

# MINNESOTA'S ENERGY

## An Aerial View

Reducing emissions that are causing climate change begins with understanding how we're using energy, where our energy comes from, and how energy choices are made. In Minnesota, we use most of our energy (80%) to earn a living and commute to and from work or transport products. The remainder is for keeping our homes comfortable, bright and connected.

## Energy Sources

For at least a century, Minnesota's electricity system has been largely reliant on fossil fuels, 100% of which are imported from other states and countries. Today, Minnesota receives more than 55% of its electricity from U.S. coal-fired power plants, the biggest emitter of greenhouse gases in our state. However, in less than one decade, the state's use of coal has dropped by 33%.



### Coal

Minnesota has historically relied heavily on coal to meet electricity needs. Our use of coal has declined in part due to environmental and health policies. It also has been heavily influenced by market forces—from increases in energy efficiency to decreases in the price of natural gas and renewable energy.



### Nuclear

In the 2030s, Minnesota's nuclear power plants will reach the end of their current licenses. Important decisions need to be made about their future. As opposed to coal and natural gas, nuclear power omits no carbon. For that reason, pressure to reduce carbon may influence future discussions on nuclear.



### Natural gas

Natural gas is a fossil fuel that Minnesota imports. Prices have fallen dramatically and U.S. supply has increased with the development of hydraulic fracturing. Even as this technology is widely deployed, the debate continues over environmental impacts and necessary environmental regulations.



### Gasoline

Minnesota imports all of its gasoline, primarily from other countries. In 2012, the United States imported about 10.6 million barrels of petroleum per day from about 80 countries. Our imports decrease with increased domestic production, more efficient vehicles and the use of biofuels.



### Clean Energy

Minnesota's energy portfolio changed dramatically over the past decade. We used less coal and more wind and natural gas sources to generate electricity. Today, renewables account for almost 20% of Minnesota's electricity generation annually, up from nearly 6% in 2000. Minnesota is not alone in this shift. Demand for electricity generation from renewables is expected to increase by 49% from 2012 to 2018 globally, according to the International Energy Association. Additionally, Minnesota now meets 10% of its gasoline demand with ethanol made primarily from corn.

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# \$13 BILLION

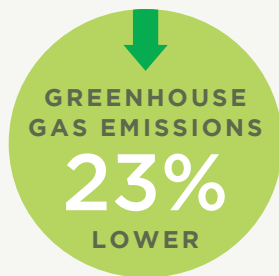
Minnesota annually imports \$13 billion worth of energy, including fossil fuels such as coal, oil and natural gas, from other states and countries because we don't have them here.

## Shaping Our Energy Portfolio

Many situations and considerations face policymakers as they adjust our energy portfolio to meet Minnesotans' needs, reduce emissions, strive for energy independence and economic growth, and ensure our health in the decades to come.

### State Renewable Energy Standard Is Driving Change

Minnesota's 2007 Next Generation Energy Act is a law that requires utilities to generate at least 25% of their electricity from wind, solar and biomass by 2025 (30% by 2020 for Xcel Energy). Likewise, our state solar energy standard requires investor-owned utilities to meet 1.5% of their electricity needs from solar generation by 2020.



Due in large part to these laws, Minnesota's investor-owned utilities are on track to meet our state renewable energy goals. And, the Minnesota Pollution Control Agency estimates that annual greenhouse gas emissions in 2010 from the electric power sector were 23% lower than they would have been without the laws.



Using wind to generate electricity in Minnesota reduces carbon dioxide emissions by more than 5.4 million metric tons each year, the equivalent of taking about one million cars off the road.

### Energy Demand Is Growing

The energy we use for residential and commercial buildings, transportation, industry (including agriculture), and electricity production has increased over the past three decades.



*Our growing population—partly responsible for growing energy demands—is projected to increase 13% by 2040 and up to 33% in some counties, placing increased pressure on transportation and building services.*

### Our Energy Future Is Our Choice

Minnesota is successfully cutting emissions by increasing energy efficiency, increasing the use of renewable energy, and switching from coal to natural gas at power plants. As we look to the future, we have critical decisions to make about our coal-fired and nuclear power plants, as well as how we integrate increasing amounts of renewable energy into our system. These choices offer opportunities to improve our air and water quality, protecting the health of our communities and ecosystems. Additionally, these choices challenge entrepreneurs and scientists to develop new businesses and to be innovative—and our communities to redefine “business as usual.”



*More than 2,600 solar panels sit atop the Minneapolis Convention Center and help directly power the facility. (Photo Credit: Minneapolis Convention Center)*

