy Association ranks Arkansas 27th in terms of its future wind potential, with 2,460 MW of potential capacity.

Biomass power. Arkansas has 13.6 million dry tons of biomass available each year that could be used to generate about 2,700 MW of electricity.

New Jobs. A nationwide investment in green infrastructure of $100 billion over the next two years could yield 1,358 jobs in solar power and 1,157 jobs in wind power for Arkansas. That's 2,119 more jobs than an equivalent invesmtent in conventional power would create.

How does Arkansas use electricity?

Arkansas's energy is used to power:

- homes (37 percent),
- businesses (25 percent), and
- industry (39 percent).

Per capita residential electricity use is 6,075 kilowatt hours per year, 34 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.
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 CO_2 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.