

Used Oil Facts

Replace Existing Natural Gas Heat with Used Oil-Fired Furnace

Natural gas is a generic term for the gases generated by the decomposition of plant and animal matter over millions of years. **Like coal and oil, natural gas is not a renewable resource and our supplies will eventually run out.** The major component of natural gas is methane⁽¹⁾.

Natural gas is considered the 'cleanest' of the fossil fuels used for energy. **When compared to coal combustion, burning natural gas produces 43% fewer carbon emissions for each unit of energy, and 30% less when compared to oil.** Natural gas also generates fewer toxic air pollutants, particulate matter and no solid wastes such as ash⁽²⁾. However, combustion of natural gas does generate significant amounts of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOCs) sulfur dioxide (SO2) and particulate matter. The greenhouse gases methane, carbon dioxide (CO2) and nitrous oxide are also produced⁽³⁾.

The degree of environmental effects due to the extraction of natural gas from underground reserves is continually debated. It is clear, however, that extraction activities can negatively impact wildlife and habitat⁽⁴⁾. Examples of negative environmental effects include soil loss, land erosion, flooding and landslides⁽¹⁾. There are currently about 500 natural gas processing plants in the United States⁽⁵⁾.

Natural gas can be used to generate electricity in older combustion plants, or the newer more efficient combined cycle plants⁽¹⁾. Natural gas is also delivered directly to residential and commercial consumers where it is burned for heat. In 2005, commercial entities in the United States consumed approximately 3 trillion cubic feet of natural gas⁽⁶⁾.

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



References

- (1) Power Scorecard. *Electricity from Natural Gas*. <http://www.powerscorecard.org>
- (2) Union of Concerned Scientists, Citizens and Scientists for Environmental Solutions, *Clean Energy, How Natural Gas Works*. http://www.ucsusa.org/clean_energy/fossil_fuel/offmen-how-natural-gas-works.html
- (3) United States Environmental Protection Agency, *Compilation of Emission Factors AP-42, Volume 1, Fifth Edition*, 1995.
- (4) Silverspot Consulting, silverspot@optonline.net
- (5) Energy Information Administration, Office of Oil and Gas, *Natural Gas Processing: The Crucial Link Between Natural Gas Production and Its Transportation to Market*. January 2006. http://www.eia.doe.gov/pub/oil_gas/natural_gas/feature_articles/2006/ngprocess/ngprocess.pdf
- (6) United States Department of Energy, Energy Information Administration, *Energy Statistics from the United States Government*. <http://www.eia.doe.gov>

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Fact Sheet

Used Oil Furnace Cost Worksheet – Natural Gas

CURRENT FUEL CONSUMPTION		YOUR FACILITY	EXAMPLE
A	Approximately how much used oil do you generate per year?		750 gallons
B	How much natural gas was consumed to heat your shop last January?	ccf	892 ccf
C	What dollar amount was spent on natural gas charges last January?		\$187
D	Published Heat Value for Natural Gas	1,020 btu/scft	
USED OIL REQUIREMENT CALCULATIONS		YOUR FACILITY	EXAMPLE
E	Btu requirement [(B x D) x 6 months]		5,459,040 btu
F	Btu requirement per hour (E/4,320 hrs)		1264 btu/hr
G	Gallons of used oil required per month for heating season (E x gal/135,000 btu/6 months)		7 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		N/A
J	Capital Cost for Large Unit*** = \$10,375 Average		N/A
K	Monthly cost for furnace over 3 yrs (H, I or J/36 months)		\$123
L	Payback less than 3 years? (K≤C)		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