

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



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

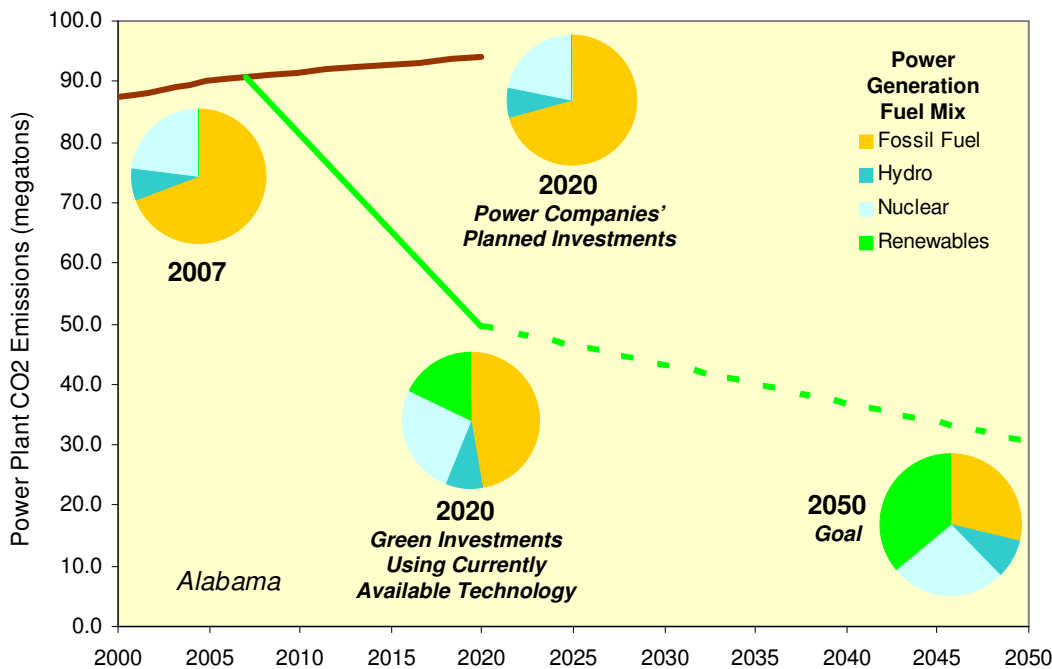
How does Alabama generate electricity today?

In 2007, electric power generated in Alabama primarily came from coal (50.6 percent), gas (12.2 percent), hydro (7.6 percent), and nuclear (23.1 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Alabama power companies plan to increase the energy generation from gas by 35.5 percent. Less than 0.1 percent of electricity generated in Alabama is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Alabama has a choice to invest in a cleaner energy future

Alabama 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 Alabama 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.

Alabama 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.



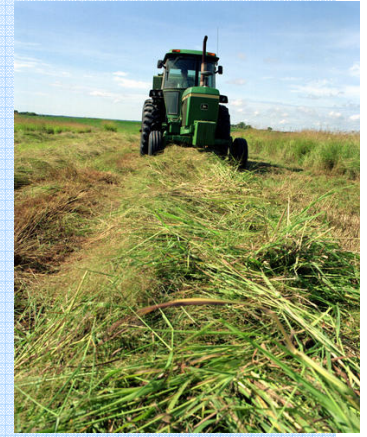
About the chart: 2000, 2007 and 2020 Power Companies' Planned Investments from CARMA 1.0 (www.CARMA.org). The 2020 Green Investments projection assumes that, using currently available technology, Alabama makes (1) improvements in efficiency to reduce overall demand by 25 percent and (2) shifts away from 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 Alabama

Businesses like the Alabama Power Company are leading efforts to harness Alabama's rich biomass resources. In 2003, the company began co-firing switch grass and coal in their Gadsden plant. By 2006, they had increased production of biomass by 300 percent. The state hopes to encourage other businesses to take advantage of the region's rich biomass resources. The Alabama Department of Economic and Community Affairs offers \$75,000 grants to assist in the installation of biomass systems at industrial sites.

Sources:

<http://uspowerpartners.org/Topics/SECTION2Topic-BiomassPower.htm>
[http://www.adeca.alabama.gov/C16/Biomass Energy Program/default.aspx](http://www.adeca.alabama.gov/C16/Biomass%20Energy%20Program/default.aspx)



Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Alabama can reduce its future carbon dioxide (CO₂) emissions from electricity generation by 47 percent compared to the business-as-usual path that utilities are following now.

Given that 54 percent of Alabama'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 Alabama's energy and economic security

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

Expanded solar power. Alabama has enough solar resources to produce 4,500 to 5,500 Whr per square meter using photovoltaic systems and 3,500 to 4,500 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in Alabama to

solar power can provide enough electricity for about 1,200 households each year.

Expanded wind power. Alabama is currently ranked 44th for wind power, with MW of existing electricity generation capacity. The American Wind Energy Association ranks Alabama 45th in terms of its future wind potential.

Biomass power. Alabama has 17.7 million dry tons of biomass available each year that could be used to generate about 3,500 MW of electricity.

A stronger economy. Alabama could realize as many as 3,571 jobs manufacturing wind turbines and \$1.19 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

How does Alabama use electricity?

Alabama's energy is used to power:

- homes (36 percent),
- businesses (24 percent), and
- industry (40 percent).

Per capita residential electricity use is 7,032 kilowatt hours per year, 55 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 CO₂ emissions by state, www.epa.gov/climatechange/emissions/state_energyc2inv.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.