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

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

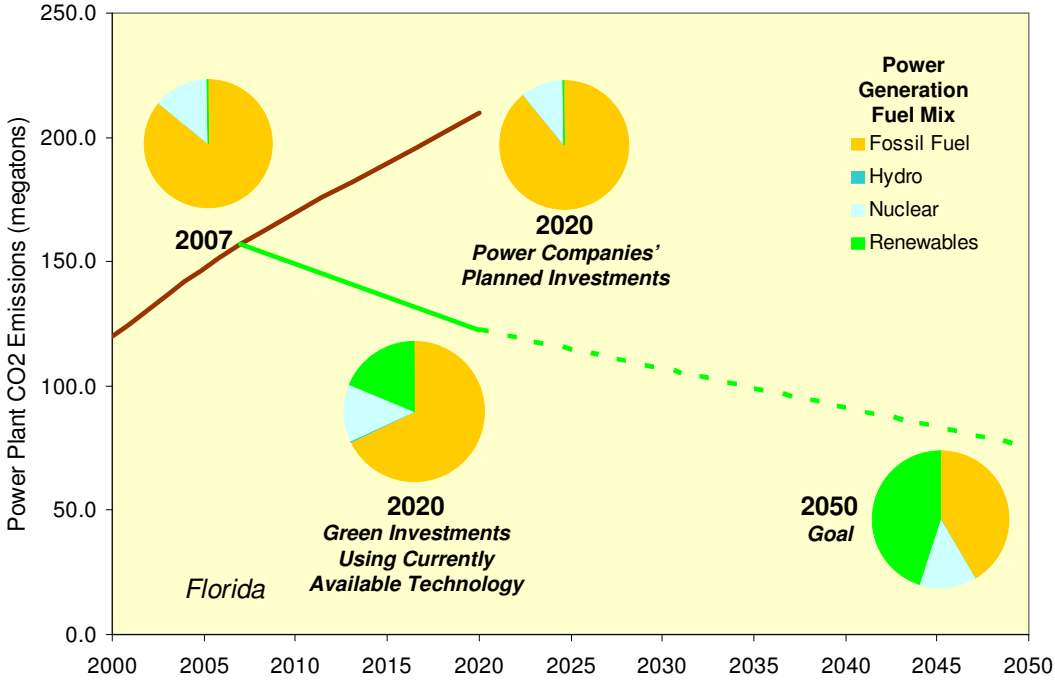
In 2007, electric power generated in Florida primarily came from coal (31.3 percent), oil (14.8 percent), gas (29.1 percent), and nuclear (13.9 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Florida power companies plan to increase the energy generation from coal by 39.7 percent, oil by 11.6 percent, and gas by 39.7 percent. Only about 0.1 percent of electricity generated in Florida is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Florida has a choice to invest in a cleaner energy future

Florida 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 Florida 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.

Florida 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, Florida is ranked 19th in the nation for energy efficiency, largely because the state's utilities are already spending $72 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, Florida 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 Florida

At the Florida Solar Energy Center at the University of Central Florida, researchers have been working for more than 30 years to develop innovative energy solutions. Founded in 1975, the Center researches, tests and certifies solar power systems, and develops educational programs in the field. The award-winning Center has earned numerous patents for its energy saving designs.

Businesses are doing their part to create Florida's new energy future. In February 2008, Florida Power & Light Company opened the second largest solar array in the southeast United States, producing 250 kilowatts of power. The company has two larger projects planned, a 25 megawatt plant in DeSoto County and a 10 MW plant at the Kennedy Space Center. With continued research and increased investment, Florida is positioned to become a solar powerhouse in the south.

Sources:
http://news.cnet.com/8301-11128_3-9987303-54.html?hhTest=1
http://ecolocalizer.com/2008/02/14/up-and-running-floridas-largest-solar-array/
http://www.fsec.ucf.edu/en/about/index.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, Florida can reduce its future carbon dioxide (CO_2) emissions from electricity generation by 42 percent compared to the business-as-usual path that utilities are following now.

Given that 49 percent of Florida'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 Florida's energy and economic security

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

Expanded solar power. Florida has enough solar resources to produce 5,000 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 Florida to solar power can provide enough electricity for about 1,200 households each year.

Expanded wind power. Florida is currently ranked 47th for wind power, with MW of existing electricity generation capacity. The American Wind Energy Association ranks Florida 46th in terms of its future wind potential.

Biomass power. Florida has 9.5 million dry tons of biomass available each year that could be used to generate about 1,900 MW of electricity.

Geothermal power. Florida has 1 geothermal project under development, with the potential to produce as much as 1 MW of new power capacity.

New jobs. Committing to a 30 percent growth in solar energy use in the United States will bring 1,144 jobs and $935 million investment to Florida.

A stronger economy. Florida could realize as many as 3,371 jobs manufacturing wind turbines and $1.12 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

Consumer savings. Reducing electricity demand in Florida by 29 percent below what is projected for 2023 could result in 14,264 jobs and a cumulative net savings of $5.1 billion.

How does Florida use electricity?

Florida's energy is used to power:

- homes (51 percent),
- businesses (40 percent), and
- industry (9 percent).

Per capita residential electricity use is 6,482 kilowatt hours per year, 43 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.