Charting a New Path for North Carolina's Electricity Generation and

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

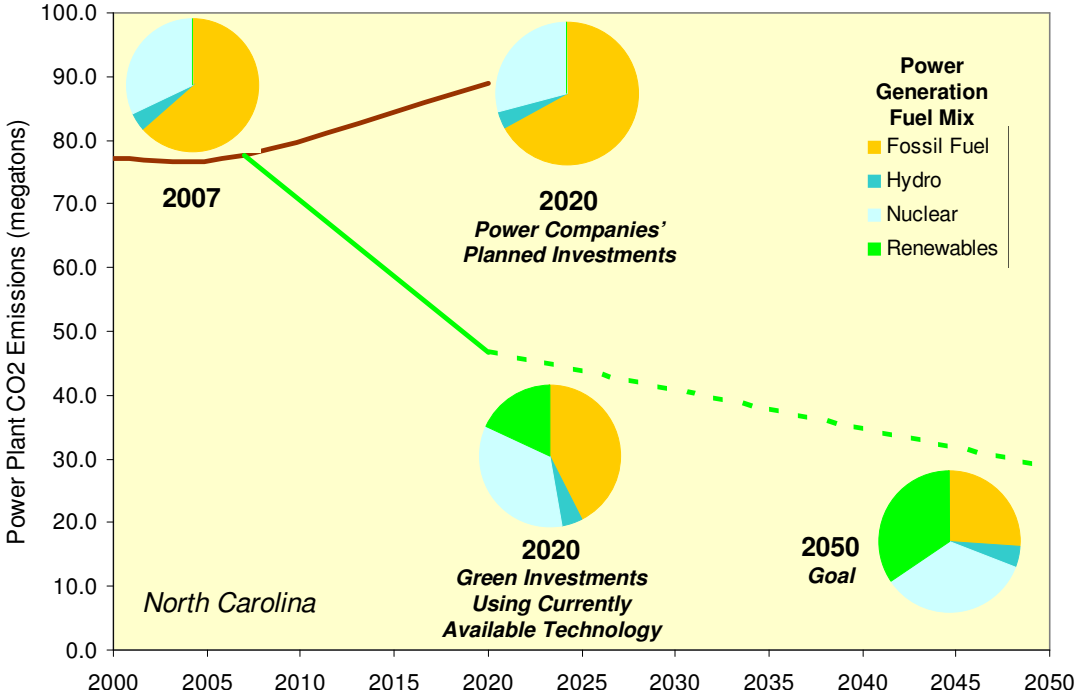
How does North Carolina generate electricity today?

In 2007, electric power generated in North Carolina primarily came from coal (57.5 percent), hydro (4.4 percent), and nuclear (32.3 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. North Carolina power companies plan to increase the energy generation from coal by 15.3 percent. Less than 0.1 percent of electricity generated in North Carolina is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

North Carolina has a choice to invest in a cleaner energy future

North Carolina 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 North Carolina 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.

North Carolina 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, North Carolina 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 North Carolina

North Carolina's Research Triangle Park is home to some of the state's most energy efficient buildings, including the Environmental Protection Agency's National Computer Center. The National Computer Center houses one of the largest solar panel installations on the east coast, capable of producing 100 kilowatts. The center has also implemented energy efficiency features such as green lighting and improved heating and cooling systems. The facility uses street lamps equipped with individual solar panels on all of the parking lots and the facility roadways, making up the longest roadway in the United States lit only with solar panels. Other companies in North Carolina are taking advantage of solar power. In January 2008, Delta Products' office in Research Triangle Park started producing solar power with its own 160 panel roof-mounted system. It is the largest corporate-owned solar system in North Carolina.

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, North Carolina can reduce its future carbon dioxide (CO_2) emissions from electricity generation by 47 percent compared to the business-as-usual path that utilities are following now.

Given that 46 percent of North Carolina'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 North Carolina's energy and economic security

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

Expanded solar power. North Carolina 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 North Carolina to solar power can provide enough electricity for about 1,200 households each year.

Expanded wind power. North Carolina is currently ranked 43rd for wind power, with MW of existing electricity generation capacity. The American Wind Energy Association ranks North Carolina 31st in terms of its future wind potential, with 835 MW of potential capacity.

Biomass power. North Carolina has 10.9 million dry tons of biomass available each year that could be used to generate about 2,200 MW of electricity.

New jobs. Committing to a 30 percent growth in solar energy use in the United States will bring 1,078 jobs and $874 million investment to North Carolina.

A stronger economy. North Carolina could realize as many as 4,661 jobs manufacturing wind turbines and $1.55 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

References and Additional Reading:

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