The Minnesotan's Guide to Home Energy Savings

Helpful advice and information from Minnesota Energy Resources





Introduction

Conserving energy when you call Minnesota your home

Here in Minnesota, we have a reputation for being upbeat and friendly. They call it "Minnesota nice." Mother Nature, however, isn't always so nice to us.

The perfect example of that occurred during what you could call a "perfect winter storm," which actually hit weeks before the official start of the winter season. Many Minnesotans recall the history-making Halloween Blizzard of 1991 when an arctic cold front moved through the state.

Nature certainly chose trick over treat that year as the epic storm slammed into the upper Midwest, blasting the region with high winds, causing temperatures to plummet and blanketing communities in snow and ice for days. The blizzard crippled portions of the state, causing power outages and significant damage while shattering snowfall records. Up in Duluth, the storm dumped an incredible 37 inches of snow.

Just days earlier, unseasonably warm high temperatures in parts of Minnesota were in the 70s. What's funny is that this probably doesn't sound so crazy to the typical Minnesotan. It's par for the course.

There are years when it seems like there are only a few days between running the furnace and flipping on the air conditioning to cool things down.

It takes a lot to keep your home cozy through the harsh winters and comfortable during the hot and sticky summer months. The energy you use can be costly, but you and your family can take steps to make your home more energy-efficient, saving money and protecting the planet.

Beyond identifying ways to save on heating and cooling your home, Minnesota Energy Resources created this guide to help residents discover methods for reducing electricity usage, conserving water, utilizing technology and choosing energy-efficient appliances. Plus, we'll let you know about special rebates you'll earn by making certain updates.

If you call the Gopher State home, this is your go-to guide for energy-savings.



Where does your home's energy come from?

Perhaps you haven't given much thought to the resources that power your home. There's a good chance you have a mix of electricity and natural gas, while others may be using propane or fuel oil in their homes.

Converting to natural gas, or updating to natural gas appliances, can be an excellent strategy for improving household energy efficiency.



Save money

Natural gas can lead to savings of 25% to 40% over fuel propane and fuel oil. Combined savings after switching from electric to a natural gas furnace, water heater, dryer and range could save your family hundreds of dollars a year.



Improve efficiency

The reason natural gas furnaces and appliances help you save is simple: they use less energy and make life a little easier.

- A natural gas hot water heater produces twice as much hot water as electric while reducing costs by 30%.
- Natural gas stoves heat up faster and provide more precise cooking temperatures.
- Natural gas dryers get your laundry dry faster, which means you're using less energy.



There when you need it

Natural gas offers more convenience than electricity. There's an abundant domestic supply of natural gas and, because it is delivered to your home through underground pipes, you'll never experience disruption from a power outage.



Go greener

Natural gas is a much cleaner-burning fossil fuel and reduces your carbon footprint as it puts fewer pollutants into the environment than the alternatives. Electricity, on the other hand, is often generated by coal burning power plants, which produce significantly more pollution.

While the amount of coal-generated electricity in Minnesota fell to 39% in 2017, coal is still the largest generation source. Natural gas contributed to 12% of Minnesota's electricity generation in 2017. Yet, natural gas produces 50% less carbon dioxide than coal.

The value of natural gas

Natural gas costs make up merely 1.2% of the average household income in Minnesota. That equates to approximately \$2 per day. So, for just a couple bucks, your family gets hot showers, dry clothes, home cooked meals and a warm place to live when Old Man Winter arrives.

Of course, you can also take advantage of natural gas to make your Minnesota home a more enjoyable place to live. Use it to heat your pool or hot tub, fire up your gas grill or create the perfect mood with a gas fireplace. Switching to natural gas even increases the resale value of your home.



Choosing natural gas is a smart move!



Energy-savings Water in your home

Water is a vital resource that's worth protecting. Only 1% of water in the world is available for human use, so it's important to do your part and reduce waste in your home.

The chart to the right reveals the biggest users of water in the typical household. As you can see, the toilet tops the list with nearly a quarter of a home's water being used to flush. Showers, faucets and washing machines also make up a significant amount.



Source: Water Research Foundation, Residential End Uses of Water, Version 2.2016

Updating to low-flow faucets and fixtures, and installing more efficient appliances, are effective ways of reducing water usage and energy in your home. A newer, low-flow showerhead alone could save you \$145 per year.

Minnesota Energy Resources offers its customers a <u>free water conservation kit</u>. It includes highquality, low-flow faucets and aerators for kitchen and bathroom sinks. The kits are for existing homes, which must have a natural gas hot water heater.



ltem	Annual savings from heating water		Annual water savings	
Low-flow showerhead	17 therms/year	8.5% savings	7,300 gallons	40% savings
Kitchen faucet aerator	5 therms/year	2.5% savings	1,825 gallons	40% savings
Bathroom faucet aerator	5 therms/year	2.5% savings	2,190 gallons	80% savings

Well over 33,000 Minnesota Energy Resources customers have already installed our free kits, resulting in nearly 400 million gallons saved. The best part is, you won't be sacrificing water pressure at all.

Besides reducing the amount of water you use, managing the energy required to heat water in your home is another important step. If you don't already have a natural gas hot water heater, switching to natural gas provides substantial savings.

A natural gas hot water heater may cost slightly more than an electric model, but you will make up the price difference in just one year. While specific numbers depend on utility rates and household use, on average, it costs \$345 per year to operate an electric water heater compared to \$205 for a water heater fueled by natural gas.



Natural gas hot water heaters also take less time to reheat water, and they keep working during power outages.

Rebates available

High-efficiency (HE) water heaters have rebates available for existing homes.

Measure	Minimum efficiency	Rebate
Natural gas storage water heater	ENERGY STAR [®] certified and .64 UEF	\$125
Natural gas storage water heater	ENERGY STAR certified and .82 UEF	\$250
Natural gas storage or tankless water heater	ENERGY STAR certified and .87 UEF	\$300
Drain water heat recovery device (DHR)		\$150

These rebates are not intended for new construction. New construction is defined as being built in the last two years. UEF: Uniform Energy Factor

Learn more about these rebates on our <u>website</u>, or get the water heating <u>rebate application</u> <u>today</u>. Questions on rebates? Call **866-872-0052**, option 1.

6 quick tips to save water and energy



Check for leaks

Leaky faucets and pipes can account for 12% of water used in your home, and that's **all waste**. Get them fixed! Watch your water bill for signs of unusually high use.



Shorter showers over baths

Keep showers under ten minutes, and try convincing kids to transition from baths to taking showers. Full baths use 70 gallons of water. Showers use 20 gallons or less.



Don't leave the faucet running

Turn off the water while you brush your teeth and shave. Only use it to rinse when you're done. Thaw frozen food in the fridge instead of under running water.



Go low-flow

Install low-flow showerheads, water-saving aerators and low-flush toilets to reduce water usage. Learn about our <u>free water conservation kits</u>.



Monitor outdoor usage

Don't overwater landscaping, and avoid waste by adjusting sprinklers that hit streets and sidewalks.



Keep it at 120°

The ideal temperature for water heaters is 120°, but the default setting on most models is 140°. Check to see if the temperature can be turned down.

Energy-savings Heating and cooling your home

Since heating and cooling your family's home is the single largest source of energy use, looking for opportunities to make things more efficient in this area is a top priority.

When it comes to keeping your home warm during a Minnesota winter, natural gas is the most efficient heating fuel. While an electric furnace might be a smaller initial investment, and the lifespan is slightly longer, natural gas furnaces cost much less to operate.

On average, you'll pay more than \$1,500 a year to run electric heat compared to less than \$650 with a natural gas furnace, saving you \$900 or more annually.

Experts agree that electricity is the least efficient way to heat a home. That's why more

than half the households in the U.S. already rely on natural gas for heat.

Others in Minnesota are using propane or fuel oil to heat their homes. Sometimes, these fuels are used because there are no natural gas lines available to serve homes in an area.

While these heating fuels are more efficient than electricity, they have some inconveniences, too. For example, you'll need to make sure your fuel storage tank isn't running low. Natural gas, however, requires no storage as it's delivered through underground pipes.

The chart below illustrates how natural gas is the most affordable heating fuel option, and costs remained relatively flat as electricity rates have steadily risen over the years.





Interested in finding out if you could save by converting to natural gas?

The links below take you to calculators from Minnesota Energy Resources to help you decide if it's the right choice.

Switching from electric to natural gas Converting from propane to natural gas Converting from fuel oil to natural gas

Remember, the same natural gas used to power your furnace can be used for air conditioning, and it offers similar efficiency advantages.

Updating your home for efficient heating and cooling

While your HVAC system should be on the top of your list concerning heating and cooling efficiency, there are many other home repairs and updates you can make to help save energy.

Outdated windows can cause the warm or cool air from inside your home to leak outside. But, storm windows can reduce heat loss by 25% to 50%. ENERGY STAR[®] estimates installing certified replacement windows reduces bills by as much as 15%.

New windows can be a major investment. Adding insulation to your home, however, is a very cost-effective way to avoid energy waste. Insulation helps keep your home cooler in summer and warmer in winter.

The experts at ENERGY STAR say most U.S. homes don't have enough insulation, and all

those little leaks and gaps are like having a window open all year long.

Replacing an aging furnace with a more energy-efficient model is another update with the potential to save energy. When you go through this process, ask a trusted HVAC professional in your area if your furnace is the right size for your home.

Finally, getting an in-home energy audit will help you identify potential heating and cooling issues in your home. This service typically costs a few hundred dollars, but Minnesota Energy Resources customers will only pay \$50 for a standard audit.

Find out more about <u>in-home energy audits</u> on our website and request a visit to your home.

Get smart about energy with smart home solutions

Programmable thermostats and smart home products can help homeowners experience significant savings. You'll be able to optimize heating and cooling in your home for when people are away for the day, on vacation or when everyone is sleeping.

A basic programmable thermostat could help you save 15% on energy bills while a more advanced model could reach 20% savings annually. That equates to hundreds of dollars in energy-savings per year for the typical Minnesota homeowner.

Rebates available

Making heating and cooling improvements to your home can come with some sizable rebates. Here's what you get when you upgrade to a high-efficiency natural gas furnace or boiler.

Measure	Minimum efficiency	Rebate
Natural gas furnace	92% AFUE	\$250
Natural gas furnace	95% AFUE	\$350
Natural gas furnace	97% AFUE	\$500
Natural gas furnace for mobile homes	92% AFUE	\$200
Natural gas boiler	90% AFUE	\$200
Integrated natural gas space and water heating system	92% AFUE	\$250

AFUE: Annual Fuel Utilization Efficiency

There are also rebates for programmable thermostats, insulation/sealing and heating system tune-ups. Get the details on <u>heating and cooling rebates</u>, and submit your <u>rebate application</u> today. Questions on rebates? Call **866-872-0052**, option 1.



6 quick tips

for efficient heating and cooling





Don't touch the thermostat

It's not just a grumpy dad thing. Constant adjustments to your home's temperature waste energy.



Replace furnace filters at least once every three months. Dirty filters waste energy because they make your system work harder.



Open and shut

Make use of your windows to make your home naturally comfortable. Closing curtains and drapes helps conserve heat during winter. Opening windows on cooler summer nights is more efficient than running the AC while you sleep.



Put it in reverse

Set ceiling fans in reverse during cold winter days to draw cooler air upward and force warm air (which rises) down.



Fight the flue

Fireplaces are nice, but even when you close the flue, air is escaping out your chimney. Reusable chimney balloons are a safe and affordable way to prevent this.



This register is closed

If there are rooms in your home that are rarely used, close the heating registers so your system doesn't waste energy. Likewise, make sure furniture and other items aren't blocking registers.

Energy-savings Choosing appliances

The contemporary home comes with many advantages that make our lives easier. It's easy to forget there was a time when people used washboards and wringing machines for laundry, ice was delivered to homes for refrigeration and folks washed all their dishes by hand.

As we enjoy the conveniences of modern appliances, we can do so responsibly.

When it comes time to purchase new appliances for your home, seek out ENERGY STAR[®] certified products. Here's some insight into common appliances that could benefit from an energy-efficient upgrade.



Washers and dryers

Around 80% of dryers in the U.S. are electric. That's unfortunate, because a gas dryer is much more efficient and reduces the environmental impact. If you already have a gas line running to your home for a water heater, switching to a natural gas dryer will be easy.

Clothes washers with an ENERGY STAR rating use 25% less energy and 33% less water than standard models. The typical American household does around 300 loads of laundry per year. That's a lot of opportunities to save energy.



Dishwashers

ENERGY STAR dishwashers have advanced technology that reduces energy and water usage while improving performance. Dish racks have even been redesigned to ensure maximum cleaning potential.

While the average dishwasher uses six gallons of water per cycle, ENERGY STAR models use four gallons. A certified, energy-efficient dishwasher will save approximately 3,870 gallons of water in its lifespan.



Ovens and ranges

At this time, there are no ENERGY STAR labels for ovens and ranges or microwaves. However, switching to an oven and range powered by natural gas will be more efficient. Electricity uses three times as much energy as natural gas. Electric ignition gas stoves, as opposed to ones with a pilot light, are considered most efficient. That's because the pilot light isn't constantly burning.

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Dehumidifiers

The humid air of Minnesota summers prompts many residents to run dehumidifiers to take moisture out of the indoor air in their homes, especially in damp basements. ENERGY STAR[®] certified dehumidifiers remove the same amount of moisture but use 30% less energy.

Refrigerators	ć
There are approx	i

Refrigerators and freezers

There are approximately 170-million fridges and freezers running in the U.S. right now and, 60 million of them are more than a decade old, costing consumers billions every year. According to ENERGY STAR, you're paying an additional \$110 per year in energy bills if you've got an outdated refrigerator.

Newer, energy-efficient models are better insulated and have state-of-the-art compressors, which save energy and money.

Rebates available

As a bonus to the savings you'll experience when updating appliances, you can also take advantage of rebates.

Measure	Rebate
ENERGY STAR certified dishwashers*	\$30
ENERGY STAR certified clothes washer*	\$45

*Water heater must be fueled by natural gas to qualify

Get your <u>rebate application</u> from Minnesota Energy Resources. Don't wait! Funding is limited and may end at any time. Applications are processed on a first-come, first-served basis. Questions on rebates? Call **866-872-0052**, option 1.



6 quick tips

for saving energy with appliances





Wait until it's full

Run dishwashers and washing machines with full loads only. But, not too full! Overloading may cause you to rewash dishes or force your clothes dryer to work overtime.



Wash on cold

90% of the energy used from washing laundry is used to heat the water. Yet, cold water can usually do the job, unless you're dealing with tough stains. Even switching settings from hot to warm cuts energy use by half.



Super sensors

Instead of using timed drying, try sensor drying. This way your dryer shuts off automatically when laundry is dried.



Check your temperature

Don't keep your fridge and freezer too cold. The ideal temperature for a refrigerator is 40° F, and the freezer should be around 4° F.



Close it up

Your parents were right. A refrigerator loses 30% of its energy every time you open the door. So, think about what you need beforehand.



Skip the oven

Use microwaves, crockpots and toaster ovens when you don't really need the stove or oven.

Additional resources for Minnesotans

<u>Minnesota Energy Resources</u> delivers natural gas to more than 285,000 customers across 52 counties in 179 communities around the state. We are dedicated to safety and reliability while constantly looking for ways to help homeowners reduce costs through energy-efficient updates and rebates.

Here are several additional online tools, programs and resources that may be beneficial:



Areas served

To view a map of where Minnesota Energy Resources delivers natural gas and provides services, see our <u>Service Area Details</u>.



Rebate information

Find out how you can earn <u>energy efficiency rebates</u>. Get the latest details on the rebates mentioned in this guide as well as workshops and programs for Minnesota Energy Resources customers.



Natural gas safety

Minnesota Energy Resources takes safety seriously. Visit our website to find out more about <u>natural gas safety</u>. Call **800-889-4970** to report an emergency.



In-home energy audit

Minnesota Energy Resources customers can get a professional energy audit at a reduced rate. <u>Request your energy audit</u> today or call **800-376-0517** to learn more.



ServiceChoice appliance repair

This unique offering from Minnesota Energy Resources provides protection plans, air conditioning and furnace inspections and help fixing the appliances and comfort systems in your home. Get more <u>information about ServiceChoice</u> on our website or call **800-889-3479**.



Billing and payments

We make it as convenient as possible for Minnesota Energy Resources customers to pay their natural gas bills. <u>Visit our website</u> for all payment options, including <u>free paperless e-Bill</u>.



Financial and energy assistance

We understand that it's not always easy making ends meet. That's why Minnesota Energy Resources has <u>financial and energy assistance options</u> to help.

Energy-savings matter to every Minnesotan. You should be proud of the fact that our state ranks in the top 10 most energy-efficient states, according to the <u>ACEEE's 2018 State Energy</u> <u>Efficiency Scorecard</u>. Of course, there's always room for improvement!

We hope this guide helped you discover new ways to save energy. <u>Contact Minnesota Energy</u> <u>Resources</u> today with questions about how natural gas could benefit your home.

