

Homeowner's Guide to Heating with Oil



The more you know about oil, the better you'll feel

You may have lived in an oil-heated home for years, or you may be having your first experience with oilheat. Either way, you'll find the material in this guide helpful — and perhaps even a little surprising.

As an oilheat consumer, you should know that oil heat is clean, efficient, cost-effective, safe, versatile and is getting better all the time.

Knowing the facts about oil will help you make educated decisions, save money and keep your home as comfortable as possible.

Please look to the oilheat dealers in your area as a resource for information and help. It would be their pleasure to answer any questions you may have after reading this guide.

Fast facts about oilheat

1. There are approximately 7 million oil-heated homes in the U.S.
2. The efficiency levels of today's oilheat systems can exceed 95% (see page 3).
3. New technology has made oilheat 95% cleaner than 40 years ago (see page 4).
4. The chances of an underground storage tank leak are extremely low and a modern tank has an even lower risk (see page 12).
5. For every gallon of oil burned, a whopping 138,000 Btus of heat are generated. The amount of this heat that warms a home depends on the heating system's efficiency.
6. Oil companies received a rating of 94% for friendly and fast service (see page 14).

New advances raise efficiency and lower consumer costs

Q: Is oilheat an efficient way to heat a home?

A: Yes. Oilheat has always provided efficient and affordable warmth and has improved in recent years. Many oil-fired systems now display the prestigious **Energy Star** label, which signifies that they are technologically advanced and clean burning. Some oilheat systems have efficiency ratings that exceed 95%.

Q: What's behind this success?

A: There have been dramatic improvements in oilheat technology, with advances such as the high-static pressure flame-retention burner, solid-state microprocessor, electronic controls and cleaner burning fuel.



Higher efficiency = big savings

1,300 gallons

average annual fuel consumption in 1980



700 gallons

average annual fuel consumption today



Improved efficiencies in oilheat equipment have saved homeowners hundreds of dollars a year.

Cleaner than ever

Q: I have some concern that oilheat isn't clean. What's the truth?

A: Just like older cars, older heating systems produced undesirable levels of combustion emissions. But today's oilheat technology has been tested by the U.S. Department of Energy's Brookhaven National Laboratory, and it has been found to be virtually soot-free.

In fact, technological advances have made oilheat

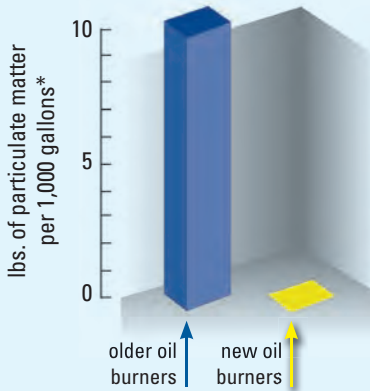
95% cleaner than just 40 years ago. That's one reason oilheat emissions aren't even regulated by the federal Clean Air Act.

For older systems, emissions can be substantially reduced with regular, professional tune-ups.

Spot Check

Sometimes people see dark spots or streaks on the walls of oil-heated homes and erroneously assume they are caused by soot from the heating system. These marks are typically created by common household dust that has been "baked on" walls and other surfaces near heating vents, radiators or baseboards. To prevent these streaks and spots, dust around baseboards, vents or radiators, especially during the heating season.

Oilheat is **95% cleaner** than 40 years ago, producing near-zero levels of combustion emissions.

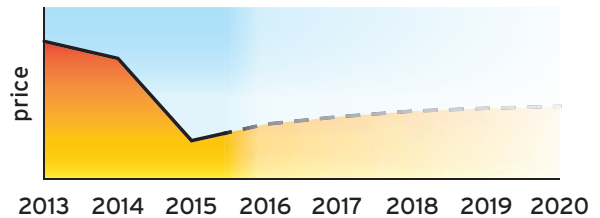


Looking at fuel prices

Q: Is heating oil a good value?

A: Heating oil, like other forms of energy, is a commodity traded on the open market, so you can expect some ups and downs in its price. Recently, prices for other energy sources spiked, while heating oil prices fell. And the long-term projections for heating oil suggest that prices will stay lower for years to come.

Wholesale oil prices



Source: IMF Commodity Price Forecast

Q: How is the price of heating oil determined?

A: Many factors which are beyond the control of oil dealers influence the price consumers pay for fuel oil. They include crude oil prices, refining capacity, transportation costs and seasonal temperature levels. Despite that, competition among thousands of local oilheat companies plays an important role in ensuring value and service for heating oil customers.

At the dealer level, the price customers pay for fuel oil is determined in part by the level of service the dealer provides. Companies with service plans, 24-hour emergency service, payment plans and equipment financing typically command a higher fuel price than companies that only deliver oil. Many companies offer several price options so customers can choose one that meets their needs.

*Source: USEPA

Abundant supplies

Q: Are there adequate supplies of heating oil?

A: Yes. It has been decades since there was a significant problem with heating oil supplies. In fact, production of heating oil in the U.S. over the last five years has nearly doubled, reducing our dependence on foreign oil and ensuring that oilheat homeowners will always have enough oil to heat their homes. In addition, the U. S. has established a one-million-barrel heating oil reserve for added insurance.



Made in the USA

→ Heating oil represents only 3% of total petroleum consumption in the U.S.

→ Approximately 85% of the heating oil used in the U.S. is refined domestically.

→ More than 70% of the oil used in the U.S. comes from the U.S. This is the highest level since 1985.

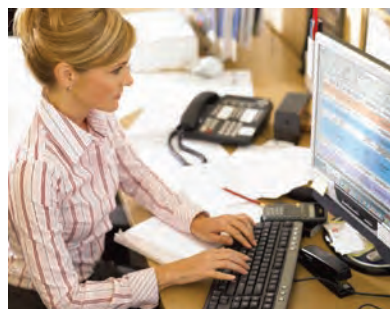
→ Studies show that there are as many as two trillion barrels of crude oil in the world still untapped, enough to last for nearly a century.

...and easy deliveries

Q: What's the easiest way to get a delivery?

A: The easiest way to get heating oil is through automatic delivery. The oil company normally counts “degree-days” to keep track of how cold the weather has been and calculates an individual burn rate for each customer. This lets the company know just when a customer will need a delivery, long before most people would know it themselves.

Automatic delivery doesn't mean more fuel is burned. It provides peace of mind because you don't have to think twice about how much fuel is in your tank.



Bioheat: The Fuel of the Future



Bioheat is a blend of home heating oil and biodiesel, which is made domestically from soy, vegetables and other natural sources. Bioheat is even cleaner, more environmentally friendly, and leads to greater system efficiency. Bioheat has become the norm, so that customers can receive the cleanest and greenest heating oil possible.

How oilheat systems work

The heat produced by an oilheat system is distributed through a home in one of three ways: warm air (registers or vents), hot water (baseboard, radiators or radiant) or steam.

While the system in your home may look

a bit different from those in the diagrams below, it operates on the same principles.

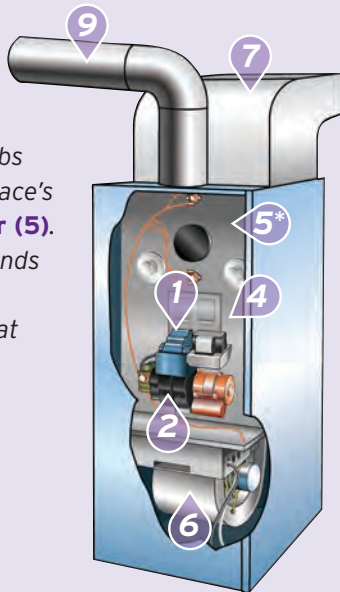
Whatever the system, any emissions are safely vented to the outside and never mix with the indoor air.

The thermostat has a sensor that measures room temperature. When the temperature drops below your thermostat setting (or when the setting is raised), the thermostat sends a signal to the **controls (1)** on the **burner (2)** to go into action.

A **fuel pump (3)** draws oil through a filter to the burner. The nozzle on the burner turns this oil into a fine spray, mixes it with air and ignites it in the **combustion chamber (4)**, causing the chamber to get very hot.

What happens next depends on the type of heating system.

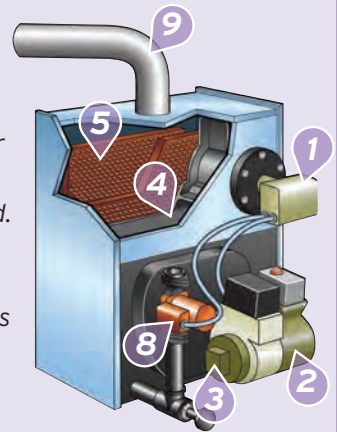
→ In a **warm air system** (diagram at right), air absorbs heat in the furnace's **heat exchanger (5)**. A **blower (6)** sends this air through **ducts (7)** to heat the home.



*not visible

→ In a **hot water, or hydronic, system** (diagram below), water circulates around the **combustion chamber (4)** of the boiler. Heated water goes through a system of pipes to radiators or baseboards, and eventually returns to the heating unit with the aid of a **circulator pump (8)**, and the cycle starts again. An expansion tank adjusts the system for varying water pressures.

→ **Steam systems** are similar to hot water systems except that steam, not hot water, is generated. Steam rises to radiators or baseboards so no circulator is needed. A low-water cutoff shuts down the boiler if water levels drop, preventing boiler damage.



In all systems, combustion emissions go up the **flue (9)**, never mixing with the air, water or steam distributed through the home.

Upgrading to a lean, clean, modern machine

Q: What should I do about an old system?

A: Old systems can generate higher than necessary fuel bills, but they can easily be replaced with equipment that incorporates new oilheat technology. The nonprofit **Consumer Energy Council of America** concluded that changing fuel sources does not make “economic sense” and the best bet is to upgrade to new equipment in order to improve efficiency.



Upgrading to a new oilheat system pays

Q: How do I know if my system should be replaced?

A: Oilheat systems typically last 30 years and longer. However, the older the system, the greater the gain in efficiency and cleanliness through upgrading. If your oilheat system is more than 20 years old, upgrading to a new heating oil system could save you hundreds of dollars a year.

The greater the efficiency, the MORE you SAVE!

Current system efficiency

Annual fuel savings (per \$2,000 of fuel)

65% \$460

60% \$580

55% \$700

50% \$820

This chart shows average savings from **upgrading** to a new system with **85% efficiency**.

Source: American Council for an Energy-Efficient Economy. Average savings vary, depending on square footage of home, number in household, insulation quality and other factors.

Size Matters

Modern oilheat systems are smaller, cleaner and more efficient than ever.

Q: Besides total replacement, are there low-cost ways to improve an oilheat system's efficiency?

A: **Yes.** A professional tune-up can raise efficiency by up to 5%. You can also improve efficiency (by as much as 25%) if you replace an old burner with a modern flame-retention burner, instead of replacing the entire furnace or boiler. Purchasing a new burner is a modest investment with a rapid payback. It's estimated that flame-retention burners have saved homeowners millions of dollars in fuel costs and saved more than seven billion gallons of oil.

Oilheat gives you all the hot water you need

Oilheat is a great way to heat water. It's especially valued by growing families whose dishwashers, washing machines and showers always seem to be running. With the rapid “recovery” rates of oil-fired water heaters, it's unlikely that you will ever run out of hot water — and you'll save money, too! Contact a local heating oil company to find out which water heating option is best for you and your family.



The truth about tanks

“I love the house, but what about the oil tank?”



There are many misconceptions about oil storage tanks. Tanks can last for decades, and when the time comes for replacement, there are many new options that can benefit the homeowner.

- With an oil storage tank on your property, you always have supply on hand.
- With a tank, you pay for the fuel you are delivered—no estimates, no questions.
- The chance of a leak from an underground heating oil tank is extremely low. That's why there are no state or federal regulations requiring residential underground heating oil tanks to be removed if there is no leak.
- Advances in technology have resulted in the manufacture of tanks made from corrosion-resistant materials such as fiberglass and protected steel. Properly installed and maintained, today's oil tanks can last indefinitely.

If you have more questions about storage tanks, call a local oil company. They will be able to address any of your concerns.

Customized storage solutions

Several options are available if you plan to renovate and want to save space.

→ Today's aboveground tanks are relatively small (275 gallons) and they can be customized for hard-to-fit places. For example, a vertical tank can be installed in small or unusually shaped spaces in a basement or garage.

Tanks can also be installed outside the home and hidden in a tank enclosure like the one pictured here.

→ You can also upgrade an old, buried tank with a modern one.

These new units are guaranteed to be corrosion resistant. If you decide on replacing an underground tank, contact a local oil company to find out about your best options because regulations regarding tank abandonment can be confusing.



On-Site Storage

An oil tank on your property puts you in control of your comfort. The storage tank allows you to have an adequate supply of heating oil ready for immediate use with the arrival of cold weather. Many oil dealers offer the option of automatic delivery. By tracking the weather and each customer's fuel consumption, they can refill the tank before the fuel level gets too low. You never need to think about it.

Service and safety

Oilheat companies pride themselves on providing peace of mind and responsive service to their customers. Consider the following:

- **Oilheat users gave their oil companies an average rating of 94% for friendly and fast service** in a recent national survey.
- **Oilheat companies range from companies servicing several hundred accounts to those serving hundreds of thousands of customers**, so homeowners can choose a company that best suits their needs and personalities. Most oil dealers are locally owned and operated with deep roots in their communities.



Heating your home with oil is safe. Were you aware of these two facts?

- **Heating oil does not explode.** If you dropped a lit match into a barrel of oil, the match would go out—as if you had dropped it in water. Oil must be turned into a fine-particle mist before it will ignite and burn, typically at a temperature of 130°-140°.
- **Oilheat poses an extraordinarily low risk for carbon monoxide poisoning.**

Tips for added efficiency and convenience

- *Don't wait until it's cold before arranging for service from an oil company.*
- *Install a programmable thermostat, which can save you hundreds of dollars a year.*
- *Get a professional tune-up to increase the efficiency and cleanliness of your heating system.*
- *Take advantage of oilheat's versatility. Oil is now used in radiant floor heating systems, for warming pools and spas, and for melting snow from driveways.*
- *If you plan to add a room or renovate, contact your local home heating company. The people there may know about options that a typical contractor is not familiar with.*



If you have trouble getting heat, follow these steps.

- See if the oil burner switch is on.
- Check your thermostat. Make sure that it's set above room temperature.
- Check fuses and/or circuit breakers.
- Check your oil tank to see if you have fuel.
- Press the reset button on the burner relay once only.



If, after these steps, your heating system still hasn't come on, call your oil company.

Don't be crude

The thick black oil that once bubbled up out of the ground for Jed Clampett of the *Beverly Hillbillies* could never heat your home.

Straight crude oil is pretty boring. But when it's refined — it can be downright surprising.

Today, homeowners burn **Bioheat**, which is a combination of No. 2 heating oil — the cleanest and most refined oil — and **Biodiesel**, which is made domestically from soy and other natural sources.

As the most refined grade of heating oil, Bioheat burns significantly cleaner and has little negative impact on the environment. Used with a technologically advanced oilheat system, it **produces near-zero levels of particulate matter during the combustion process.**

Bioheat also generates a whopping 138,000 Btus of heating energy for every gallon burned, allowing homeowners to enjoy high comfort levels and great value.



For more information:

Contact the **National Oilheat Research Alliance** (NORA). NORA works in conjunction with the U.S. Department of Energy on research to improve heating oil and oilheat equipment. Its core mission also includes consumer education and technical training for those in the industry.

OilheatAmerica.com



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