

Michigan Residential Heating Oil and Propane Price Survey

2011-2012 Heating Seasons

This report summarizes the results of a survey of residential No. 2 distillate fuel oil (home heating oil) and propane (liquefied petroleum gas) prices over the 2011-2012 heating seasons in Michigan. The Michigan Public Service Commission (MPSC) conducted the survey under a cooperative agreement with the U.S. Department of Energy's (DOE) Energy Information Administration (EIA). This survey was funded, in part, by a grant from the EIA.



Michigan Residential Heating Oil and Propane Price Survey

2011-2012 SHOPP Report

Winter Snapshot

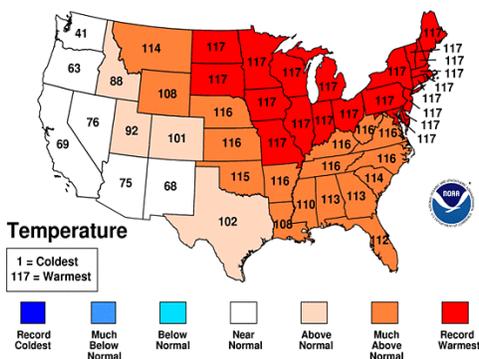
The 2011-2012 winter “heating season” saw uncharacteristically warm temperatures that were 20% higher than normal. Despite reduced heating demand and ample inventories, prices of both propane and heating oil were 8.8 and 16 percent higher than last season. Increased demand in developing economies, geopolitical tensions, market speculation and reduced surplus production capacity have led to sharp increases in crude oil prices, often reflected in end products. Propane remains an important fuel source in Michigan and its use is estimated at 9 percent. Heating oil retains a smaller market share and its share of home heating use is estimated at less than 5 percent.

Purpose of Survey

The State Heating Oil and Propane Survey (SHOPP), is designed to collect data on State-level stocks and residential prices of No. 2 heating oil and propane during the heating season. The data are

used to monitor the prices of propane and heating oil during the winter season, in an effort to maintain awareness of any price or supply irregularities that may be developing.

Oct 2011-Mar 2012 Statewide Ranks
National Climatic Data Center/NESDIS/NOAA



Highlights



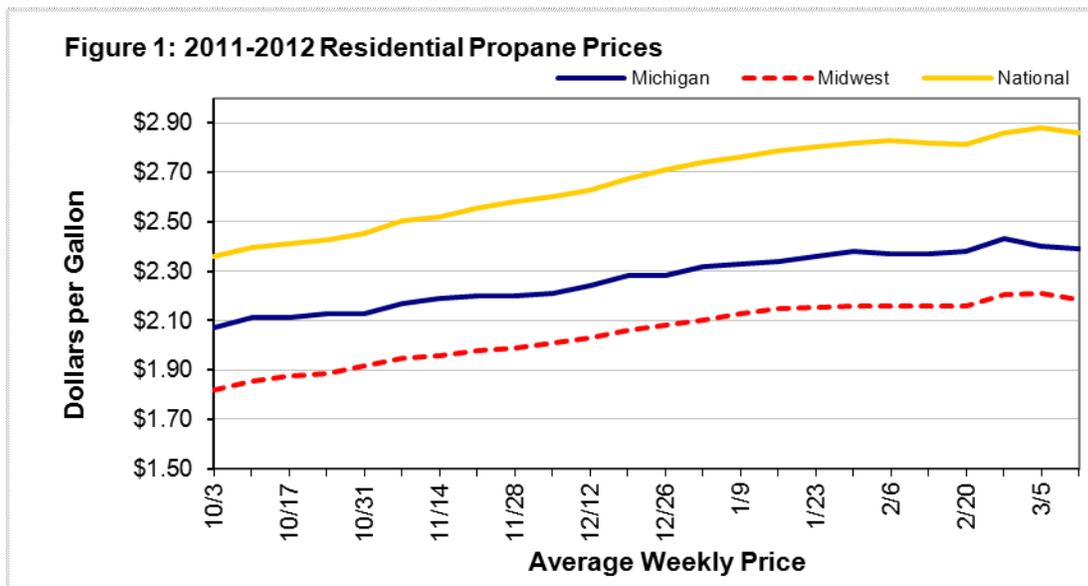
- Michigan’s “Heating Season” was uncharacteristically warm this winter, 20 % above normal.
- Political unrest in North Africa and Middle East disrupted supply, placing upward pressure on crude prices.
- Increased domestic production of crude oil and petroleum helped stabilize prices and bolster inventories.
- Heating Oil prices averaged 16% higher than 2010/11 winter season.
- Propane prices averaged nearly 8.8% higher than 2010/11 winter season.
- Propane stocks ended the season (March 30, 2012) 59% above the 5-year average for that period.



Residential Propane Prices

The price of propane is closely tied to the price of crude oil and natural gas. Colder-than-normal weather can also put extra pressure on propane prices during the high-demand winter season since there are no readily available sources of increased supply except for imports. According to the EIA, about 6 percent of U.S. households heat with propane. In Michigan it is estimated to be closer to 9 percent, more than any other state in the country.

As seen in Figure 1, Michigan propane prices were below the trend of national prices throughout the entire heating season. However, Michigan propane prices were above the average price when compared to the Midwest average prices.



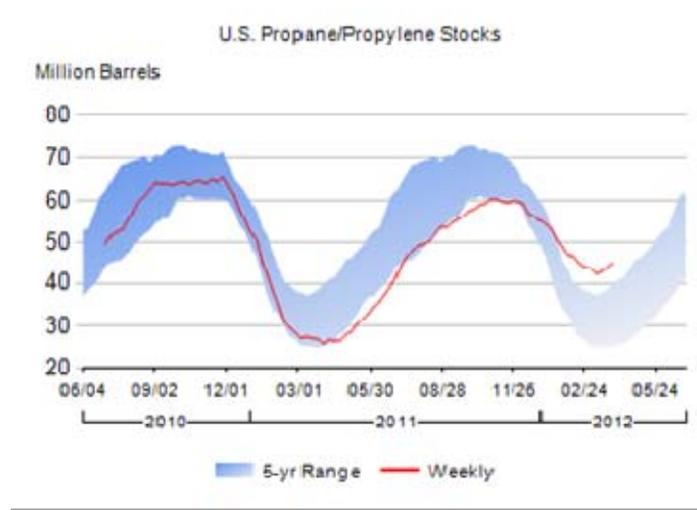
At the start of the 2011-2012 heating season, the weighted average residential price of propane in Michigan was \$2.41 per gallon, excluding the 4 percent state sales tax. As seen in the graph above, prices followed a graduate trajectory reaching a high of \$2.50 on February 20, 2012. The average price of propane over the October to March Survey period was \$2.47 per gallon in Michigan. This is an 8.8 percent increase from the survey period in 2010-2011.

2011	10/03	10/10	10/17	10/24	10/31	11/07	11/14	11/21	11/28	12/05	12/12	12/19	12/26
Michigan	2.41	2.40	2.42	2.40	2.45	2.43	2.44	2.46	2.47	2.47	2.47	2.48	2.49
Midwest	2.146	2.159	2.187	2.192	2.206	2.203	2.216	2.231	2.235	2.232	2.231	2.231	2.225
National	3.692	3.682	3.768	3.798	3.85	3.877	3.942	3.935	3.896	3.894	3.866	3.823	3.832
2012	01/02	01/09	01/16	01/23	01/30	02/06	02/13	02/20	02/27	03/05	03/12	3/19	N/A
Michigan	2.49	2.49	2.49	2.49	2.50	2.48	2.48	2.50	2.48	2.49	2.49	2.47	N/A
Midwest	2.226	2.217	2.211	2.211	2.204	2.198	2.197	2.192	2.191	2.191	2.185	N/A	N/A
National	3.843	3.935	3.952	3.937	3.952	3.972	4.032	4.044	4.108	4.1	4.105	N/A	N/A



As shown in Figure 2, the heating season began with U.S. propane stocks below the average range. According to EIA, the Nation’s total inventory of propane was approximately 71 million barrels at the beginning of the heating season in October 2011, nearly 7 million barrels below propane stocks one year earlier. U.S. propane stocks began a steady decline near the beginning of November, dropping to approximately 62 million barrels by the end of 2011 and continued to fall until the end of February. Due to a warmer than normal winter, propane stocks ended the season at 44.8 million barrels on March 30, 2012, 59% above the 5-year average for that period.

Figure 2: U.S. Propane Stocks



Source: EIA - Weekly Petroleum Status Report

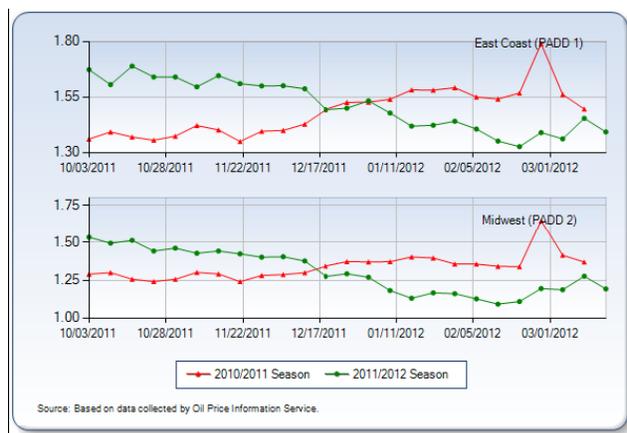
Figures 3 and 4 compare the path of residential and wholesale propane prices over the previous two heating seasons in the Midwest and East Coast. For 2011-2012 Midwest residential prices started significantly higher than the previous season but by February the average prices for both heating seasons began to converge. On average, residential propane prices in the Midwest were approximately \$0.50 per gallon lower than prices in the East Coast during the winter heating season 2011-2012.

Figure 3: Residential Propane Prices by PADD



Source: Based on data collected by State Energy Offices.

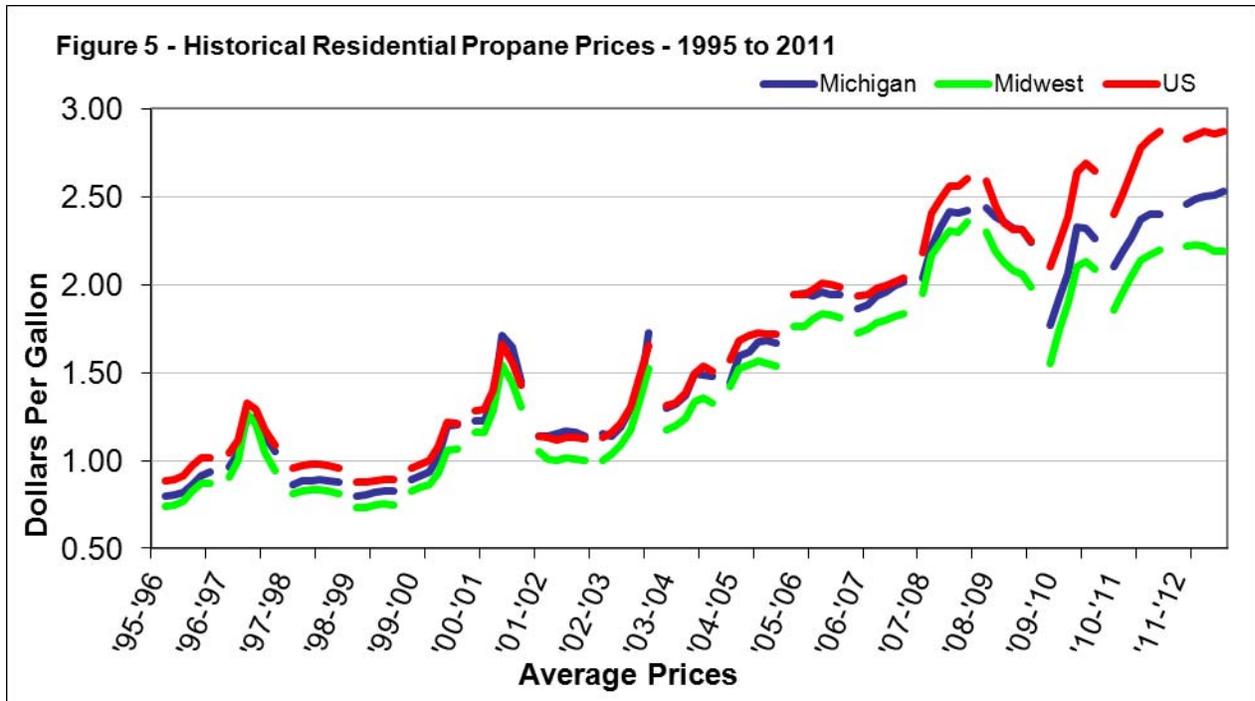
Figure 4: Wholesale Propane Prices by PADD



Source: Based on data collected by Oil Price Information Service.



Figure 5 shows the pattern of monthly average propane prices over the previous eleven heating seasons. Prices in Michigan and the Midwest region have gradually diverged from the U.S. average due to the availability of less expensive West Texas Intermediate (WTI) crude, sourced from Canada and the Bakken formation in North Dakota. Transportation bottlenecks have prevented this crude from reaching refineries in other regions of the country where more expensive Brent crude is imported at a cost premium. This disparity has become more pronounced with increasing tensions in the Middle East and speculative fears of supply shortages.

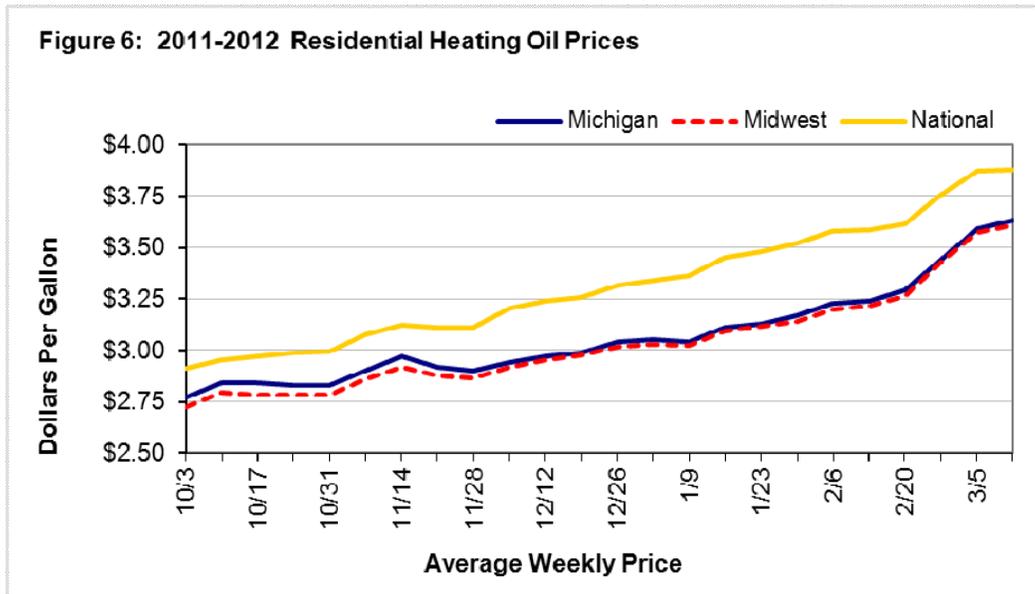




Residential No. 2 Heating Oil Prices

Heating oil is a petroleum product, much like diesel fuel, used by many people to heat their homes, especially in the North East. In Michigan, heating oil usage has gradually been supplanted by natural gas and propane, and now represents less than 5 percent of the heating fuels market in Michigan. While heating oil and diesel fuel are closely related products, heating oil is not subject to the low sulfur requirements placed on diesel fuel. Historically, heating oil prices have fluctuated a bit, often tracking the path of crude oil and are generally higher during the winter months when demand is higher.

As shown in Figure 6, heating oil prices in Michigan were roughly equivalent to those found throughout the Midwest. Nationally, average prices were significantly higher than in Michigan.



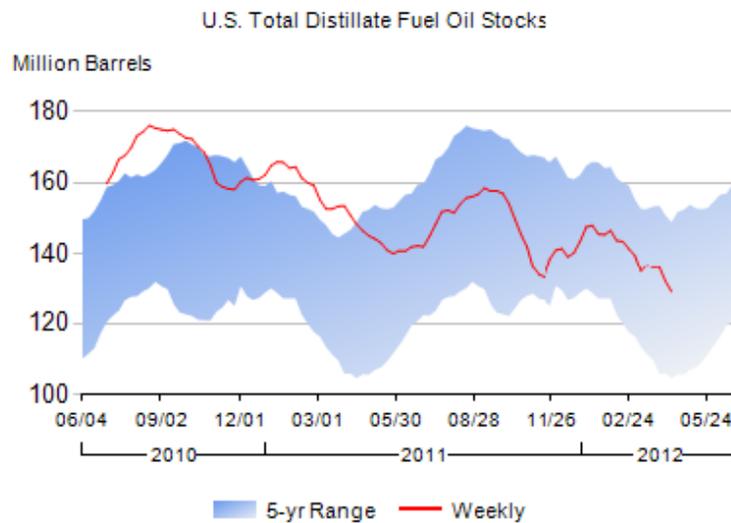
The price for heating oil for the 2011-2012 Michigan winter heating season started at \$3.47 per gallon, excluding the 4 percent sales tax. Prices in Michigan, the Midwest, and the nation fluctuated but steadily increased by mid-2012. By the end of the heating season on March 19, 2012, Michigan’s average price was \$3.75 per gallon. The average price of heating oil in Michigan over the course of the season was \$3.56 per gallon, 16% above last season.

2011	10/03	10/10	10/17	10/24	10/31	11/07	11/14	11/21	11/28	12/05	12/12	12/19	12/26
Michigan	3.47	3.43	3.51	3.61	3.65	3.70	3.83	3.76	3.69	3.59	3.47	3.41	3.37
Midwest	2.146	2.159	2.187	2.192	2.206	2.203	2.216	2.231	2.235	2.232	2.231	2.231	2.225
National	3.692	3.682	3.768	3.798	3.85	3.877	3.942	3.935	3.896	3.894	3.866	3.823	3.832
2012	01/02	01/09	01/16	01/23	01/30	02/06	02/13	02/20	02/27	03/05	03/12	3/19	N/A
Michigan	3.35	3.48	3.48	3.40	3.48	3.51	3.53	3.52	3.59	3.72	3.74	3.75	N/A
Midwest	2.226	2.217	2.211	2.211	2.204	2.198	2.197	2.192	2.191	2.191	2.185	N/A	N/A
National	3.843	3.935	3.952	3.937	3.952	3.972	4.032	4.044	4.108	4.1	4.105	N/A	N/A



Figure 7 shows distillate inventory levels throughout the heating season. Total distillate stocks were in the middle of the 5-year range at the beginning of the 2011-2012 heating season. It then had a quick drop at the end of October 2011 reaching a low of 130 million barrels. Beginning in December, stock levels began to increase slightly, maintaining a level consistent with the 5-year average. This inventory level contradicts what might typically be seen in such a mild heating season, but can be understood by recognizing the growing demand for distillate production from increased industrial activity and a fast developing distillate export market.

Figure 7: U.S. Distillate Fuel Oil Stocks



Source: EIA - Weekly Petroleum Status Report

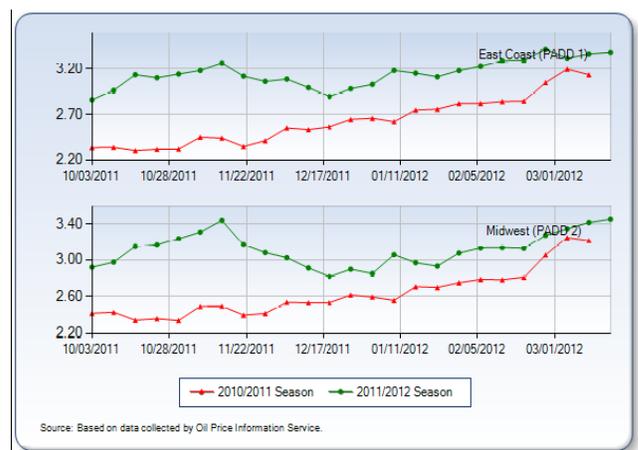
Figures 8 and 9 provide a comparison of residential and wholesale heating oil prices over the 2010-2011 and 2011-2012 heating seasons for the East Coast and Midwest regions. Residential heating oil prices during the 2010-2011 season steadily increased for both the East Coast and Midwest region.

Figure 8: Residential Heating Oil Prices by PADD



Source: Based on data collected by State Energy Offices.

Figure 9: Wholesale Heating Oil Prices by PADD



Source: Based on data collected by Oil Price Information Service.



Weather Summary

Figure 10 depicts the statewide temperature rankings for the United States from October 2011 – March 2012. Figure 11 shows the population weighted heating degree days for Michigan over the last 5 years. Temperatures in the U.S. for the winter of 2011-2012 were well above their 30-year averages (1971-2000) in the majority of the nation, and record setting in much of the Midwestern and northeastern states. In Michigan, this past winter heating season (Oct - March) was approximately 20 percent warmer than normal.

Figure 10: U.S. Temperature Ranks

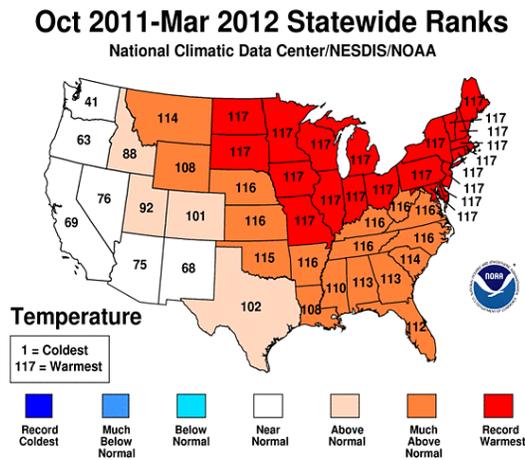
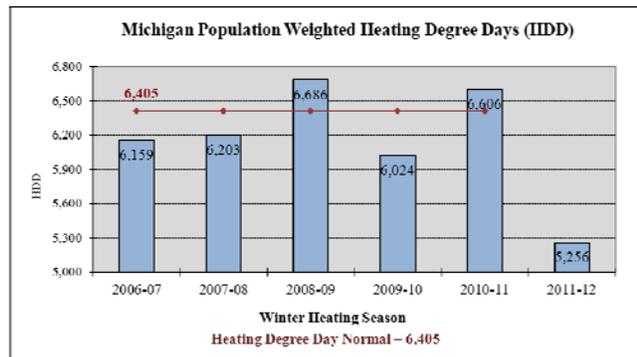


Figure 11: 2005-2011 Michigan Heating Degree Days



Note: This chart has been revised to reflect only HDDs occurring during the Michigan winter heating season (October-March), as opposed to HDD totals for the entire year, to provide a more accurate picture of winter heating demand



Methodology

The EIA provided the MPSC with a list of survey participants. The sampling frame for heating oil distributors was an established list of approximately 11,000 fuel oil dealers and distributors from Form EIA-863, "Petroleum Product Sales Survey" (1989). EIA officials used a one-way stratified sample design for Michigan based on No. 2 residential distillate sales volumes. Due to limited propane supplier information, EIA statisticians developed two strata for propane dealers – large, multi-state dealers comprised the first, and a random sampling comprised the second (many sources were used to collect the names and addresses for the random sampling). EIA officials selected 21 fuel oil distributors and 27 propane dealers to participate in the 2011-2012 survey for Michigan. Appendix Six contains detailed information on the sample design.

Survey Dates -- The MPSC conducted the survey weekly on each Monday. The specific survey dates in 2011 were October 3, 10, 17, and 24; November 07, 14, 21 and 28; December 05, 12, 19, and 26. Survey dates in 2012 were January 2, 9, 16, 23 and 30; February 6, 13, 20, and 27; March 5 and 12.

General Reporting -- The MPSC asked participants for the retail credit price charged to residential customers and verified changes from the reported price from the preceding survey. The No. 2 fuel oil residential price and the propane residential price are the credit prices paid for home delivery of 500 gallons. Reported prices excluded discounts and taxes. Participants reported prices to the nearest tenth of a cent (i.e., 0.895). The survey excluded sales to multi-family dwellings.

Electronic Filing -- EIA provided the MPSC with an electronic filing web form known as the EIA Survey Data Collection System. After collecting the data, MPSC staff uploaded it directly to EIA via a network connection to the Internet. Participants are listed alphabetically, identified by a seven-digit number, and prices are reported in dollars per gallon (i.e., \$1.395).

Distribution of Aggregated Data -- After collecting the data, EIA officials edited and aggregated the information with surveys from the other states. The EIA published the survey results on their Web site at <http://eia.doe.gov/>. For more information, visit this page or contact National Energy Information Center at (202) 586-8800.

Confidentiality of Reported Data -- Survey participation by fuel distributors is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). The EIA is responsible for assuring confidentiality of the data. Data on this form will be kept confidential and not disclosed to the public to the extent it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. Section 552, and other regulations. It may be released to the Department of Justice or to any other federal agency for official use, which may include enforcement of federal law. The information contained on this form may also be made available to any committee of Congress, the General Accounting Office, or other Congressional agencies authorized by law. A court of competent jurisdiction may obtain this information in response to an order.



Sources:

- 1)** Residential Heating Oil Prices by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*,
http://www.eia.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/current/pdf/taled1.pdf

- 2)** Wholesale Heating Oil Prices by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*,
http://www.eia.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/current/pdf/taled2.pdf

- 3)** Residential Propane by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*,
http://www.eia.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/current/pdf/taled3.pdf

- 4)** Wholesale Propane Prices by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*,
http://www.eia.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/current/pdf/taled4.pdf

- 5)** Winter Fuels Explanatory Notes, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*,
http://www.eia.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/current/pdf/appendixd.pdf