



## INTRODUCTION

Heating oil is a petroleum product used by many Americans to heat their homes. Historically, heating oil prices have fluctuated from year to year and month to month, generally being higher during the winter months when demand is higher. To understand the reasons for these price variations, consumers need to understand how heating oil is used and how and where it is produced.

### WHO USES HEATING OIL?

Of the 111 million households in the United States, approximately 8.5 million use heating oil as their main heating fuel. Residential space heating is the primary use for heating oil, making the demand highly seasonal. Most of the heating oil use occurs during October through March. The area of the country most reliant on heating oil is the Northeast (see box on back panel).

Some customers try to beat rising winter prices by filling their storage tanks in the summer or early fall when the prices are likely to be lower. However, most homeowners do not have large enough storage tanks to store the full amount needed to meet winter demands. Because homeowners may have to refill their tanks as often as 4 or 5 times during the heating season, possible rising or spiking prices are a concern.

### WHERE DOES HEATING OIL COME FROM?

The United States has two sources of heating oil: domestic refineries and imports from foreign countries. Refineries produce heating oil as a part of the “distillate fuel oil” product family, which includes heating oils and diesel fuel. Distillate products are shipped throughout the United States by pipelines, barges, tankers, trucks and rail cars. Most imports of distillate come from Canada, the Virgin Islands, and Russia. Refiners are limited in the amount of heating oil they can make to meet the demands of the winter heating season. Some winter heating oil is produced by refineries in the summer and fall months and stored for winter use. During the coldest winter months, the inventories that are built in summer and fall are used to help meet the high demand. Refiners can increase heating oil production in the winter to a modest degree, but they quickly reach a point where, to

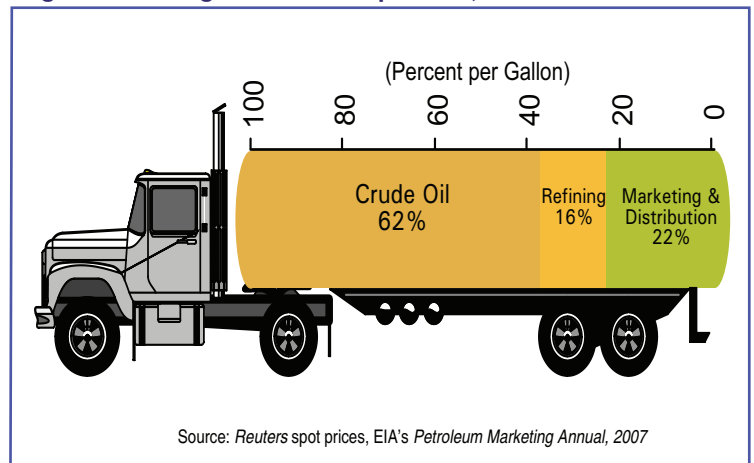
produce more heating oil, they would also have to produce more of other petroleum products which could not be sold in sufficient quantities during the winter months. On the other hand, if consumer demand is high for a seasonal product, such as gasoline, refiners may delay producing heating oil for the winter, which may lower inventories at the start of the heating season. This was the case in September and October 2005, after Hurricanes Katrina and Rita shut down Gulf Coast production capacity. As gasoline prices shot up over \$3.00 per gallon, refiners had incentive to produce more gasoline at a time when they would normally concentrate on heating oil production.

Heating oil is brought into oil storage terminals in an area by refiners and other suppliers. For example, heating oil may be delivered to a central distribution area, such as New York Harbor, where it is then redistributed by barge to other consuming areas, such as New England. Once heating oil is in the consuming area, it is redistributed by truck to smaller storage tanks closer to a retail dealer’s customers, or directly to residential customers.

### HOW MUCH DOES A GALLON OF HEATING OIL COST?

Heating oil prices paid by consumers are determined by the cost of crude oil, the cost to produce the product, the cost to market and distribute the product, as well as the profits (sometimes losses) of refiners, wholesalers and dealers. In 2007, crude oil accounted for 62 percent of the cost of a gallon of heating oil. The next largest component, distribution and marketing costs, accounted for approximately 22 percent of the cost of a gallon of heating oil. Lastly, refinery processing costs accounted for another 16 percent. (See Figure 1.)

Figure 1. Heating Oil Price Components, 2007



## WHY DO HEATING OIL PRICES FLUCTUATE?

Heating oil prices paid by consumers can vary over time and by where a consumer lives. Prices can change for a variety of reasons. These include:

### *Seasonality in the demand for heating oil*

When crude oil prices are stable, home heating oil prices tend to gradually rise in the winter months when demand is highest. However, at times, prices can surge quickly to very high levels (see box on “What Causes a Surge in Heating Oil Prices”). A homeowner in the Northeast might use 850-1200 gallons of heating oil during a typical winter, while consuming very little during the rest of the year.



### *Changes in the cost of crude oil*

Since crude oil is a major price component of heating oil, changes in the price of crude oil will generally affect the price of heating oil. (See Figure 2.) Crude oil prices are determined by worldwide supply and demand. Demand can vary worldwide with the economy and with weather. Supply can be influenced by the Organization of Petroleum Exporting Countries (OPEC) and other factors.



### *Competition in local markets*

Competitive differences can be substantial between a locality with only one or a few suppliers or dealers versus an area with a large number of competitors. Consumers in remote or rural locations may face higher prices because there are fewer competitors.

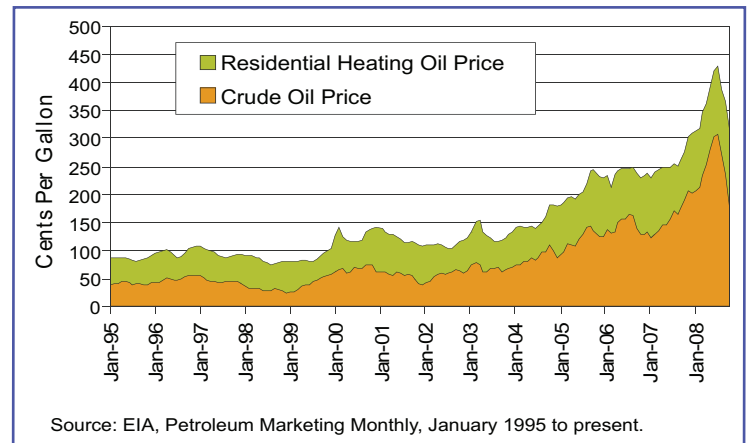


### *Regional operating costs*

Prices also are impacted by higher costs of transporting the product to remote locations. In addition, the cost of doing business by dealers can vary substantially depending on the area of the country in which the dealer is located. Costs of doing business include wages and salaries, benefits, equipment, lease/rent, insurance, overhead, and state and local fees.



Figure 2. Heating Oil Prices Follow Crude Oil



## WHAT CAN YOU DO TO LOWER YOUR HEATING OIL BILL?

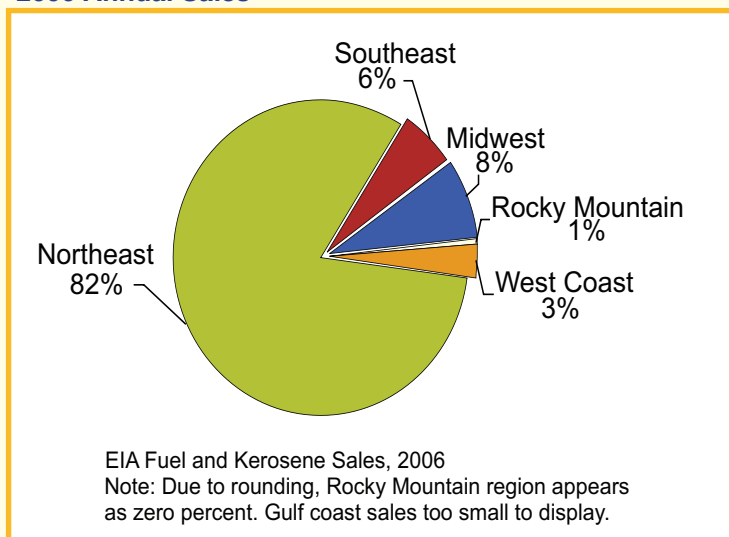
You can arrange to have your tank filled in late summer or early fall when prices are generally lower. Talk to your heating oil dealer about participating in a budget plan to help stabilize your monthly bill. You can also talk to your heating oil dealer about “cap” or fixed price protection programs, which can help keep costs down. You can obtain a home energy audit to ensure that your furnace and appliances are running efficiently before the season begins. You can achieve conservation gains by weatherizing your home, i.e., installing the proper insulation in your house and around your hot water heater. Quick and easy fixes such as caulking and weather stripping windows and doors to seal out cold air also help save energy. Installing a programmable thermostat and reducing temperature settings on your thermostat, especially when you are not at home, are other ways to reduce your heating fuel costs.

Lastly, both Federal and State energy assistance programs are available to heating oil customers who have a limited budget. For example, the Low Income Home Energy Assistance Program (LIHEAP) is a Federal program that distributes funds to States to help low-income households pay heating bills. Additional State energy assistance and fuel fund programs may be available to help households during a winter emergency. To find out if you qualify for assistance in your State, see: [www.acf.dhhs.gov/programs/liheap/grantees/index.html#states](http://www.acf.dhhs.gov/programs/liheap/grantees/index.html#states) or contact your local heating oil dealer.

## HEATING OIL IS IMPORTANT TO CONSUMERS IN THE NORTHEAST

Of the 8.5 million households in the United States that use heating oil to heat their homes, 6.5 million households or roughly 76 percent are located in the Northeast region of the country. The Northeast region (which includes the New England and Central Atlantic States) remains the area with an appreciable share of oil-heated single family homes. In other regions, older homes have been converted from oil heat to gas heat, and oil no longer has a noticeable share of the new home construction market. Thus, the seasonal increase in inventories and demand (sales of heating oil) is largely confined to the Northeast. In 2006, 4.1 billion gallons of heating oil were sold to residential consumers in the Northeast; this is 82 percent of total residential fuel oil sales. (See Figure 3.)

**Figure 3. Residential Heating Oil Sales By Region, 2006 Annual Sales**



## WHAT CAUSES A SURGE IN HEATING OIL PRICES?

Home heating oil prices sometimes can change dramatically in a short period of time. Why does this happen? If refiners, wholesalers, dealers and consumers have enough heating oil in storage and temperatures do not drop rapidly, prices hold fairly steady (assuming crude oil prices are also not changing much). However, a rapid change to colder weather can impact both supply and demand; people want more fuel at the same time that harbors and rivers are frozen or delivery systems are interrupted. During this time, the available heating oil in storage is used much faster than it can be replenished. Refineries normally cannot keep up with demand during these cold periods. Wholesale buyers become concerned that supplies are not adequate to cover short-term customer demand and bid up prices for available product. In the Northeast, for example, additional supplies may have to come from some distance away, such as the Gulf Coast or Europe. It costs more to transport heating oil from these sources to the Northeast, and it also can take two to three weeks to arrive. During the time that resupply from distant markets is occurring, the supply of heating oil that sellers in the region have in storage drops further, buyers' anxiety about finding heating oil in the short term rises, and so do prices – sometimes sharply – until new supply arrives.

Additionally, during very cold periods, prices of other heating fuels (such as natural gas or kerosene) may increase even more than heating oil prices. In this case, some consumers may switch from using their normal heating fuel to using heating oil, thereby increasing the demand for heating oil.

## INFORMATION ABOUT HEATING OIL PRICES...

For the latest update on heating oil demand, prices, and inventories, see our "Heating Oil and Propane Update" section of the Web site at:

<http://tonto.eia.doe.gov/oog/info/hopu/hopu.asp>

In addition, our weekly feature This Week in Petroleum contains the most current information on demand, prices, and inventories of crude oil, gasoline, distillate and propane. See

<http://tonto.eia.doe.gov/oog/info/twip/twip.asp>

# Residential Heating Oil Prices

## What Consumers Should Know

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The Energy Information Administration is an independent statistical agency within the U.S. Department of Energy whose sole purpose is to provide reliable and unbiased energy information.

For further information, contact:  
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