The Economics of Conversion from Oil to Natural Gas for Heating Your Home
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Economics and Return on Investment

Average Oil to Gas Conversion Costs

Naturally, the cost of conversion will vary from home to home depending on a number of different factors. Contractors typically break up expenses into two basic categories: the internal conversion cost and the capital construction cost.

The internal conversion cost consists of all of the work that is done on your property. This includes the installation of a boiler/furnace, gas piping, chimney liners, and any other required equipment, along with additional contractor labor costs. The capital construction cost is basically the cost for the utility to install gas facilities up to your property line. Therefore, those with existing natural gas pipelines in their area will be able to save here. Some companies are able to provide a zero capital construction cost to qualified homeowners.

Based upon these costs, the average homeowner can typically expect to pay anywhere from $3,000 to $8,000, and in some cases up to $15,000. To get an up to date cost estimate specific to your home, you can contact a contractor directly to schedule an onsite audit, often for free.

Average Conversion Payback Period

Based upon current data and case studies looking into future conversions, the typical payback period on natural gas conversion can be anywhere from three to five years. In a case study conducted by the Environmental Defense Fund and Urban Green Council in 2009, researchers found the payback period for conversion
on a single family home in New York City to be 4.25 years; this is shown in figure one. Calculations were based on the Energy Information Administration’s projected fuel prices for 2010-2020.

While this study was specific to New York City, the assumed capital costs were typical of an average fuel conversion, and due to the fact that the study also used national fuel price averages in its calculations, this payback period is fairly representative of what the average U.S homeowner can expect.

Notably, this study did not include any incentives in its calculations meaning in reality, the typical payback period for conversion is likely to be much shorter (less than three years), assuming the homeowner has access to rebates. The full report can be accessed here.

Calculating an accurate estimate of your return on investment requires specific knowledge of different variables including: initial installation costs, the age of your current furnace, the efficiency of your new furnace, the prices of both heating oil and natural gas, and the amount of energy you typically use in a year. If you have access to this information, you can utilize a conversion savings calculator to determine when your energy savings will overcome the conversion
cost. Some calculators will calculate fuels costs for you based upon your State of residence. We provide three examples below.

- ConEdison Conversion Calculator
- Your Money Page Conversion Calculator
- PECO Conversion Calculator

For a detailed look into regional fuel prices and expenditures within the United States check out this table prepared by the US Energy Information Administration. You can use the data shown here to determine in which US region homeowners can benefit the most from converting from heating oil to natural gas. Compare an average expenditure of $2,243 on heating oil to an average expenditure of just $663 on natural gas in the winter of 2013-2014. Figure two shows average US expenditures on heating oil vs. natural gas during the winter months based on this data.
Recent Popularity of Oil to Gas Conversion in the US

It’s no surprise why converting to natural gas is becoming more and more popular in the United States. For an extended period of time, oil prices and natural gas prices were very closely correlated meaning that the price difference between the two fuels remained relatively constant.

However, due to recent developments in hydrofracking, natural gas prices have now decoupled from oil prices and are now more linked to coal prices. This means that as oil prices increase, natural gas prices no longer necessarily follow suit. In fact, recent trends have seen natural gas prices fall while oil prices have risen, as shown in figure three.
Furthermore, the US currently has a significant advantage on natural gas prices compared to other developed countries which commonly use the fuel source. Figure four below shows natural gas prices for the US, the UK, Germany, France, and Japan. The United States now has a favorable opportunity to save money by utilizing our lower natural gas prices.

Figure 3: Wellhead hydrocarbon prices over the past 3 decades.
Beyond saving you money on fuel expenditures, converting to natural gas can also provide homeowners with a few other benefits. First of all, natural gas can be used for more than just heating a home. As an energy source, natural gas can also be used to heat water, dry clothes, cook, and much more depending on your family’s needs. It’s also less expensive to maintain. Second, natural gas as a heating source has been shown to increase property values for both residential and commercial buildings, and recently, those looking to buy a new home have been shown to strongly prefer natural gas as a heating source over oil. Third, as natural gas is piped directly to your home, there is no need for a large storage tank taking up space in your basement. You will also no longer require periodic fuel deliveries as are necessary with heating oil.

Figure 4: “Average natural gas price for households over the period 2003-2012 in US cents/kWh (GCV) based on average exchange rates for each year.” (Source: Munster, Jason. ”Natural Gas Prices 2.” Jason Munster’s Energy and Environment Blog. 20 Jan. 2013.)

Other Benefits of Natural Gas
2.5: Natural Gas Price Spikes in the Northeast

Over the past few years, natural gas prices in the Northeastern United States have spiked during the winter months. In early 2014, natural gas prices in New England reached a five-year high. While the general trend in natural gas prices has seen an overall decrease as of late, these spikes have many worried that the economic benefits of conversion may not be here to stay.

Despite having America’s largest natural gas field relatively nearby as shown in figure five, the underlying cause for natural gas price spikes in New England is an underdeveloped pipeline system. Efforts to expand natural gas pipelines in the northeast have made little progress as constructing new pipe requires long term contracts which power companies have not been able to provide. Furthermore, the expanded capacity of a larger system would only be required during demand peaks in the winter and would otherwise be redundant for the majority of the year.

Figure six shows a map of natural gas pipelines in the northeast; click here for more information about US natural gas pipelines. With an expected increase in demand for natural gas in New England, and no significant progress in expanding pipelines, winter price spikes are not expected to be abated over the next few years.
Despite these price spikes, the price of oil still remains relatively high overall in comparison to natural gas which means converting is still a very viable option economically. You can utilize this heating options comparison tool provided by New Jersey Natural Gas to get an estimate of how much you would have to spend annually on different fuel sources to heat your home. Figure seven provides an example result from the tool. Please note that these calculations are based on estimates only and should not be heavily relied upon in making a detailed cost estimate.
Figure 7: Example readout from the comparison tool for residential heating options provided by New Jersey Natural Gas. (Source: http://www.njng.com/my-home/convert-gas/rebate-info.asp)
**About Us**

360Chestnut

360Chestnut is dedicated to helping you make your home more healthy, energy efficient and sustainable. Our goal is to be a one-stop information resource for consumers to help them determine cost-effective home improvement projects, locate financial incentives for energy retrofits and renewable energy projects, and connect with certified contractors within our trusted network of service providers. Here at 360Chestnut, you can Save Energy, Save Money, and Live Better.

Check out our [website](#), [blog](#), and [video series](#) for the most up-to-date information and useful tips on how to make your home more energy efficient and create a healthier and more sustainable living environment. Visit 360Chestnut [online store](#) for a wide range of energy-saving products for your home and business.

**Meet the Founder**

Harold Simansky is one of the cofounders of 360Chestnut. Before that he was involved in the creation of Green Guild of MA, LLC, a full-service energy audit and home weatherization company that has helped over 1,000 Massachusetts home owners make their homes more energy efficient. Earlier, Harold was the developer of one of the first green, LEED-certified residential buildings in the Boston-area. Harold also has experience in the world of finance and as a consultant with Bain & Company. He is a graduate of the MIT Sloan School of Management and Brandeis University.