

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



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

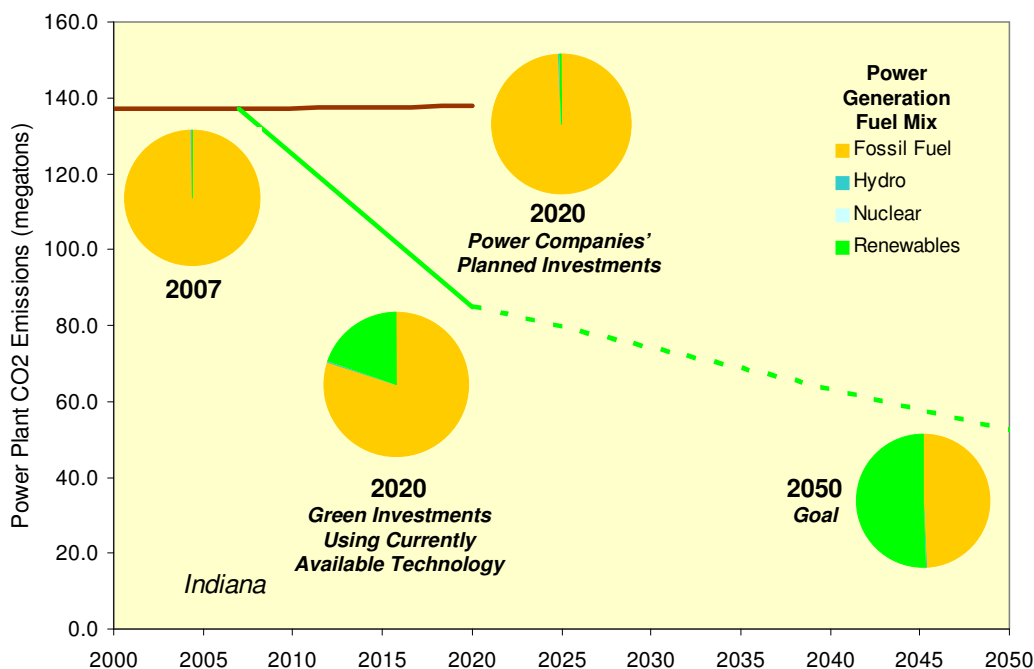
### How does Indiana generate electricity today?

In 2007, electric power generated in Indiana primarily came from coal (89.1 percent), and gas (3.5 percent). Most utilities intend to continue relying heavily on fossil fuels in the coming decade. Less than 0.1 percent of electricity generated in Indiana is expected to come from renewable sources like wind, solar, geothermal, and biomass under current plans.

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

Indiana 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 Indiana 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.

Indiana 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, Indiana 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.

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## Making a Difference in Indiana

Indiana is making its first steps towards a renewable energy future. The first large-scale wind project in Indiana came online in May 2008. With 87 turbines, the 130 megawatt Benton County Wind Farm is creating enough power to run 43,000 homes. This project is the first of six in the area that should produce 3,000 MW within a few more years. These turbines are built on privately owned farmland leased to the energy companies, and farmers receive payments of about \$8,000 yearly for each turbine on their property.

Construction of Indiana's second large-scale wind farm should be completed in 2008. The Fowler Ridge Wind Farm will be built in two stages, with 222 turbines functional by the year's end. Fowler Ridge Wind Farm will be one of the largest in the country when completed; the farm will produce 400 megawatts in the first stage and another 350 MW upon completion of the second stage in 2009 or 2010. These two facilities are a great start for Indiana but there is a lot more potential; the U.S. Department of Energy's most recent study says that Indiana has the potential to produce over 40,000 MW of wind energy.



### 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, Indiana can reduce its future carbon dioxide (CO<sub>2</sub>) emissions from electricity generation by 38 percent compared to the business-as-usual path that utilities are following now.

Given that 50 percent of Indiana'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 Indiana's energy and economic security

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

**Expanded solar power.** Indiana 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 Indiana to solar power can provide enough electricity for about 1,100

households each year.

**Expanded wind power.** Indiana is currently ranked 19th for wind power, with 131 MW of existing electricity generation capacity and 400 MW under construction. The American Wind Energy Association ranks Indiana 44th in terms of its future wind potential, with 30 MW of potential capacity.

**Biomass power.** Indiana has 18.6 million dry tons of biomass available each year that could be used to generate about 3,700 MW of electricity.

**New jobs.** Committing to a 30 percent growth in solar energy use in the United States will bring 640 jobs and \$515 million investment to Indiana.

**A stronger economy.** Indiana could realize as many as 8,317 jobs manufacturing wind turbines and \$2.77 billion investment in the wind industry alone if 50,000 MW of new wind energy is created on a national level.

## How does Indiana use electricity?

Indiana's energy is used to power:

- homes (31 percent),
- businesses (23 percent), and
- industry (47 percent).

Per capita residential electricity use is 5,123 kilowatt hours per year, 13 percent greater than the national average.

### References and Additional Reading:

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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).

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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).

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