

*Questions and answers
about our environment*

Dear EarthTalk: Is it true that gas furnaces cost less to run and burn cleaner than their oil counterparts? If I make the switch, how long should I expect it to take for me to pay back my initial investment? And are there any greener options I should consider? -- Veronica Austin, Boston, MA

It is true that natural gas has been a more affordable heat source than oil for Americans in recent years. The federal Energy Information Administration (EIA) reports that the average American homeowner will pay only about \$732 to heat their home with gas this winter season (Oct. 1 through March 31) versus a whopping \$2,535 for oil heat.

While the price of natural gas has remained relatively stable in the last few years, oil prices have been high and rising thanks in large part to continued unrest in Middle Eastern oil producing countries.

Just two years ago the average winter home oil heating bill was \$1,752.

While oil prices are likely to remain high and volatile in the foreseeable future, most energy analysts agree that pricing for natural gas, much of which is still derived domestically, is not expected to rise or fluctuate substantially in the U.S. soon.

According to EIA economist and forecaster Neil Gamson, the U.S. already has a glut of natural gas and expects even more domestic production to come online soon as drillers are set to open up the Marcellus Shale in Pennsylvania and New York to more gas development.

Only about eight percent of U.S. homes are on oil heat today. Most are in the Northeastern U.S. and were built back in the day when oil was the cheapest way to keep toasty through the long winters. Many utilities have since put gas lines into neighborhoods that didn't have them in the past, opening the door for homeowners to switch out old inefficient oil furnaces for more efficient gas units.

The federal government's 30 percent tax credit (capped at \$500) for upgrading to a high efficiency furnace expires at the end of 2011 but will likely be extended in one form or another into 2012. In the meantime, some states, municipalities and utilities offer their own incentives and low-interest loans on upgraded, high-efficiency furnaces.

Check what's available in your area via a zip code or map-based search online at the website of the Database of State Incentives for Renewables and Efficiency (DSIRE).

Regardless of incentives, gas furnaces tend to cost less than their oil counterparts anyway, but installing one from scratch will incur an extra thousand dollars or two to run a gas line to it from the street. If natural gas continues to be substantially cheaper than oil, the fuel cost savings alone would pay back the up-front equipment and infrastructure investment within five years in most cases.

Environmentally speaking, gas has lower carbon emissions than oil, but hydraulic fracturing ("fracking")—the highly controversial gas extraction method increasingly employed today (drillers

inject water, sand and chemicals at high pressure underground to break through rock and access the natural gas)—takes a heavy toll on surrounding ecosystems and regional water quality.

Most environmental advocates would rather see people transition to truly renewable heating sources like geothermal or solar. If you're going to the cost and trouble of switching out an oil furnace for something new, a geothermal heat pump may cost more (\$7,500 and up) than a new gas heating system but will save big bucks and emissions in the long run.

For those in reliably sunny areas, a solar heating system will cost even more up front but can deliver similar long term economic and environmental benefits.