

# Oil, Gas or



**Conservation Makes More  
Sense than Switching from  
Oil to Natural Gas.**

An Important Message from the  
Consumer Energy Council of America

## **Energy Conservation: Better for the Environment & Economy**

From an environmental perspective, it is much better to conserve a BTU of oil than to replace it with a BTU of gas. Because air emissions are similar, air pollutant emissions are reduced more by conserving a BTU of fuel than by replacing a BTU of oil with gas.

From a national economic perspective, it is also better to conserve a BTU of oil than replace it with a BTU of gas. Energy conservation extends available resources and increases supply relative to demand for home heating. It helps offset future price spikes that result from shortages of both oil and natural gas.

### **About CECA**

Founded in 1973, the Consumer Energy Council of America (CECA) is the nation's senior public interest organization focusing on the energy, telecommunications and other network industries. CECA is a leading national and international resource for information, analysis and technical expertise on the social and economic impacts of a wide variety of public policy initiatives. CECA has a primary commitment to ensuring reliable, sustainable and affordable essential services to the consumer. CECA has an unparalleled track record of building consensus among the public and private sectors, including federal, state and local bodies, businesses, utilities, consumer and environmental organizations, government agencies and academic institutions in furtherance of public policy objectives.

For additional copies and quantity discounts, contact:

**Consumer Energy Council of America**  
2000 L Street, NW, Suite 802  
Washington, DC 20036  
Tel: 202 659-0404  
Fax: 202 659-0407  
[www.cecraf.org](http://www.cecraf.org)  
[outreach@cecraf.org](mailto:outreach@cecraf.org)

Copyright © 2001 by the Consumer Energy Council of America. All rights reserved.

## **Lowering Energy Bills with Your Current Heating System**

Every year, only 5% of consumers need a new heating system. For the 95% of consumers who do not need a new heating system, **fuel switching makes no economic sense**. To lower your energy bills, consider these conservation methods below. Individually or in combination, they yield returns that are considerably better than fuel switching in most cases.

**House Doctor** – reduces air infiltration by caulking or weatherstripping open spaces around windows and doors, light switches, wall outlets, etc. Estimated return on your investment is 33%.

**Insulate** – reduces heat loss through walls and ceilings. The estimated return can be as high as 39%.

**Install a flame retention burner** – if your old system will last ten more years, this moderately priced measure can provide a rate of return of up to 46%.

The above measures, singly and in combination, yield returns that are considerably better than fuel switching in most cases.

## **Lowering Energy Bills with a New Heating System**

For the 5% of consumers each year needing a new heating system, the best advice, in most cases, is to buy a high-efficiency oil heat system. Furnaces and boilers generally range from a low Annual Fuel Utilization Efficiency (AFUE) rating of 80% to an AFUE rating of over 90%.



## Exploring Energy Choices

In response to the recent upturn in energy prices, the Consumer Energy Council of America (CECA) has issued a report comparing the economics of switching fuel sources versus investing in conservation. The findings in this study concur with the findings of the four previous fuel switching studies conducted by CECA.



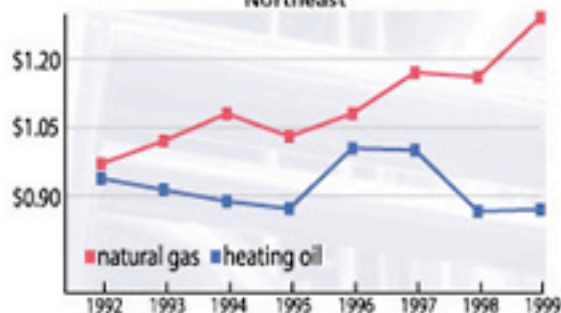
This study concludes that it is *financially unwise for consumers to convert from oil to gas heat.* In the 95 out

of 100 cases where consumers do not need a new heating system, it makes economic sense to stick with oil and invest in conservation. For the 5% of consumers who need to replace their oil heating systems, a careful assessment of conversion costs must be made.

## Price Parity: Comparing Oil and Gas Prices

In order to compare conservation and equipment investment options, CECA examined the relative prices of heating oil and natural gas. Although Northeast and Mid-Atlantic oil prices (where the majority of heating oil is consumed) have been lower than natural gas for the last 8 years, this study has been based on price parity between the fuels.

**1992-1999 Fuel Oil & Gas Prices**  
Northeast



## What About Future Prices?

If historical data can be deemed a good indicator of future market conditions, heating oil prices should continue to be less expensive than natural gas. Therefore, conservation techniques will continue to benefit homeowners more than switching fuels.

## Deciding Between Investment in Conservation or Fuel Switching

To determine the effectiveness of energy conservation for your home, you must consider your annual fuel usage. Our table measures rates of return for an "average" use home (865 gals. heating oil/year) and for a "low" use home (623 gals. heating oil/year). For above-average use homes, investment returns will be even higher than estimated.

## Looking at the Table

The table examines two cases: (1) Conservation vs. switching to a gas burner when a new heating system is not needed; (2) Comparing efficiencies of oil and gas heat equipment when a new system is needed. Conservative conversion costs of \$500 and \$1000 are calculated here. These costs, which can include hook-up charges, installation fees, lost oil, removal or deactivation of the oil tank, chimney re-lining and more, can actually total as much as \$5000 or more in many cases. So be sure to obtain a written estimate of all costs before proceeding.

CECA's research concludes that it would take very unlikely assumptions about large price advantages for gas and no conversion costs to make conversion an attractive investment. Even then, there are often more effective conservation options that save energy and money.



## Conservation and Fuel Switching Costs and Energy Savings

[The higher the number, the better the investment.]

### If a new heating system is not needed

Measure	Total Cost* (\$)	Energy Savings (%)	Rate of return by annual fuel use of residence (with price of oil at \$1.32 per gallon equivalent)	
			Avg. Use (%)	Low Use (%)
<b>Conservation Measures</b>				
House Doctor	570	13	32.80	17.49
Ceiling Insulation	650	16	39.44	24.73
Wall Insulation	1360	15	13.14	7.28
Flame Retention Burner	580	16	46.46	28.78
Setback Thermostat	350	9.5	45.37	28.16
Burner & House Doctor	1190	27	35.21	22.19
Burner & Ceiling Insulation	1540	29	27.38	17.26
<b>Fuel Switching</b>				
Installing a gas conversion burner	1050	0	None	None

### If a new heating system is needed

Measure	Total Cost* (\$)	Rate of return by annual fuel use of residence (with price of oil at \$1.32 per gallon equivalent)	
		Avg. Use (%)	Low Use (%)
<b>New oil flame retention burner</b>			
	580	46.46	28.78
<b>Conversion to a gas burner only</b>			
	1050	None	None
<b>New oil furnace</b>			
80% AFUE	1860	24.28	6.17
90% AFUE	2690	19.99	6.44
<b>Conversion to a gas furnace with \$500 in conversion costs</b>			
80% AFUE	2360	17.64	3.07
90% AFUE	3190	15.82	4.14
<b>Conversion to a gas furnace with \$1000 in conversion costs</b>			
80% AFUE	2860	13.52	0.86
90% AFUE	3690	12.80	2.36
<b>New oil boiler</b>			
80% AFUE	3320	10.65	-0.27
90% AFUE	4260	10.20	5.02
<b>Conversion to a gas boiler with \$500 in conversion costs</b>			
80% AFUE	3820	08.34	-2.10
90% AFUE	4760	08.38	3.60
<b>Conversion to a gas boiler with \$1000 in conversion costs</b>			
80% AFUE	4320	06.50	-3.25
90% AFUE	5260	06.88	2.39

\* Total cost refers solely to the cost of equipment. Including hook-up charges would make the rate of return even lower.