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

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

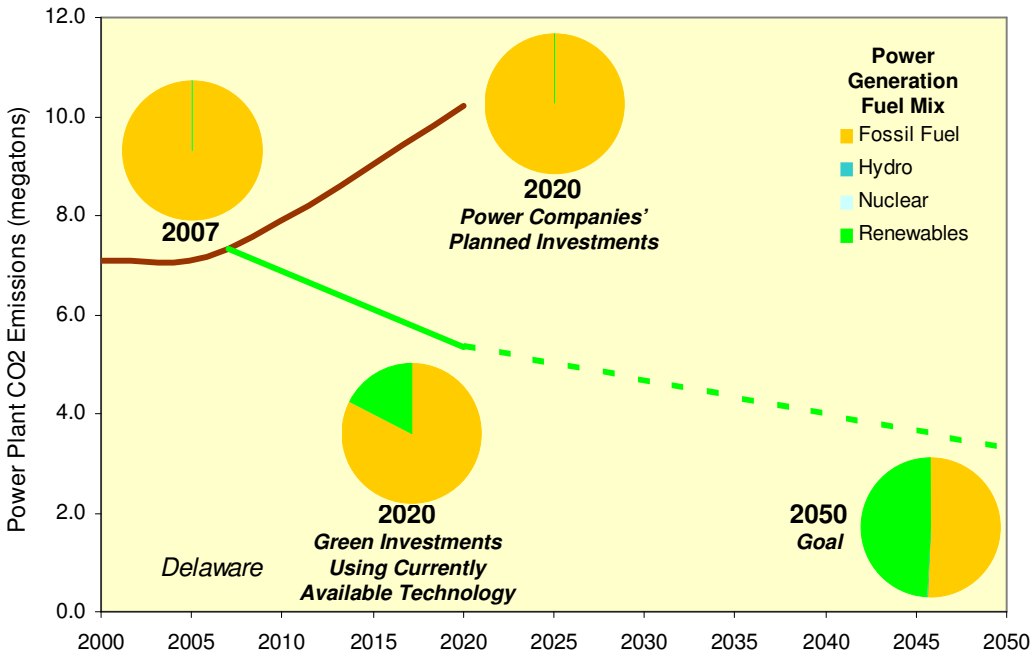
How does Delaware generate electricity today?

In 2007, electric power generated in Delaware primarily came from coal (47.2 percent), and oil (27.5 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Delaware power companies plan to increase the energy generation from coal by 5.2 percent, andoil by 2.7 percent. Less than 0.1 percent of electricity generated in Delaware is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

Delaware has a choice to invest in a cleaner energy future

Delaware 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 Delaware 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.

Delaware 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, Delaware 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 Delaware

Delaware is making great strides in solar and offshore wind energy research. The University of Delaware Solar Power Program is one of the leading solar research centers in the country. The Center has developed some of the most revolutionary solar energy capturing panels, increasing efficiency by nearly 43 percent. The state has been chosen, along with four other states, as the site of a U.S. Department of Interior study on offshore wind and ocean current testing. This research could lead to offshore wind farms in the near future.

To encourage action by individuals, Delaware provides financial incentives for residents to install their own renewable energy systems. The Green Energy Program offers grants to cover 50 percent of the installation cost (up to $31,000) of residential photovoltaic solar systems.

Sources:
http://www.solar.udel.edu/research.html
http://www.delawaresolar.org/incentives.htm
http://www.eere.energy.gov/states/state_news_detail.cfm/news_id=11782/state=DE

Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Delaware can reduce its future carbon dioxide (CO_2) emissions from electricity generation by 48 percent compared to the business-as-usual path that utilities are following now.

Given that 35 percent of Delaware'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 Delaware's energy and economic security

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

Expanded solar power. Delaware has enough solar resources to produce 4,500 to 5,000 Whr per square meter using photovoltaic systems and 3,500 to 4,000 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in Delaware to solar power can provide enough electricity for about 1,100 households each year.

Expanded wind power. Delaware is currently ranked 46th for wind power, with MW of existing electricity generation capacity. The American Wind Energy Association ranks Delaware 38th in terms of its future wind potential, with 197 MW of potential capacity.

Biomass power. Delaware has 0.5 million dry tons of biomass available each year that could be used to generate about 100 MW of electricity.

How does Delaware use electricity?

Delaware's energy is used to power:

- homes (37 percent),
- businesses (36 percent), and
- industry (27 percent).

Per capita residential electricity use is 4,994 kilowatt hours per year, near 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.
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Renewable Energy Policy Project, www.repp.org.

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