

Used Oil Facts

Replace Existing Electric Heat with Used Oil-Fired Furnace

Despite the known pollutants in used oil, burning used oil is less polluting than coal combustion at the utility⁽¹⁾. The generation of electric power produces more pollution than any other single industry in the United States⁽²⁾.

Despite the fact that coal is a non-renewable source of energy, there is still a large supply in the United States. However, a cleaner process for harnessing coal's energy is greatly needed⁽³⁾.

Iowa depends upon coal for over 85% of its electric generation, yet coal is the "dirtiest" of the fuels burned for energy. Burning coal releases gases such as carbon dioxide, methane, carbon monoxide and nitrous oxides, which may contribute to global climate change. Coal burning also generates potentially toxic ash as a byproduct of combustion. This ash is often hazardous, requiring special handling and disposal⁽⁴⁾.

Although the utilities implement various methods to control air pollutants, there are no effective control measures for mercury. Mercury is released during coal combustion, it then settles into water and soil, where it transforms into methyl mercury. In this form, mercury is ingested and bioaccumulated in fish. Mercury is a persistent heavy metal neurotoxin. Most people are exposed to mercury by eating contaminated fish. The highest risks are to unborn fetuses of mothers who ingest mercury-contaminated fish. Impaired motor and cognitive skills have also been seen in children and adults⁽⁵⁾. This is the reason used oil combustion can be considered 'cleaner' than coal combustion.

To determine the economic possibilities of replacing electricity as your source of heat with used oil, use the [Cost-Benefit Calculator](#).



References

- (1) New Zealand Ministry of the Environment (2000). *Final Report: Assessment of the Effects of combustion of Waste Oil, and Health Effects Associated with the Use of Waste Oil as a Dust Suppressant*. Woodward-Clyde (ZA) Ltd. August 2000.
- (2) *Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States -2002*. CERES, NRDC, & PSEG. April 2004. http://www.nrdc.org/air/pollution/benchmarking/2002/benchmark2002_pt1.pdf
- (3) Silverspot Consulting, silverspot@optonline.net
- (4) University of Northern Iowa, Energy Education Curriculum Project, http://www.earth.uni.edu/EECP/elem/mod1_bgi.html
- (5) United States Environmental Protection Agency. <http://www.epa.gov/mercury/>

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Used Oil Furnace Cost Worksheet - Electricity

CURRENT FUEL CONSUMPTION		YOUR FACILITY	EXAMPLE
A	Approximately how much used oil do you generate per year?		750 gallons
B	Approximately how much electricity did your facility consume to heat your shop last January?	Kilowatt hours	2,010 kilowatt hours
C	Approximately what dollar amount was spent to heat your shop last January?		\$289
D	Published Heat Value for Electricity	3,412 btu/kilowatt hour	
USED OIL REQUIREMENT CALCULATIONS		YOUR FACILITY	EXAMPLE
E	Btu requirement [(B x D) x 6 months]		41,148,720 btu
F	Btu requirement per hour (E/4,320 hours)		9,525 btu
G	Gallons of used oil required per month for heating season (E x gal/135,000 btu/6 months)		50 gallons
Cost Calculations [Pick H, I or J depending on your btu requirements (F)]		Your Facility	Example
H	Capital Cost for Small Unit* = \$4413 Average		\$4413
I	Capital Cost for Medium Unit** = \$5993 Average		NA
J	Capital Cost for Large Unit*** = \$10,375 Average		NA
K	Monthly cost for furnace over 3 yrs (H, I or J/36 months)		\$123
L	Payback less than 3 years? [K≤(C x 6)]		Yes

* 140,000 – 200,000 btu/hr maximum capacity

** 200,000 – 350,000 btu/hr maximum capacity

***350,000 – 500,000 btu/hr maximum capacity