

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



New Jersey's energy future is at a crossroads

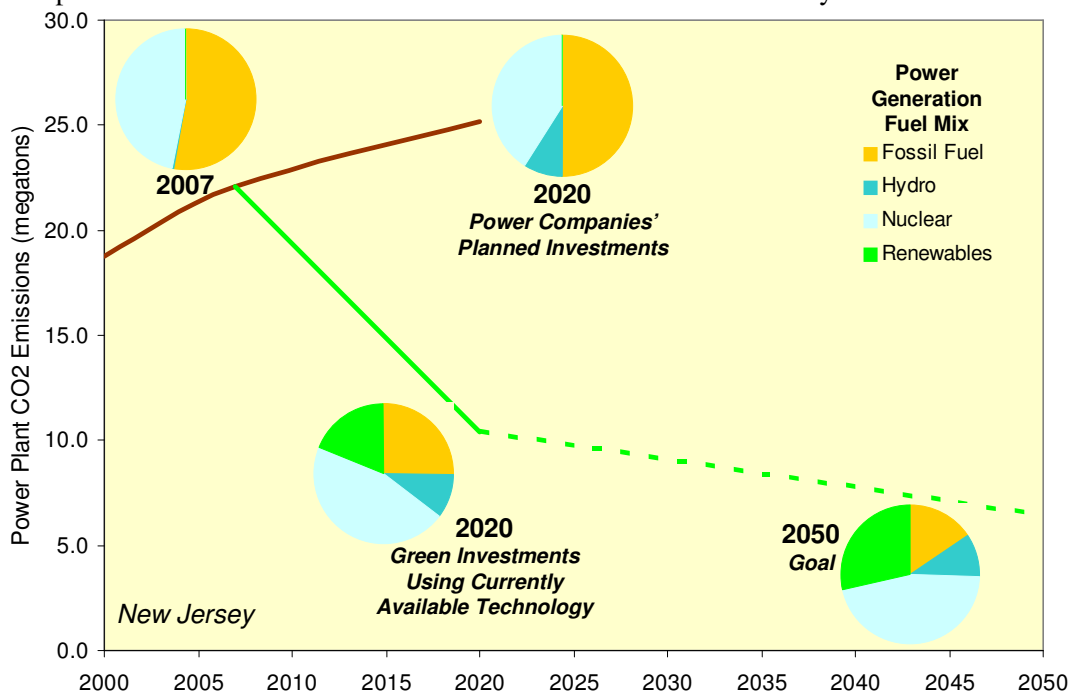
One path leads to increased dependency on fossil fuels—threatening our economy and fueling global warming. The other leads to a new, smarter energy future for New Jersey. Investing in clean energy alternatives—like solar and wind power—can create and protect jobs in New Jersey, save families and businesses 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 New Jersey generate electricity today?

In 2007, electric power generated in New Jersey primarily came from coal (15.5 percent), gas (26.1 percent), and nuclear (47.1 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. New Jersey power companies plan to increase the energy generation from coal by 26.8 percent, gas by 1.4 percent. Less than 0.1 percent of electricity generated in New Jersey is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

New Jersey has a choice to invest in a cleaner energy future

New Jersey 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 New Jersey to generate at least 22.5 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.



New Jersey 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, New Jersey is ranked 9th in the nation for energy efficiency, largely because the state's utilities are already spending \$93 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, New Jersey makes (1) improvements in efficiency to reduce overall demand by 25 percent and (2) shifts away from fossil fuels so that 22.5 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 New Jersey

New Jersey's solar plan is second to only California's. The state expects to produce 2 percent of its power from solar by 2020. To reach this goal, New Jersey has implemented some of the largest incentives for individuals to install solar panels. One of the state-supported incentives is net metering, a policy that allows consumers to sell back energy they produce to the electric companies.

A number of large-scale projects are under way in the state. The Atlantic City Convention Center has plans to install solar roof panels, which should produce 25 percent of the facility's electricity. This project is one of the largest single-building solar projects in the United States.

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, New Jersey can reduce its future carbon dioxide (CO₂) emissions from electricity generation by 59 percent compared to the business-as-usual path that utilities are following now.

Given that 15 percent of New Jersey'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 New Jersey's energy and economic security

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

Expanded solar power. New Jersey has enough solar resources to produce 4,000 to 5,000 Whr per square meter using photovoltaic systems and 3,000 to 4,000 Whr per square meter using concentrating solar power systems. This means that devoting just 1 square mile in New Jersey

to solar power can provide enough electricity for about 1,100 households each year.

Expanded wind power. New Jersey is currently ranked 28th for wind power, with 8 MW of existing electricity generation capacity. The American Wind Energy Association ranks New Jersey 29th in terms of its future wind potential, with 1,200 MW of potential capacity.

Biomass power. New Jersey has 1.0 million dry tons of biomass available each year that could be used to generate about 200 MW of electricity.

New jobs. Committing to a 30 percent growth in solar energy use in the United States will bring 899 jobs and \$726 million investment to New Jersey.

A stronger economy. New Jersey could realize as many as 2,920 jobs manufacturing wind turbines and \$.97 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

How does New Jersey use electricity?

New Jersey's energy is used to power:

- homes (36 percent),
- businesses (49 percent), and
- industry (14 percent).

Per capita residential electricity use is 3,303 kilowatt hours per year, 27 percent less than the national average.

References and Additional Reading:

American Council for an Energy-Efficiency Economy, www.aceee.org.

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Bioenergy Feedstock Information Network, bioenergy.ornl.gov

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