



TECHNICAL UPDATE

GREENHOUSE GAS REDUCTIONS BY OIL HEATING EQUIPMENT

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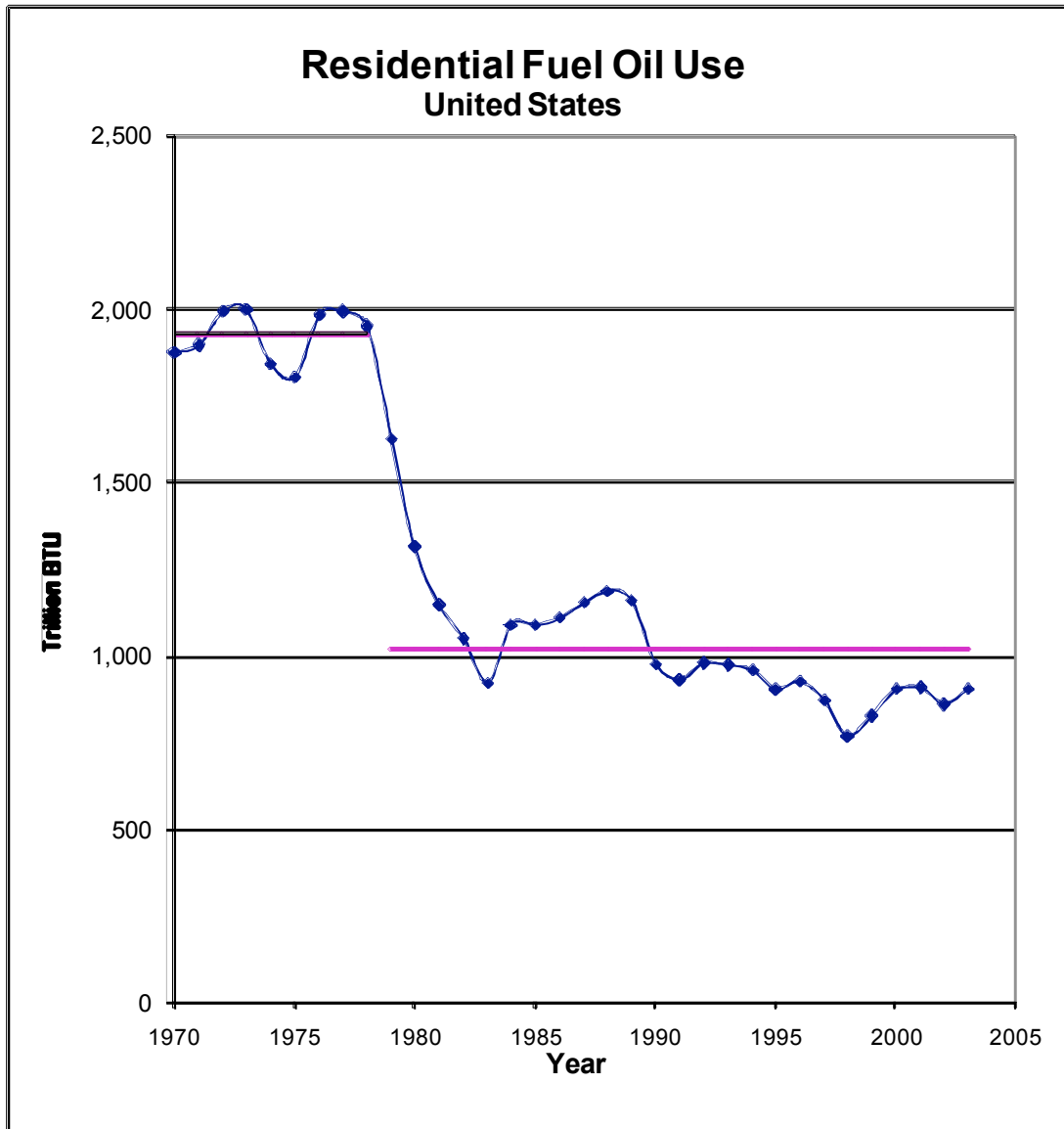
Emissions of Carbon Dioxide, a global warming gas, from residential oil heating equipment have decreased by more than 50 percent over the past three decades. While some of the reductions resulted from a reduction in the number of oil heated homes, energy conservation through house and heating equipment efficiency upgrades have lowered emissions by 20 percent. The typical oil-heated house now consumes much less fuel for heating. It also emits less greenhouse gases.

This update presents the results of a recent study to evaluate energy savings and greenhouse gas emissions reductions by oil heated homes over the past twenty five years. These reductions were, in part, produced by a very successful collaboration between oilheat equipment manufacturers and the US Department of Energy (USDOE) through the research program at Brookhaven National Laboratory. Driven by increased oil prices and assisted by the researchers at Brookhaven, equipment manufacturers substantially increased the efficiency of oil heat equipment, lowered fuel use and annual heating costs, and lowered emissions of air pollutants including greenhouse gases.

The plot that follows shows total residential oil consumption in the US from 1970 to 2003. It is based on USDOE's State Energy Data Report, and it shows quantitatively the reductions in annual fuel use in oil heated residences. The average consumption of residential fuel oil was 1,929 Trillion BTU a year from 1970 to 1978. Consumption decreased dramatically from 1979 to 1981 to an average annual fuel oil use of 1,023 Trillion BTU from 1979 to 2003. This is a 47 percent reduction in fuel use and carbon dioxide emissions.

The current study reviewed census data to estimate the number of oil heated residences each year over the time period that was evaluated. Annual fuel oil savings were calculated each year from 1979 to 2003 compared to the base year. These annual savings were then adjusted to account for changes in the number of oil heated residences. The net savings by conservation averaged 390 Trillion BTU a year compared to the base years. This is a net reduction in fuel use and greenhouse gas emissions (carbon dioxide) of 20 percent for the 25 year period that was evaluated.

This analysis finds that fuel consumption was reduced by 70 billion gallons over 25 years, with a net cost savings to homeowners of more than \$70 billion. **Carbon Dioxide emissions were reduced by 700 Million Metric Tons over 25 years.**



Ref: US Department of Energy- Energy Information Administration

The improved efficiency of oil heating equipment and lower fuel use was supported by the USDOE oilheat program at Brookhaven national Laboratory. Equipment upgrades continue to reduce air emissions including carbon dioxide production each year. If all energy use sectors reduced fuel consumption by 20% as accomplished to date by residential oil heat, the global warming reduction targets for greenhouse gases that have been proposed worldwide would be reached.