



## Converting to No. 2 Heating Oil

Since July of 2012, New York City has had the cleanest No. 2 heating oil in the country, known as ultra-low sulfur (ULS) No. 2 oil, thanks to a New York State Law passed in 2010 that reduces the sulfur content of No 2 oil by 99% to 15 parts per million (PPM). Heating oil can be made even cleaner by blending it with biodiesel, which is a renewable liquid fuel that is derived from agricultural and food co-products and byproducts, and is subject to a state tax credit that can save money. The conversion process is nearly identical whether or not biodiesel is incorporated.

Converting to No. 2 oil (possibly mixed with biodiesel) typically involves less construction and upfront investment than converting to natural gas. However, it is still important to plan at least six months ahead for a conversion. Follow the steps below and contact NYC Clean Heat by calling 311 or sending an email to [info@nyccleanheat.org](mailto:info@nyccleanheat.org) with any questions throughout the process.

### 1. Obtain Conversion Costs

Most burners that can burn No. 4 or No. 6 oil can also burn No. 2 oil and biodiesel. The existing burner must be examined by a licensed professional to ensure capability and safety of burning No. 2 oil and possibly biodiesel. Rotary cup burners usually must be replaced. Conversion costs for No. 2 oil are minimal unless the building needs a new oil tank. Obtain a cost proposal from a licensed heating system contractor, or work with a qualified engineer if more extensive work is required. Costs may include, but are not limited to, pump replacement, disconnecting of side-arm pre-heater, cleaning of the tank and fuel oil lines or tank replacement.

#### Oil Tanks

Work with a contractor to determine if a new oil tank is needed. Oil tanks that are fully and partially underground must pass a tightness test and will need to be relined or replaced if they fail. Above ground tanks less than 30 years old are likely able to hold No. 2 and/or biodiesel without being replaced.

#### Asbestos

Boilers systems installed prior to the 1970s may contain asbestos. A qualified inspector can sample suspect materials to verify if asbestos is present. Asbestos abatement must be done according to the law. Asbestos abatement costs vary widely and depend on individual situations. Visit the New York City Department of Environmental Protection's website to learn more about asbestos requirements.

### 2. Skip the Switch to No. 4 Oil

No. 4 oil is a mixture of No. 6 oil and No. 2 oil. Buildings should switch straight to No. 2 oil and skip the switch to No. 4 oil. Reduced maintenance and increased boiler efficiency associated with No. 2 make the operating costs between No. 2 and low sulfur No. 4 oil closer than many may realize. The reasons for similar operating costs with No. 2 oil than with No. 4 oil are as follows:

- Burning cleaner fuel leads to a cleaner boiler, which results in better boiler efficiency and fewer gallons burned.
- NYC law requires No. 4 oil to contain less sulfur as of October 2012, which could bring prices very close to No. 2 oil prices.
- Using No. 2 oil reduces maintenance costs.
- The biodiesel tax credit can help buildings save money when switching to No. 2 oil mixed with biodiesel.

No. 4 still requires a nozzle line electric pre-heater which uses electricity. Burning No. 2 oil does not require any preheating which results in energy savings.

### 3. Understand Operating Costs

Gather at least 12 months of fuel delivery records for the building to complete a fuel usage analysis to estimate future operating costs. NYC Clean Heat can help conduct a fuel usage comparison to estimate the future costs when using No. 2 oil and/or biodiesel. Switching to No. 2 oil and/or biodiesel will have a positive impact on a building's operating costs, especially when taking advantage of the biodiesel tax credit and when installing efficiency measures.

#### Boiler Maintenance

Buildings can experience significant cost-savings by converting to No. 2 and/or biodiesel:

- A building that burns No. 6 oil typically requires three major boiler cleanings per year because soot build-up in the boiler leads to decreased efficiency. Switching to ULS No. 2 oil usually eliminates the need for one or two of these cleanings, generating approximately \$1,200 per year in savings.
- Burning No. 2 no longer requires daily burner cleanings, allowing the superintendent to devote more time to other building needs.
- No. 2 oil does not need to be electrically heated and circulated, creating electricity savings of approximately \$2,000–\$4,000 per year. A heating system specialist can help calculate the expected savings.

Overall, untreated soot deposition can result in an eight percent lower efficiency rate for a boiler using heavy oil relative to No. 2. Proper maintenance and care for heating systems will result in cost-savings and longer life for all equipment.

#### Energy Efficiency Measures

To ensure that buildings achieve savings when switching to No. 2 oil, energy efficiency measures should be considered. Such measures include the installation of a heat management system, burner controls, radiator shutoff valves, steam trap replacements, insulation of piping and separate hot water heaters during summer months.

#### Tax Credits

Refundable tax credits against personal income tax or franchise tax may be available for the purchase of biodiesel for use for residential space heating and water heating. Tax credits may be worth up to \$0.20 per gallon. Learn more about other incentives when converting.

Visit [nyc.gov/cleanheat](http://nyc.gov/cleanheat) for more information or contact NYC Clean Heat by calling 311 or sending an email to [info@nycleanheat.org](mailto:info@nycleanheat.org).