

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



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

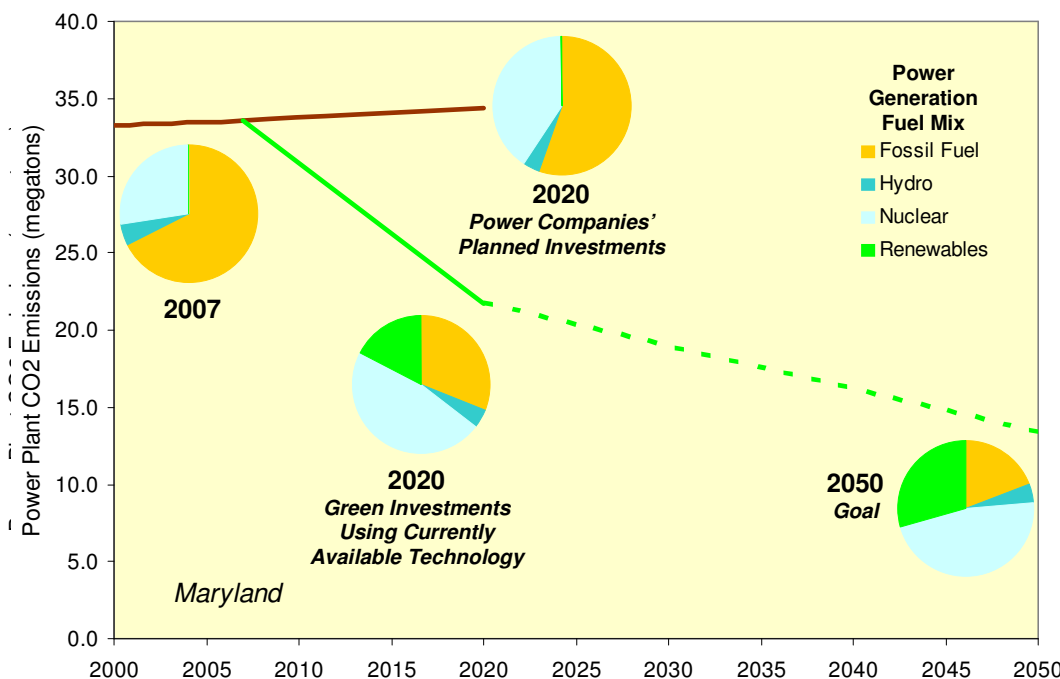
### How does Maryland generate electricity today?

In 2007, electric power generated in Maryland primarily came from coal (45.1 percent), oil (10.9 percent), gas (10.1 percent), hydro (4.9 percent), and nuclear (27.6 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Maryland power companies plan to increase the energy generation from oil by 5.2 percent, gas by 22.4 percent. Less than 0.1 percent of electricity generated in Maryland is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

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

Maryland 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 Maryland 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.

Maryland 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](http://www.CARMA.org)). The 2020 Green Investments projection assumes that, using currently available technology, Maryland 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<sub>2</sub> emissions from fossil fuels assumes no investment in carbon capture and storage.

## Making a Difference in Maryland

Maryland is one of the largest producers of solar energy in the nation. In 2007, Maryland expanded its Renewable Portfolio Standard to 1,500 megawatts of solar energy by 2022. From a per capita perspective, this is one of the most aggressive solar goals in the country, exceeding even California's. To reach this new target, Maryland has implemented a number of incentives for individuals to take advantage of solar power and offers grants for building new solar projects.

The state's ambitious solar policies have already attracted two large manufacturers of solar panels and equipment, as both BP Solar and Sun Edison have their headquarters in Maryland. Spurred by increased demand for renewables and solar panels, the BP Solar headquarters is working on a \$97 million expansion. The expansion should double the production capacity of the Maryland facility and add 70 to 100 new jobs.



### Sources:

<http://www.renewableenergyworld.com/rea/news/story?id=48102>

<http://www.renewableenergyworld.com/rea/partner/story?id=49335&src=rss>

## Making a dent in global warming pollution

Simply by shifting to renewable energy sources and improving energy efficiency over the next decade or so, Maryland can reduce its future carbon dioxide (CO<sub>2</sub>) emissions from electricity generation by 37 percent compared to the business-as-usual path that utilities are following now.

Given that 37 percent of Maryland'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 Maryland's energy and economic security

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

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

**Expanded wind power.** Maryland is currently ranked 38th for wind power. The American Wind Energy Association ranks Maryland 37th in terms of its future wind potential, with 338 MW of potential capacity.

**Biomass power.** Maryland has 2.0 million dry tons of biomass available each year that could be used to generate about 400 MW of electricity.

**New Jobs.** A nationwide investment in green infrastructure of \$100 billion over the next two years could yield 2,419 jobs in solar power and 2,289 jobs in wind power for Maryland. That's 4,330 more jobs than an equivalent investment in conventional power would create.

**Consumer savings.** Reducing electricity demand in Maryland by 29 percent below what is projected for 2025 could result in 12,241 jobs and a cumulative net savings of \$2.6 billion.

### 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)

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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).*