

# ENERGY EFFICIENCY AND BUILDINGS

Minnesota is succeeding in reducing emissions in our electric utility sector—the engine fueling our buildings and industry. Shifting to cleaner energy is a big part of our progress, but energy efficiency is just as powerful. Minnesota’s energy efficiency incentives and programs, which have been implemented by utilities, have changed how we use electricity in our homes, construct our buildings and operate our businesses. We’re cutting wasted energy and putting money back into our economy with energy savings—proving that with energy efficiency, we can do more with less.

## WHAT'S HAPPENING?

### One Energy Savings Goal, Endless Opportunities

Energy efficiency efforts in Minnesota have been in place since the early 1980s through the state’s **Conservation Improvement Program**. In 2007, Minnesota took another big step forward. We added one of the strongest energy efficiency standards nationwide, requiring electric and natural gas utilities to achieve an annual energy savings goal of 1.5% of their retail energy sales.

Today, Minnesotans are incentivized with a variety of tools to save energy and money as a means to a critical end: greater emissions reductions. With utility energy efficiency and rebate programs and a host of state and federal grants and loans, Minnesotans should consider their buildings and industries powerful partners in mitigating the effects of climate change.

## HOMES



We use energy to heat and cool our homes, cook our meals, take hot showers, and power our electronic devices and appliances. Extreme temperatures demand greater energy use, causing Minnesotans’ energy bills to change from year to year. In 2012, according to the U.S. Energy Information Administration, the average Minnesota household spent \$1,875 on utility costs each year. Minnesotans are lowering their energy bills and emissions by participating in their utilities’ energy efficiency programs, retrofitting existing homes and constructing new homes to high energy standards.

### Energy Savings Tools

**Building Energy Codes**—Minnesota uses the most efficient codes in the nation so that new homes avoid air leaks, inefficient lighting, heating and cooling equipment, and more.

**Home Energy Reports**—Some Minnesota utilities provide reports that show how much energy we use compared to our neighbors. In just two years, the reports helped Minnesotans save \$6 million in utility bills.

**Energy Efficiency Home Improvement Loan Program**—Homeowners can access unsecured, low-interest loans for energy efficiency upgrades to their homes through the Minnesota Housing Finance Agency.

### Paying Off



The first Twin Cities Habitat for Humanity Net Zero home in north Minneapolis is built to the highest levels of energy efficiency, insulated at least three times as much as a regular house and sealed extremely well to keep drafts out.



The first LEED Gold-certified, multi-family residential project created in Minneapolis was completed in 2013. The design of **7west**, a 213-unit apartment building, incorporates features that go beyond typical sustainable construction and energy conservation techniques.

## LOOKING AHEAD

Minnesota is investigating what it would mean to incorporate higher levels of renewable energy and energy efficiency into our electricity sector. The growing momentum of clean energy will require entrepreneurship, innovation and the public to get involved. Some technologies that might become more important are combined heat and power, solar hot water heaters, energy storage, anaerobic digestion and net-zero energy building techniques.



Understand your electricity and gas use.

Participate in your utility’s energy efficiency rebates and programs to save money and reduce emissions.

Buy energy efficient appliances and equipment.

## By the Numbers



10 Power Plants

The number of medium-sized power plants that Xcel Energy has not needed to build in its territory thanks to efficiency programs.



Nearly 2 Million Tons of CO<sub>2</sub> Saved

The number of tons of carbon dioxide that were saved through energy efficiency efforts in Minnesota between 2010 and 2011. This is the equivalent of removing about 400,000 cars from the road each year.



8.5 to 1.5 Return on Investment

In Minnesota, utility conservation programs returned an average of 8.5 cents per kWh for every 1.5 cents spent for measures implemented in 2010 and 2011.

### BUSINESSES



In any business, it takes energy to keep the lights on, keep spaces comfortable for workers and customers, and run equipment and appliances. In 2012, according to the U.S. Energy Information Administration, Minnesota's commercial sector spent about \$2.8 million on energy. Experiencing energy

inefficiencies in any business is like watching hard-earned money blow out of a drafty doorway. Minnesota businesses and commercial buildings are seizing opportunities to save energy and grow their bottom lines.

#### Energy Savings Tools

**U.S. Department of Energy State Energy Program (SEP)**—We receive federal funds for state energy efficiency and renewable energy programs that help reduce U.S. emissions. Every \$1 of the federal-state SEP partnership yields \$7.23 in energy cost savings.

**Trillion BTU**—A business loan program developed by the St. Paul Port Authority and Xcel Energy has funded \$25.5 million in project costs, financed 53 projects, and saved or created 890 jobs.

**PACE (Property Assessed Clean Energy)**—This financing tool helps businesses make energy efficiency retrofits on their properties and pay them back through their mortgages.

#### Paying Off



St. John's Hospital, Maplewood, received \$875,000 from Trillion BTU and other sources to help finance a \$1 million building automation and efficiency project for its air, heating and cooling systems. \$200,000 per year in energy savings are projected.



The Iron Range Resources and Rehabilitation Board has a project to assist Hibbing businesses with energy efficiency decisions and financing for energy retrofits. Energy savings from 13 projects are expected to save more than \$70,000 a year. Projects employed 18 local contractors and 13 local vendors, yielding 4,900 hours of work.

### PUBLIC BUILDINGS



Energy cost savings in public buildings free up taxpayer money for other priorities. In Minnesota, energy efficiency efforts help achieve a state goal to reduce total energy consumption by 20% throughout all state agencies by 2020. If achieved, Minnesota will reap an estimated \$5.3 million in energy savings.

#### Energy Savings Tools

**Guaranteed Energy Savings Program**—Energy-savings contractors pay the upfront cost of retrofits in our school districts, local governments and state agencies, and higher learning institutions. Costs are paid back through energy savings from the installations.

**GreenStep Cities/GreenCorps**—Minnesota's GreenStep Cities is a voluntary program to help communities achieve their sustainability and quality-of-life goals. GreenCorps professionals work with communities, nonprofits and educational institutions on energy conservation efforts.

**SB2030 Standards**—Construction and renovation of large public buildings in Minnesota must meet a mandatory set of design standards that reduce energy use and carbon intensity.

#### Paying Off



Energy consumption in the Capitol Complex was reduced more than 20% from 2008 to 2013, saving an estimated \$2 million in utility costs.



The Minnesota History Center has reduced energy consumption 53%, carbon emissions 37% and energy costs 35% over the last seven years.

