

# Charting a New Path for Connecticut's Electricity Generation and Use



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

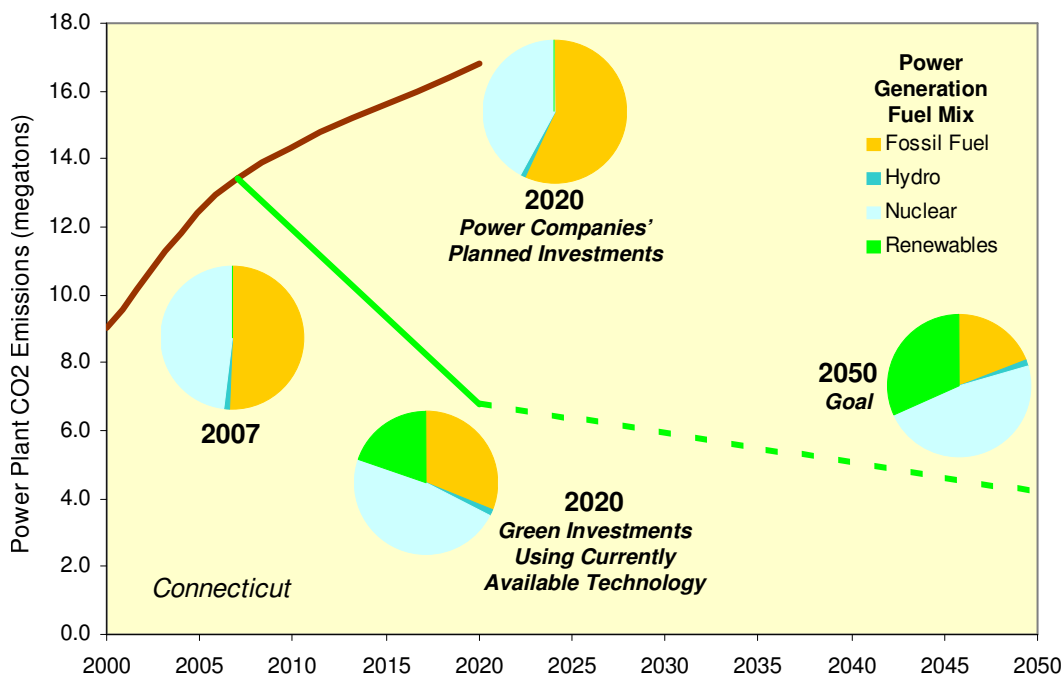
In 2007, electric power generated in Connecticut primarily came from coal (10.6 percent), oil (7.8 percent), gas (23.7 percent), and nuclear (48.0 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Connecticut power companies plan to increase the energy generation from oil by 19.0 percent, gas by 48.9 percent. Less than 0.1 percent of electricity generated in Connecticut is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

### Connecticut has a choice to invest in a cleaner energy future

Connecticut 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 Connecticut to generate at least 23 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.

Connecticut 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, Connecticut is ranked 4th in the nation for energy efficiency, largely because the state's utilities are already spending \$58 million annually to improve energy efficiency.



**About the chart:** 2000, 2007 and 2020 Power Companies' Planned Investments from CARMA 1.0 ([www.CARMA.org](http://www.CARMA.org)). The 2020 Green Investments projection assumes that, using currently available technology, Connecticut makes (1) improvements in efficiency to reduce overall demand by 25 percent and (2) shifts away from fossil fuels so that 23 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<sub>2</sub> emissions from fossil fuels assumes no investment in carbon capture and storage.

## Making a Difference in Connecticut

The Connecticut Energy Efficiency Fund was created in 1998 to address Connecticut's increasing energy needs. Today, the Fund works to help individuals and businesses conserve energy in ways that are both cost-effective and easy to live with. The program provides resources, programs and financial incentives to help homeowners and renters, small and large businesses, and state and local governments get in the habit of using energy more efficiently.

In addition, businesses like United Natural Foods are working to produce clean, renewable energy in the state. The company has built the largest solar array in New England at their Connecticut headquarters and are creating enough energy to power 67 homes annually. Their efforts will avoid the production of 14 million pounds of carbon dioxide over the next 25 years.

### Sources:

<http://www.ctsavesenergy.org/>

[http://www.solarconnecticut.org/news-](http://www.solarconnecticut.org/news-detail.php?id=49&PHPSESSID=83cafff54e2ac74c3f254fbad7d08477)

[detail.php?id=49&PHPSESSID=83cafff54e2ac74c3f254fbad7d08477](http://www.solarconnecticut.org/news-detail.php?id=49&PHPSESSID=83cafff54e2ac74c3f254fbad7d08477)



## Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Connecticut can reduce its future carbon dioxide (CO<sub>2</sub>) emissions from electricity generation by 60 percent compared to the business-as-usual path that utilities are following now.

Given that 19 percent of Connecticut's CO<sub>2</sub> emissions come from electricity generation, diversifying and updating our power sources is critical for cutting the state's total global warming pollution.

## Increasing Connecticut's energy and economic security

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

**Expanded solar power.** Connecticut has enough solar resources to produce 4,000 to 4,500 Whr per square meter using photovoltaic systems and 3,000 to 3,500 Whr per

square meter using concentrating solar power systems. This means that devoting just 1 square mile in Connecticut to solar power can provide enough electricity for about 900 households each year.

**Expanded wind power.** Connecticut is currently ranked 45th for wind power, with MW of existing electricity generation capacity. The American Wind Energy Association ranks Connecticut 33rd in terms of its future wind potential, with 571 MW of potential capacity.

**Biomass power.** Connecticut has 0.9 million dry tons of biomass available each year that could be used to generate about 200 MW of electricity.

### How does Connecticut use electricity?

Connecticut's energy is used to power:

- homes (41 percent),
- businesses (43 percent), and
- industry (16 percent).

Per capita residential electricity use is 3,708 kilowatt hours per year, 18 percent less than the national average.

### References and Additional Reading:

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American Wind Energy Association, [www.awea.org](http://www.awea.org).

Bioenergy Feedstock Information Network, [bioenergy.ornl.gov](http://bioenergy.ornl.gov)

CARMA (Carbon Monitoring for Action), [www.CARMA.org](http://www.CARMA.org).

Database of State Incentives for Renewables and Efficiency, [www.dsireusa.org](http://www.dsireusa.org).

Department of Energy, Energy Efficiency and Renewable Energy, [apps1.eere.energy.gov/states/alternatives/electricity.cfm](http://apps1.eere.energy.gov/states/alternatives/electricity.cfm).

Energy Information Administration, State Energy Data System, [www.eia.doe.gov/emeu/states/\\_seds\\_updates.html](http://www.eia.doe.gov/emeu/states/_seds_updates.html).

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Geothermal Energy Association, [www.geo-energy.org](http://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](http://www.peri.umass.edu).

Renewable Energy Policy Project, [www.repp.org](http://www.repp.org).

*For more information, visit [www.nwf.org/globalwarming](http://www.nwf.org/globalwarming).*