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IS NATURAL GAS RIGHT FOR YOUR HOME?

By Coldwell Banker Rizzo Mattson, Realtors



With the expansion of natural gas pipelines in Maine, more residents are expected to convert their homes to natural gas. If you're thinking about switching to this form of energy, here's what you need to know to see if it's the best choice for your home.

NATURAL GAS DEFINED

Natural gas is a fossil fuel formed when layers of buried plants and animals are exposed to

intense heat and pressure over thousands of years. The energy they originally absorbed from the sun is stored in the form of carbon in natural gas.

Natural gas heats homes, and can power some appliances, like ranges, clothes dryers, and water heaters. It burns cleaner than heating oil, with a fraction of the sulfates and nitrates that cause acid rain, and about 30% fewer carbon emissions than oil. The results are cleaner air, less wear and tear on the heating system and lower maintenance costs. Unlike propane, you don't need an outside storage tank; the gas comes through underground pipes.

It's sold in units of cubic feet or therms. A therm of natural gas is equal to 100,000 BTUs. A BTU (British Thermal Unit) is the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

The drilling method used to extract gas from underground shale, known as hydraulic fracturing, or "fracking," is controversial for its effects on the air, surrounding ecosystems, and regional water quality. Many environmental advocates suggest people transition to renewable heating sources, like geothermal or solar.

Local utilities provide natural gas. For more information about Maine natural gas distributors and their coverage areas, visit The Maine Public Utilities Commission's website.

Here is a breakdown of the average annual prices, conversion costs and savings, along with comparisons and safety issues.

COSTS AND SAVINGS: FLECTRICITY AND HEATING

Though it's often touted as a cheaper alternative to No. 2 heating oil, natural gas prices have risen steadily over the last few years and could continue to rise.

Like heating oil, the price can vary based on supply and demand. In winter months, when natural gas usage rises in places like Boston, prices in Maine tend to increase because Marcellus Shale gas is sent to population centers to meet demand. In the winter of 2012, the price of natural gas narrowly avoided surpassing the cost of heating oil.

Oil providers and natural gas providers offer long-term contracts that let their customers buy at a fixed price.

According to the Maine Governor's Energy Office, on average, homeowners who switch from No. 2 heating oil to natural gas would save nearly \$1,100 per year in energy costs if they use standard boilers or furnaces.

The energy office's Home Heating Calculator can help you estimate the cost of fuel for different heating appliances in an average well-insulated home (1500 square feet). For example, a house that size would need about 540 gallons of fuel oil per year (or about 50,000 British Thermal Units [BTU]).

You can also download an Excel spreadsheet for more detailed calculations, based on an average price of fuel, the efficiency of the heat source, the amount of heat it produces, and other factors.

Annual electricity savings from using a gas range can average \$79; a clothes dryer, \$81, and a water heater, \$297.

The Mr. Electricity website offers calculators for comparing the cost of converting from electricity to gas.

CONVERSION COSTS AND INCENTIVES: FURNACES, BOILERS, FIREPLACES, AND APPLIANCES

Furnaces and Boilers

Homeowners can expect to pay between \$3,000 and \$7,000 to convert an oil burner to natural gas. The costs vary according to the size of the home, the efficiency of and age of your equipment, and installation fees, such as if you're Ask a Question

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using an existing indirect water heater or need new chimney linings. A conversion doesn't make the system run more efficiently, or qualify for any rebates, loans, or tax credits.

It can cost from \$7,000 to \$13,000 to install a new, high-efficiency natural gas furnace or boiler.

The first thing to look at when shopping for a new heat source is the efficiency rating, commonly called Annual Fuel Utilization Efficiency (AFUE). The rating measures how well a machine's combustion runs -- a higher rating means it's more efficient.

Most new oil furnaces have AFUE ratings between 80% and 90%, while their gas counterparts boast ratings between 89% and 98%. Though gas furnaces are more efficient than oil burning systems, gas units are sometimes priced 10% to 25% higher than the same size oil furnace. All new furnaces are substantially more efficient than their older counterparts, some by as much as 30%.

Gas units require little maintenance and no service contracts, but they provide less heat per BTU than oil. They're also quieter and cleaner. Oil equipment provides more heat per BTU than other sources, but an on-site storage tank is required and oil must be delivered. Oil system maintenance is more extensive due to dirt and soot buildup --chimneys must be cleaned and the oil filters changed frequently. Fuel prices for oil systems are often higher than with gas systems.

Fireplaces

Fireplaces might not be the most effective way to heat a home in our colder climate compared to a central heating system. To increase a fireplace's efficiency, use your furnace blower fan to distribute the heat to other areas of your home. Some fireplaces have circulating air or variable-speed fans to increase the amount of convective heat they supply. You can also add an internal blower or fan that will circulate the heat over a larger area or even a duct system.

Compared to wood burning fireplaces, natural gas poses less of an in-home air pollution risk, and you don't need to worry about sparks, chimney fires, or clean up. The U.S. Environmental Protection Agency (EPA) estimates that wood burning fireplaces emit 28 lbs. of particulate emissions per million BTUs (MMBTU) of heat output (soot and ash) compared to natural gas which produces up to 99% less (about .28 lbs./MMBTU).

Determining the appropriate fireplace size is a key to your comfort. A rough estimate is 1,000 BTUs for every 50 cubic feet. So, a 12-by-24-foot room with an eight-foot ceiling would need a 46,000 BTU fireplace.

Natural gas fireplaces range from \$1,400 to \$10,000 but the average cost is \$4,000 to \$5,000. A typical 35,000 BTU unit costs about \$3,000. Expect to pay \$2,000 to \$5,000 (including installation) for a heat-producing insert or built-in fireplace. Decorative log sets run about \$400 to \$1,000. An electric fireplace can cost from under \$400 (portables) to \$1,600, depending on extras, such as mantel packages. Wood burning fireplaces, including installation costs, can range from \$7,000 to \$10,000 or more.

Quality natural gas fireplaces have EnerGuide EnerChoice ratings. Look on the EnerGuide label for the Fireplace Efficiency (FE) rating. Efficiency is shown as a percentage because it is the comparison of the input value of the gas versus the usable heat output to the home.

A certified Heating, Ventilation, and Air Conditioning (HVAC) professional can help you determine the size of the units you need for heating. Use a qualified and reputable HVAC contractor and get several estimates before you make any major investments in your home.

Appliances

According to the U.S. Department of Energy, gas dryers are less expensive to operate than electric dryers. The cost of drying a typical load of laundry in an electric dryer is 30 to 40 cents compared to 15 to 20 cents in a gas dryer.

The costs of natural gas powered kitchen and laundry appliances tend to be higher than electric ones. For example, LG's Smart ThinQ electric clothes dryer is \$1,599, but the gas model is \$1,699. A GE Profile 30" convection range has a wider gap, with Sears selling an electric version for \$1,080 and a gas one for \$1,800.

To determine the actual costs of using a water heater, you should compare the purchase prices of the models you're considering and their lifetime operating costs. The energy efficiency of a water heater is measured in terms of its Efficiency Factor (EF) -- the higher the number, the more efficient it is. A whole house tank less heater that operates on electricity typically runs from \$500 to \$700, while a gas-powered tank less heater can cost \$1,000 or more.

CONVERSION AND INSTALLATION INCENTIVES

Natural gas providers ask customers to call them or fill-out online forms to request natural gas service to their homes.

In areas without direct pipelines, some distributors offer to reimburse customers for building a service line from the street to their homes, with an average cost of \$6,000 to \$7,000. Others also offer rebates to customers who want to buy a new boiler or a furnace and water heater.

Some providers also offer free, in-home energy audits and air sealing work and on-bill financing of the conversion to their customers for a certain number of years at a fixed interest rate.

The state-funded program Efficiency Maine promotes cost-effective and efficient energy use. For more information about loans for energy upgrades, incentives for weatherization, and federal tax credits Efficiency Maine offers through their Home Energy Savings program, visit their website.

Summit Natural Gas customers enrolled in the federal Low Income Home Energy Assistance Program (LIHEAP) can receive up to \$4,000 to convert to natural gas. LIHEAP also offers fuel assistance for low-income Mainers. Contact your local Community Action Program (CAP) for more information.

Visit the federal government's Energy Star website for information about federal tax credits for energy efficiency.

SAFETY: CARBON MONOXIDE EMISSIONS AND GAS LINE LEAKS

Wood, oil, and gas burning heating systems can emit dangerous levels of carbon monoxide, which can build up over

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time and make it a "silent killer." Symptoms of carbon monoxide poisoning are similar to those of the flu without a fever. Experts recommend homeowners place hardwired carbon monoxide detectors in basements and bedrooms.

Though gas heaters tend to produce little soot, as with other heating systems, homeowners should have a licensed plumber or an HVAC specialist perform annual, pre-winter maintenance. This check-up can also ensure that the unit is running efficiently and the exhaust pipes are intact.

While rare, natural gas line leaks can be extremely dangerous. The most telling sign of a natural gas line leak is the smell of rotten eggs. This odor is added to the natural gas so it can be detected in the event of a leak.

The biggest hazard of a gas leak is an explosion. When natural gas builds up in an enclosed area, it becomes extremely volatile.

Gas leaks outside the home are dangerous, too. Most gas lines going into homes are buried underground.

Only a qualified contractor should remove your old equipment and install a new natural gas water heater, furnace, boiler, or other appliances.

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