

**Michigan Public Service Commission
Department of Licensing and Regulatory Affairs**

**Michigan Residential Heating Oil and Propane Price Survey
2010-2011 Heating Season**



**Final Report
May 2011**

Prepared by Energy Data and Security Section, Management Services Division

This report was prepared by Kandace Hansen and Alex Morese for distribution to MPSC and DOE officials and survey participants. Please direct any questions about the survey to Alex Morese, Energy Data and Security Section, Management Services Division, Michigan Public Service Commission, P.O. Box 30221, Lansing, Michigan 48909, or by telephone at (517) 241-0292.

Printed under authority of MCL 10.82 and 460.901.

Total number of copies printed: 60

**Michigan Public Service Commission
Department of Licensing and Regulatory Affairs**

**Michigan Residential Heating Oil and Propane Price Survey
2010-2011 Heating Season**



Final Report
May 2011

Prepared by Energy Data and Security Section, Management Services Division

Michigan Residential No. 2 Fuel Oil and Propane Price Survey 2010-2011 Heating Season

Introduction

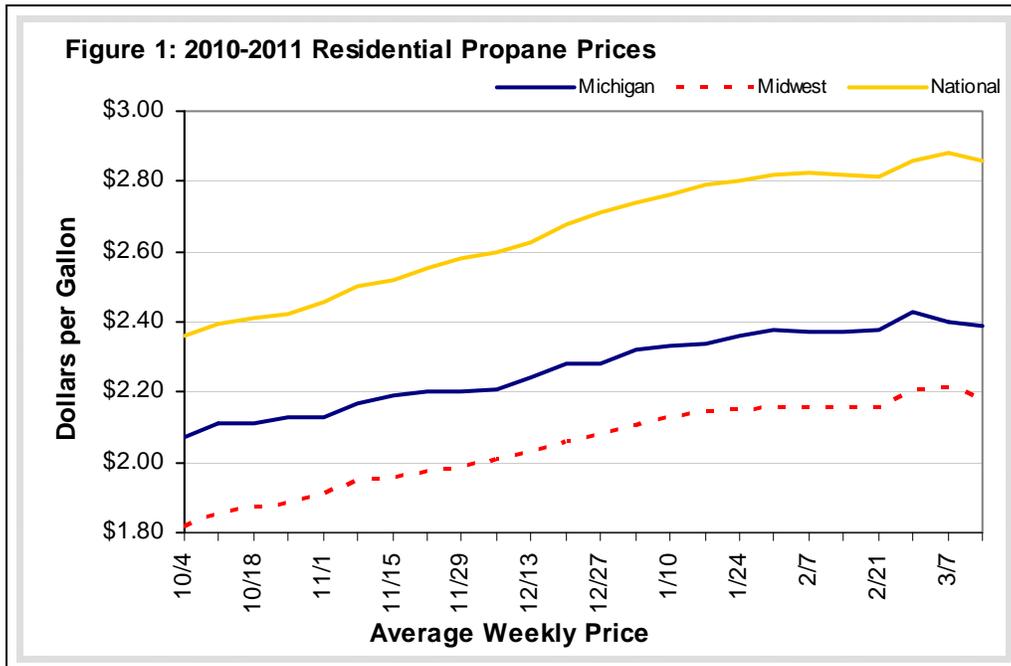
This report summarizes the results of a survey of residential No. 2 distillate fuel oil (home heating oil) and propane (liquefied petroleum gas (LPG) prices over the 2010-2011 heating season in Michigan. The Michigan Public Service Commission (MPSC) conducted the survey under a cooperative agreement 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.

From September 2010 through March 2011, the MPSC conducted weekly telephone surveys of forty-seven distributors to obtain current residential retail home heating oil and propane prices. The MPSC transmitted the data to the EIA, using the EIA Data Collection System. Survey results were published on the MPSC website at <http://www.dleg.state.mi.us/mpsc/reports/shopp/>. This page was updated weekly with Michigan average residential prices immediately following transmission of the data to EIA. The EIA constructed the survey using a sample of Michigan home heating oil and propane retailers. The sample takes into account dealer sales volumes, geographic location, and sources of primary supply. The sample design allows EIA to compile weighted average state and national heating oil and propane prices.

Twenty-three states participated in the survey. Michigan has participated in the program since it began in 1979. The other participating Midwest states are Indiana, Iowa, Kentucky, Minnesota, Ohio, and Wisconsin. The data was also accessible from September 2010 through March 2011 on the EIA Website at <http://eia.doe.gov/> under the "Weekly Petroleum Status Report" section. Contact the National Energy Information Center in Washington, D.C., (202) 586-8800, for more information.

Residential Propane Prices

At the start of the 2010-2011 heating season, the weighted average residential price of propane in Michigan was \$2.07 per gallon, excluding the 4 percent state sales tax. This is \$0.32 per gallon higher than the average price at the start of the previous heating season. As can be seen in the following graph, prices fluctuated but ultimately increased from the beginning of the heating season reaching a high of \$2.43 on February 28, 2011, a 17 percent increase. The average price of propane over the October to March survey period was \$2.27 per gallon in Michigan. This is a \$0.21 per gallon increase from the survey period in 2009-2010.

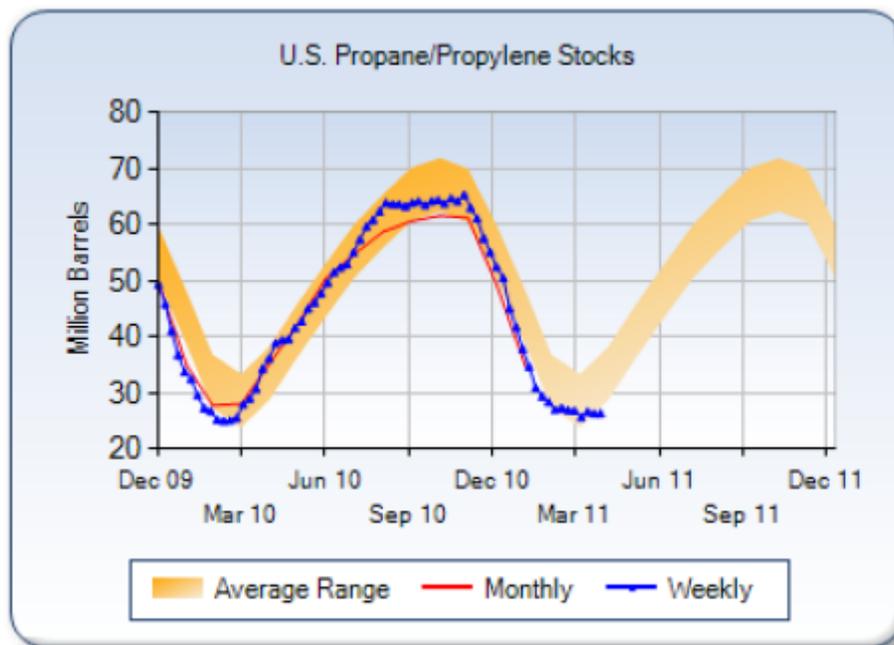


2010	10/04	10/11	10/18	10/25	11/01	11/08	11/15	11/22	11/29	12/06	12/13	12/20	12/27
Michigan	2.07	2.11	2.11	2.13	2.13	2.17	2.19	2.20	2.20	2.21	2.24	2.28	2.28
Midwest	1.82	1.86	1.88	1.89	1.92	1.95	1.96	1.98	1.99	2.01	2.03	2.06	2.08
National	2.36	2.39	2.41	2.43	2.45	2.50	2.52	2.55	2.58	2.60	2.63	2.68	2.71
2011	01/03	01/10	01/17	01/24	01/31	02/07	02/14	02/21	02/28	03/07	03/14	03/21	03/28
Michigan	2.32	2.33	2.34	2.36	2.38	2.37	2.37	2.38	2.43	2.40	2.39	N/A	N/A
Midwest	2.10	2.13	2.15	2.15	2.16	2.16	2.16	2.16	2.21	2.21	2.18	N/A	N/A
National	2.74	2.76	2.79	2.80	2.82	2.83	2.82	2.82	2.86	2.89	2.86	N/A	N/A

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.

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 64 million barrels at the beginning of the heating season in October 2010, nearly 9 million barrels below propane stocks one year earlier. U.S. propane stocks began a steady decline after November, dropping to 53 million barrels by the end of 2010. In 2011 propane stocks continued to decline and as of April 22, 2011 stocks stood at 26 million barrels.

Figure 2: U.S. Propane Stocks



Source: Energy Information Administration/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 2010-2011 Midwest residential prices started significantly higher than the previous season but by January 10, 2011 the average prices for both heating seasons began to converge. On average, residential propane prices in the Midwest were \$0.90 per gallon lower than prices in the East Coast during the winter heating season 2010-2011.

Figure 3: Residential Propane Prices by PADD



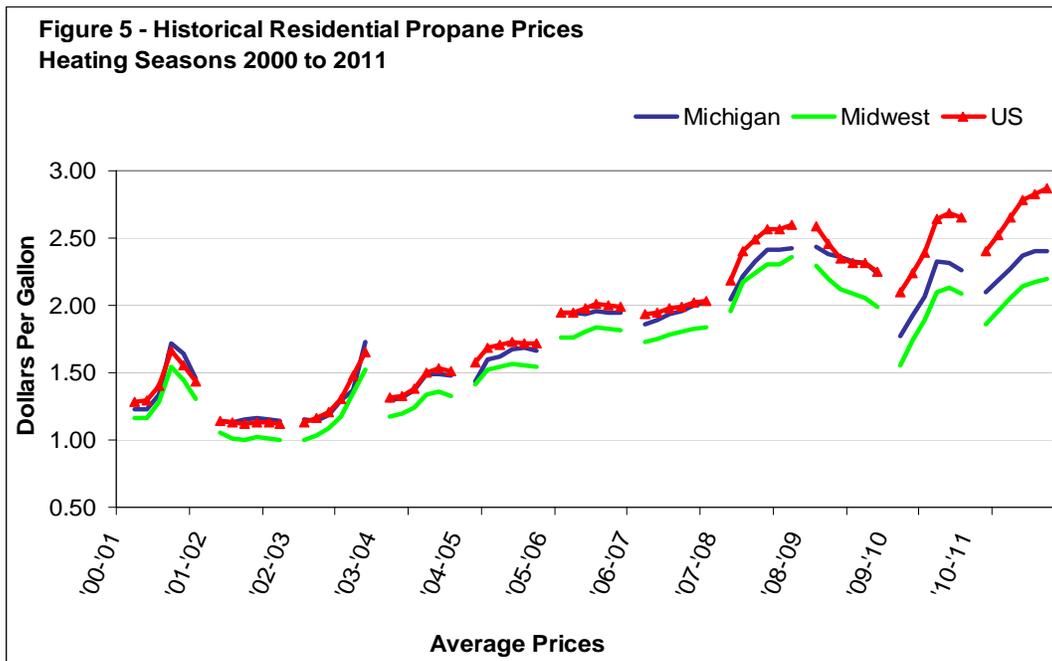
Source: Based on data collected by Oil Price Information Service.
 PADD I: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.
 PADD II: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Oklahoma, Tennessee, and Wisconsin.

The average wholesale price for propane on the East Coast was generally higher than in the Midwest by an average of \$0.14 over the course of most of the heating season. Overall, the wholesale prices for the East Coast and the Midwest increased, reaching highs of \$1.79 and \$1.65, respectively, by February 28, 2011. Compared to the 2009-2010 heating season, the East Coast had a high of \$1.65 and the Midwest high price was at \$1.53.

Figure 4: Wholesale Propane Prices by PADD

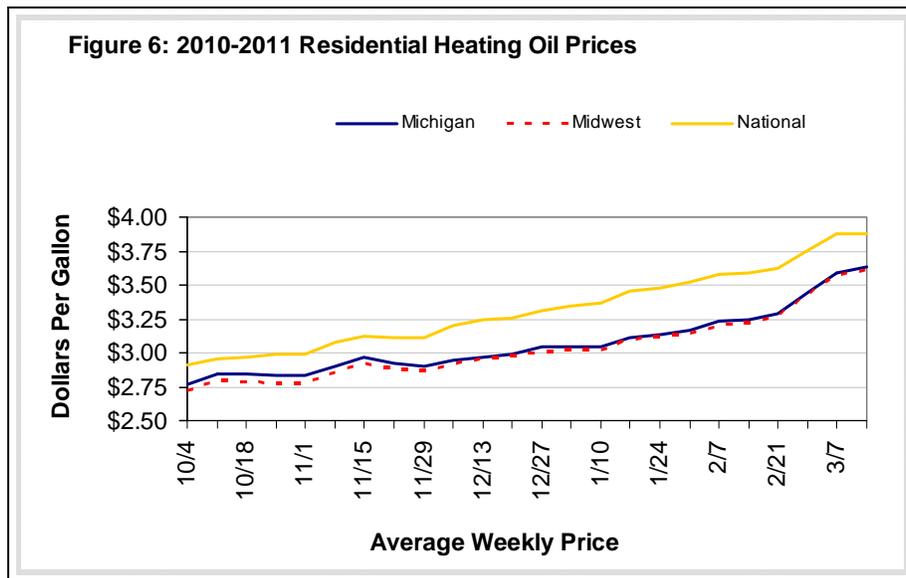


Figure 5 shows the pattern of monthly average propane prices over the previous eleven heating seasons.



Residential No. 2 Heating Oil Prices

The price for heating oil for the 2010-2011 Michigan winter heating season started at \$2.77 per gallon, excluding the 4 percent sales tax. This is \$0.45 more per gallon than at the start of the previous heating season. Prices in Michigan, the Midwest, and the nation fluctuated but steadily increased in 2010. By the end of the heating season on March 14, 2011, Michigan’s average price was \$3.63 per gallon, which is \$0.86 per gallon higher than it had been when the season began, a 31% increase. The average price of heating oil in Michigan over the course of the season was \$3.07 per gallon, which was \$0.52 higher than the average price of heating oil during the 2009-2010 heating season.

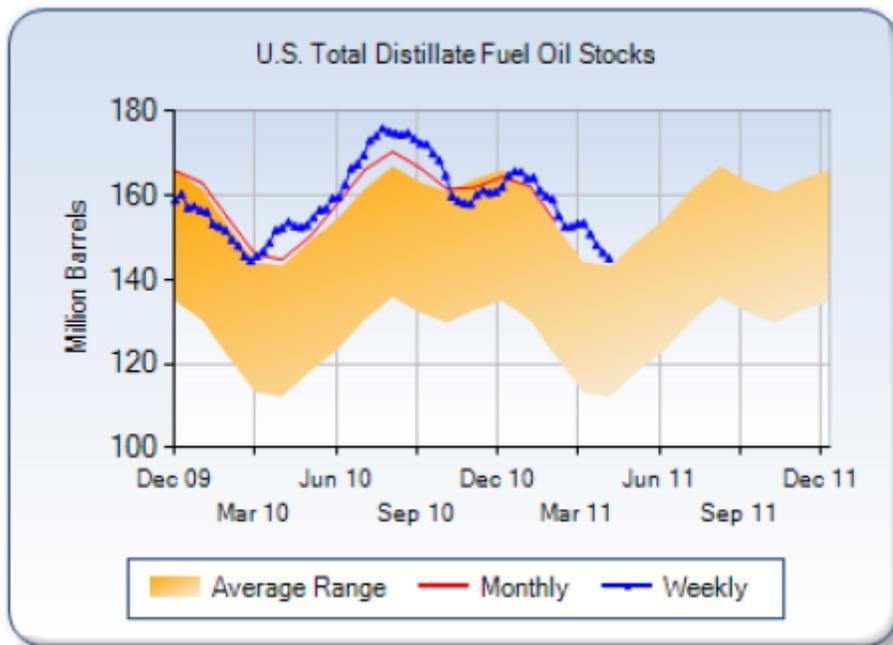


2010	10/04	10/11	10/18	10/25	11/01	11/08	11/15	11/22	11/29	12/06	12/13	12/20	12/27
Michigan	2.77	2.84	2.84	2.83	2.83	2.90	2.97	2.92	2.90	2.94	2.97	2.99	3.04
Midwest	2.72	2.80	2.79	2.78	2.78	2.86	2.92	2.88	2.86	2.92	2.96	2.98	3.02
National	2.91	2.95	2.97	2.99	2.99	3.08	3.13	3.11	3.11	3.20	3.24	3.26	3.31
2011	01/03	01/10	01/17	01/24	01/31	02/07	02/14	02/21	02/28	03/07	03/14	03/21	03/28
Michigan	3.05	3.04	3.11	3.13	3.17	3.23	3.24	3.29	3.44	3.59	3.63	N/A	N/A
Midwest	3.03	3.02	3.01	3.12	3.14	3.20	3.22	3.26	3.43	3.57	3.61	N/A	N/A
National	3.34	3.36	3.45	3.48	3.52	3.58	3.59	3.62	3.76	3.87	3.88	N/A	N/A

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. During the 2009-2010 season heating oil prices in several states along the East Coast reached \$3.79 per gallon in February, \$0.51 cents higher than the Midwest average for the month of February.

Figure 7 shows distillate inventory levels throughout the heating season. Total distillate stocks were above the average range at the beginning of the heating season and then began to decrease on October 22, 2010, reaching a low of 158 million barrels in November 2010. Beginning in December, stock levels began to increase slightly, reaching a high of 166 million barrels by January 14, 2011. However, as of April 22, 2011 stocks have decreased to 147 million barrels. Even so, distillate stocks are still well above normal levels for this time of year.

Figure 7: U.S. Distillate Fuel Oil Stocks



Source: Energy Information Administration/Weekly Petroleum Status Report

According to the EIA, Domestic crude oil production increased by 150,000 bbl/d in 2010 to 5.51 million bbl/d ([U.S. Crude Oil Production Chart](#)). Due in part to Hurricanes Ike and Gustav, average production dipped below 5.0 million barrels per day (bbl/d) in 2008, then climbed to 5.4 million bbl/d in 2009 and 5.5 million bbl/d in 2010, with 2010 volumes representing an 11 percent increase over 2008. While much of the increase in 2009 was associated with deepwater developments in the Gulf of Mexico Federal Offshore, the increase in 2010 was driven primarily by escalating horizontal drilling programs at the Bakken and other U.S. shale formations.

West Texas Intermediate (WTI) crude oil spot prices averaged \$89 per barrel in February and \$103 per barrel in March. The WTI price has continued to rise in recent days, reaching \$112 on April 8. Crude oil prices are currently at their highest level since 2008. EIA expects oil markets to continue to tighten over the next two years given expected robust growth in world oil demand and slow growth in supply from non-Organization of the Petroleum Exporting Countries (non-OPEC) countries. Projected WTI prices average \$106 in 2011 and \$114 per barrel in 2012, increases of \$5 per barrel and \$9 per barrel, respectively.

Figures 8 and 9 provide a comparison of residential and wholesale heating oil prices over the 2009-2010 and 2010-2011 heating seasons for the East Coast and Midwest regions. Residential heating oil prices remained relatively constant with a few large fluctuations during the 2009-2010 heating season. In contrast, during the 2010-2011 season prices steadily increased for both the East Coast and Midwest region.

Figure 8: Residential Heating Oil Prices by PADD



Figure 9: Wholesale Heating Oil Prices by PADD



Weather Summary

Figure 10 depicts the statewide temperature rankings for the United States from October 2010 – March 2011. Figure 11 shows the population weighted heating degree days for Michigan over the last 7 years. Temperatures in the U.S. for the winter of 2010-2011 were close to their 30-year average (1971-2000) nationwide, but warmer than normal in the western and central states and colder than normal in the southern states. In Michigan, this past winter was approximately 3 percent colder than normal.

Figure 10: U.S. Temperature Ranks

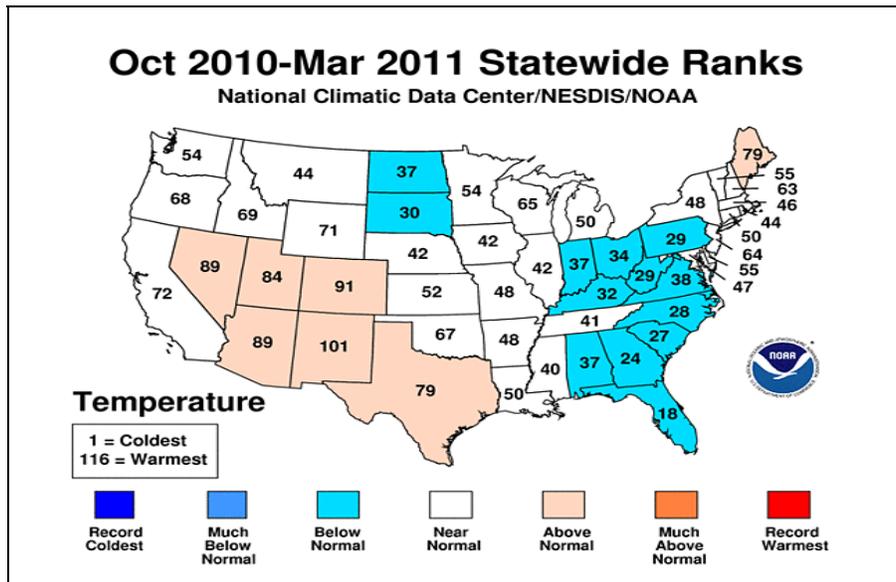
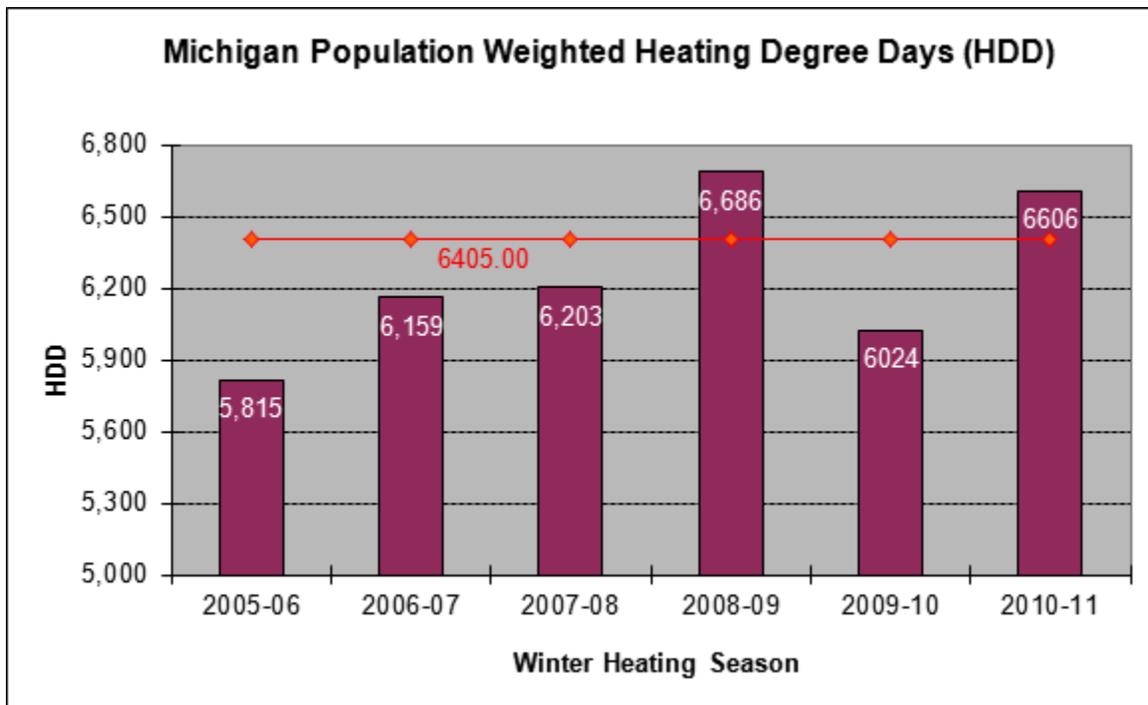


Figure 11: 2005-2011 Michigan Heating Degree Days



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 2010-2011 survey for Michigan. One of the retailers participated in both the fuel oil and the propane surveys. 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 2010 were October 4, 11, 18, and 25; November 1, 8, 15, 22 and 29; December 6, 13, 20, and 27. Survey dates in 2011 were January 3, 10, 17, 24 and 31; February 7, 14, 21, and 28; March 7 and 14.

General Reporting -- The MPSC asked participants for the retail cash 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 cash 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 apartment buildings or other 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.

Appendices

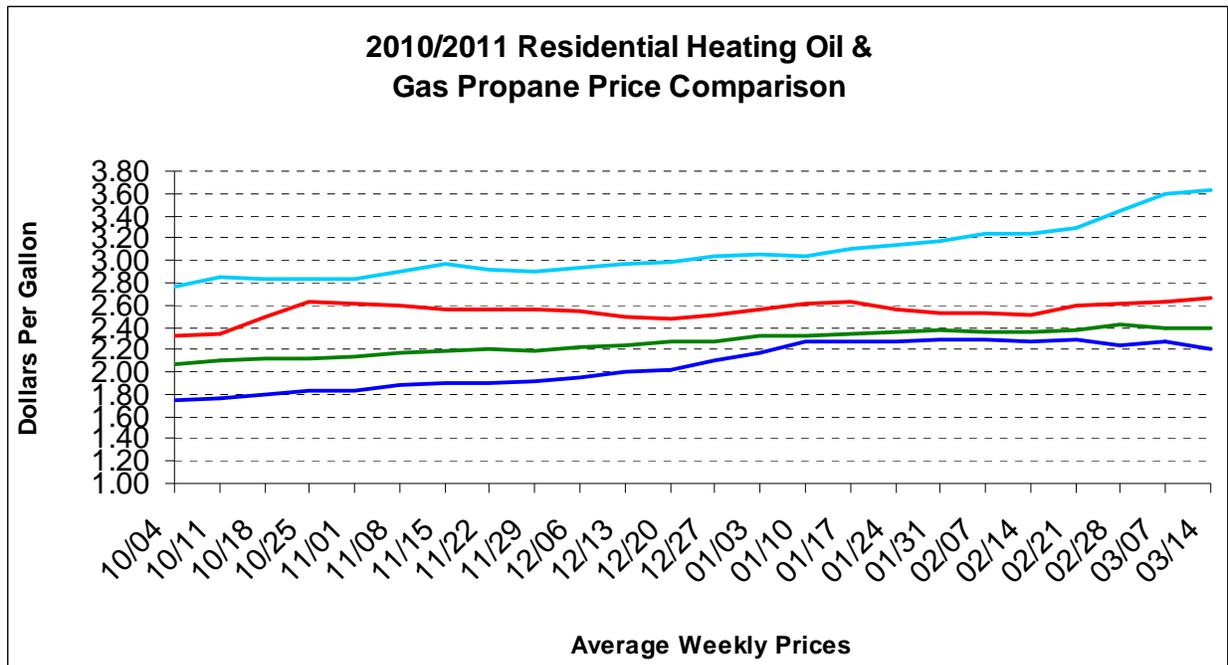
- Appendix One** - State Heating Oil and Propane Program (SHOPP) Web page on the MPSC Web site at: <http://www.dleg.state.mi.us/mpsc/reports/shopp/>.
- Appendix Two** - Residential Heating Oil Prices by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*, May 2, 2011, p. 43
- Appendix Three** - Wholesale Heating Oil Prices by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*, May 2, 2011, p. 44
- Appendix Four** - Residential Propane by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*, May 2, 2011, p. 46
- Appendix Five** - Wholesale Propane Prices by Region and State, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*, May 2, 2011, p. 47
- Appendix Six** - Winter Fuels Explanatory Notes, DOE/EIA-0208 (2008-15), *Weekly Petroleum Status Report*, May 2, 2011, p. 49-50

Appendix One

**Michigan Residential Heating Oil and Propane Prices
Winter Heating season 2010/2011
(October through March)**

We do not collect pricing information during the summer months

These average prices are based on a weekly phone survey of 48 heating oil and propane distributors serving Michigan residential consumers. The survey is conducted by the staff of the Michigan Public Service Commission in cooperation with the Energy Information Administration.



Prices are given in Dollars Per Gallon Excluding Taxes.		
R=Revised		
The average residential prices for the week of:		
Date	Heating Oil	Propane
Mar. 14, 2011	\$3.63	\$2.39
Mar. 07, 2011	\$3.59	\$2.40
Feb. 28, 2011	\$3.44	\$2.43
Feb. 21, 2011	\$3.29	\$2.38
Feb. 14, 2011	\$3.24	\$2.37
Feb. 07, 2011	\$3.23	\$2.37
Jan. 31, 2011	\$3.17	\$2.38

Jan. 24, 2011	\$3.13	\$2.36
Jan. 17, 2011	\$3.11	\$2.34
Jan. 10, 2011	\$3.04	\$2.33
Jan. 03, 2011	\$3.05	\$2.32
Dec. 27, 2010	\$3.04	\$2.28
Dec. 20, 2010	\$2.99	\$2.28
Dec. 13, 2010	\$2.97	\$2.24
Dec. 06, 2010	\$2.94	\$2.21
Nov. 29, 2010	\$2.90	\$2.20
Nov. 22, 2010	\$2.92	\$2.20
Nov. 15, 2010	\$2.97	\$2.19
Nov. 08, 2010	\$2.90	\$2.17
Nov. 01, 2010	\$2.83	\$2.13
Oct. 25, 2010	\$2.83	\$2.13
Oct. 18, 2010	\$2.84	\$2.11
Oct. 11, 2010	\$2.84	\$2.11
Oct. 04, 2010	\$2.77	\$2.07

Other Links of Interest

- [Michigan Residential Heating Oil and Propane Price Survey 2009-2010](#)
- [What Consumers Should Know: More Information about Residential Heating Oil Prices](#)
- [What Consumers Should Know: More Information About Propane](#)
- [Michigan Residential Space Heating Fuels Usage](#)
- [Michigan Historical Residential Heating Oil and Propane Prices](#)
- [Residential Heating Oil Prices by Region and State \(Winter Only\) !\[\]\(a925f71823333ffbd7f784b7c54f278c_img.jpg\)](#)
- [Residential Propane Prices by Region and State \(Winter Only\) !\[\]\(f331bc07101fe39c80ef41c965b903b5_img.jpg\)](#)
- [U.S. Heating Oil and Propane Update](#)
- [Michigan Energy Appraisal - Winter](#)
- [EIA - Short Term Energy and Winter Fuels Outlook](#)

Please note: These are average prices. Heating oil and propane prices vary geographically across the state and among different suppliers. The prices paid by consumers can also depend on the level of usage and the pricing program they are participating in such as keep-full, will-call/cash, or other price protection programs. These prices are only updated during the winter months.

This report was produced by the Michigan Public Service Commission, Lansing, MI.

E-mail questions or comments to moresea@michigan.gov

Appendix Two

Table D1. Residential Heating Oil Prices by Region and State
(Dollars per Gallon)

Region/State	2009 - 2010 Heating Season Monthly					
	October	November	December	January	February	March
Average	2.598	2.744	2.766	2.929	2.868	2.916
East Coast (PADD 1)	2.615	2.762	2.789	2.956	2.895	2.941
New England (PADD 1A)	2.603	2.755	2.780	2.942	2.874	2.929
Central Atlantic (PADD 1B)	2.658	2.799	2.828	3.002	2.942	2.982
Lower Atlantic (PADD 1C)	2.418	2.568	2.586	2.741	2.726	2.755
Midwest (PADD 2)	2.379	2.510	2.471	2.584	2.532	2.604

Region/State	2010 - 2011 Heating Season Monthly					
	October	November	December	January	February	March
Average	2.955	3.084	3.255	3.431	3.634	3.875
East Coast (PADD 1)	2.970	3.100	3.277	3.458	3.661	3.896
New England (PADD 1A)	2.951	3.083	3.261	3.446	3.671	3.919
Central Atlantic (PADD 1B)	3.015	3.151	3.332	3.506	3.695	3.916
Lower Atlantic (PADD 1C)	2.794	2.879	3.037	3.219	3.387	3.617
Midwest (PADD 2)	2.771	2.860	2.967	3.081	3.276	3.591

Region/State	2010 - 2011 Heating Season Weekly											
	12/27	1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14
Average	3.314	3.339	3.362	3.450	3.478	3.523	3.577	3.587	3.617	3.755	3.873	3.878
East Coast (PADD 1)	3.337	3.363	3.389	3.477	3.506	3.553	3.606	3.615	3.644	3.780	3.896	3.895
New England (PADD 1A)	3.319	3.350	3.362	3.462	3.497	3.560	3.621	3.620	3.660	3.784	3.922	3.916
Connecticut	3.409	3.438	3.462	3.572	3.592	3.670	3.717	3.708	3.772	3.860	4.021	3.989
Maine	3.095	3.107	3.134	3.219	3.284	3.338	3.399	3.420	3.417	3.564	3.689	3.718
Massachusetts	3.376	3.414	3.401	3.501	3.534	3.590	3.657	3.663	3.696	3.834	3.962	3.962
New Hampshire	3.206	3.225	3.270	3.389	3.433	3.498	3.548	3.551	3.611	3.749	3.870	3.901
Rhode Island	3.311	3.336	3.341	3.405	3.446	3.502	3.587	3.560	3.571	3.734	3.852	3.837
Vermont	3.136	3.213	3.230	3.305	3.344	3.385	3.489	3.472	3.502	3.642	3.787	3.763
Central Atlantic (PADD 1B)	3.389	3.411	3.448	3.528	3.554	3.589	3.634	3.652	3.673	3.820	3.916	3.917
Delaware	3.251	3.300	3.283	3.392	3.390	3.439	3.482	3.494	3.518	3.636	3.708	3.719
Dist Columbia	3.774	3.792	3.840	3.905	3.948	3.958	4.043	4.061	4.050	4.114	4.209	4.229
Maryland	3.307	3.341	3.361	3.443	3.465	3.498	3.552	3.570	3.568	3.685	3.810	3.831
New Jersey	3.438	3.479	3.488	3.556	3.590	3.623	3.659	3.656	3.712	3.837	3.922	3.912
New York	3.489	3.510	3.562	3.638	3.667	3.702	3.748	3.764	3.791	3.951	4.021	4.025
Pennsylvania	3.227	3.236	3.271	3.358	3.378	3.414	3.460	3.491	3.493	3.641	3.776	3.773
Lower Atlantic (PADD 1C)	3.116	3.140	3.170	3.247	3.258	3.278	3.335	3.348	3.369	3.495	3.611	3.624
North Carolina	3.098	3.113	3.136	3.221	3.245	3.241	3.297	3.311	3.321	3.444	3.587	3.605
Virginia	3.123	3.151	3.184	3.258	3.264	3.293	3.351	3.363	3.389	3.517	3.620	3.631
Midwest (PADD 2)	3.016	3.027	3.020	3.096	3.118	3.142	3.199	3.218	3.263	3.425	3.574	3.609
Indiana	3.074	3.077	3.051	3.154	3.176	3.197	3.254	3.268	3.294	3.427	3.597	3.630
Iowa	2.917	2.922	2.931	2.987	3.012	3.034	3.076	3.092	3.119	3.306	3.433	3.506
Kentucky	2.927	2.953	2.952	2.976	3.037	3.040	3.092	3.132	3.144	3.345	3.494	3.521
Michigan	3.042	3.052	3.036	3.106	3.128	3.165	3.243	3.240	3.296	3.445	3.540	-
Minnesota	3.026	3.047	3.043	3.091	3.117	3.127	3.166	3.187	3.249	3.410	3.576	3.601
Nebraska	2.862	2.865	2.892	2.951	2.990	3.003	3.040	3.058	3.099	3.304	3.435	3.457
Ohio	3.021	3.030	3.021	3.119	3.137	3.165	3.225	3.257	3.310	3.482	3.642	3.657
Wisconsin	3.001	3.005	3.009	3.086	3.102	3.126	3.185	3.199	3.222	3.374	3.526	3.575

- = Data Not Available.

Source: Based on data collected by State Energy Offices.

Appendix Three

Table D2. Wholesale Heating Oil Prices by Region and State
(Dollars per Gallon)

Region/State	2009 - 2010 Heating Season Monthly					
	October	November	December	January	February	March
Average	2.013	2.057	2.049	2.171	2.037	2.165
East Coast (PADD 1)	2.003	2.053	2.049	2.181	2.036	2.158
New England (PADD 1A)	2.018	2.071	2.069	2.204	2.059	2.178
Central Atlantic (PADD 1B)	2.003	2.049	2.045	2.180	2.034	2.151
Lower Atlantic (PADD 1C)	1.950	2.006	1.992	2.101	1.958	2.115
Midwest (PADD 2)	2.059	2.075	2.048	2.118	2.042	2.198

Region/State	2010 - 2011 Heating Season Monthly					
	October	November	December	January	February	March
Average	2.335	2.400	2.569	2.709	2.882	3.177
East Coast (PADD 1)	2.325	2.394	2.573	2.720	2.888	3.165
New England (PADD 1A)	2.347	2.415	2.600	2.753	2.929	3.207
Central Atlantic (PADD 1B)	2.318	2.390	2.565	2.711	2.871	3.153
Lower Atlantic (PADD 1C)	2.279	2.341	2.513	2.640	2.824	3.069
Midwest (PADD 2)	2.385	2.426	2.553	2.660	2.856	3.234

Region/State	2010 - 2011 Heating Season Weekly											
	12/27	1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14
Average	2.639	2.646	2.609	2.740	2.747	2.805	2.813	2.829	2.839	3.049	3.205	3.148
East Coast (PADD 1)	2.645	2.658	2.620	2.747	2.757	2.817	2.819	2.839	2.845	3.048	3.196	3.134
New England (PADD 1A)	2.670	2.689	2.659	2.775	2.794	2.849	2.858	2.880	2.893	3.085	3.240	3.175
Connecticut	2.657	2.672	2.636	2.757	2.768	2.833	2.829	2.847	2.869	3.058	3.207	3.148
Maine	2.688	2.696	2.679	2.791	2.827	2.871	2.892	2.928	2.901	3.121	3.280	3.208
Massachusetts	2.670	2.697	2.670	2.780	2.797	2.855	2.866	2.890	2.915	3.093	3.249	3.187
New Hampshire	2.663	2.700	2.639	2.766	2.785	2.834	2.846	2.855	2.868	3.073	3.224	3.154
Rhode Island	2.653	2.670	2.628	2.757	2.771	2.822	2.834	2.834	2.850	3.056	3.211	3.141
Vermont	2.717	2.710	2.715	2.826	2.847	2.889	2.894	2.946	2.951	3.121	3.284	3.209
Central Atlantic (PADD 1B)	2.636	2.650	2.607	2.740	2.747	2.811	2.807	2.820	2.824	3.033	3.183	3.123
Delaware	2.779	2.781	2.730	-	-	-	-	-	2.793	2.999	3.219	-
Maryland	2.634	2.620	2.589	2.707	2.708	2.757	2.785	2.806	2.814	3.009	3.147	3.092
New Jersey	2.615	2.634	2.594	2.721	2.728	2.800	2.786	2.804	2.819	3.015	3.168	3.105
New York	2.668	2.677	2.628	2.776	2.785	2.840	2.847	2.849	2.855	3.077	3.228	3.170
Pennsylvania	2.613	2.637	2.594	2.725	2.734	2.804	2.789	2.806	2.798	3.009	3.152	3.094
Lower Atlantic (PADD 1C)	2.597	2.579	2.546	2.676	2.670	2.727	2.739	2.786	2.783	2.989	3.101	3.038
North Carolina	2.560	2.550	2.580	2.670	2.670	2.720	2.730	2.780	2.830	3.000	3.100	3.030
Virginia	2.621	2.598	2.524	2.680	2.670	2.732	2.744	2.790	2.752	2.982	3.101	3.043
Midwest (PADD 2)	2.614	2.593	2.556	2.706	2.697	2.748	2.784	2.780	2.808	3.054	3.250	3.218
Illinois	2.578	2.550	2.521	2.679	2.669	2.733	2.756	2.740	2.752	2.996	3.194	3.175
Indiana	2.581	2.554	2.538	2.688	2.672	2.736	2.773	2.764	2.780	3.015	3.216	3.190
Iowa	2.626	2.630	2.627	2.749	2.750	2.807	2.806	2.855	2.869	3.099	3.269	3.232
Kansas	2.576	2.584	2.588	2.704	2.699	2.762	2.756	2.810	2.830	3.048	3.215	3.173
Kentucky	2.656	2.615	2.602	2.754	2.745	2.780	2.809	2.818	2.846	3.085	3.251	3.201
Michigan	2.584	2.554	2.497	2.670	2.673	2.726	2.763	2.735	2.755	3.003	3.202	3.179
Minnesota	2.660	2.656	2.624	2.759	2.753	2.803	2.804	2.831	2.848	3.106	3.290	3.256
Missouri	2.596	2.588	2.570	2.731	2.714	2.777	2.787	2.805	2.821	3.043	3.238	3.194
Nebraska	2.627	2.626	2.632	2.750	2.751	2.807	2.808	2.862	2.864	3.099	3.267	3.225
North Dakota	2.710	2.692	2.662	2.784	2.778	2.826	2.853	2.873	2.885	3.140	3.322	3.286
Ohio	2.615	2.605	2.537	2.684	2.672	2.719	2.783	2.767	2.814	3.073	3.296	3.268
South Dakota	2.689	2.691	2.693	2.779	2.741	2.810	2.861	2.917	2.937	3.154	3.317	3.301
Wisconsin	2.602	2.582	2.531	2.689	2.691	2.742	2.771	2.738	2.759	3.015	3.223	3.196

- = Data Not Available.

Source: Based on terminal quotes collected by the Oil Price Information Service (OPIS).

Appendix Four

Table D3. Residential Propane Prices by Region and State
(Dollars per Gallon)

Region/State	2009 - 2010 Heating Season Monthly					
	October	November	December	January	February	March
Average	2.101	2.241	2.390	2.635	2.687	2.649
East Coast (PADD 1)	2.541	2.658	2.812	3.082	3.151	3.126
New England (PADD 1A)	2.566	2.659	2.788	3.007	3.091	3.085
Central Atlantic (PADD 1B)	2.625	2.759	2.944	3.230	3.298	3.268
Lower Atlantic (PADD 1C)	2.258	2.400	2.552	2.936	2.960	2.890
Midwest (PADD 2)	1.553	1.741	1.886	2.102	2.135	2.087

Region/State	2010 - 2011 Heating Season Monthly					
	October	November	December	January	February	March
Average	2.397	2.522	2.652	2.782	2.829	2.868
East Coast (PADD 1)	2.854	3.001	3.166	3.328	3.387	3.431
New England (PADD 1A)	2.849	3.008	3.169	3.354	3.420	3.458
Central Atlantic (PADD 1B)	2.948	3.091	3.257	3.406	3.466	3.521
Lower Atlantic (PADD 1C)	2.635	2.755	2.932	3.060	3.094	3.127
Midwest (PADD 2)	1.859	1.957	2.045	2.138	2.171	2.198

Region/State	2010 - 2011 Heating Season Weekly											
	12/27	1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14
Average	2.709	2.739	2.762	2.789	2.804	2.818	2.827	2.819	2.815	2.858	2.880	2.857
East Coast (PADD 1)	3.239	3.277	3.301	3.332	3.355	3.377	3.393	3.378	3.370	3.409	3.445	3.417
New England (PADD 1A)	3.242	3.280	3.308	3.359	3.394	3.428	3.449	3.404	3.397	3.431	3.466	3.450
Connecticut	2.992	2.953	3.003	3.008	3.057	3.108	3.120	3.131	3.147	3.175	3.218	3.214
Maine	2.970	2.994	3.023	3.049	3.082	3.094	3.133	3.124	3.133	3.156	3.222	3.220
Massachusetts	3.147	3.200	3.223	3.267	3.295	3.353	3.376	3.357	3.367	3.372	3.431	3.429
New Hampshire	3.334	3.427	3.453	3.504	3.533	3.567	3.593	3.553	3.536	3.552	3.553	3.528
Rhode Island	3.695	3.740	3.756	3.830	3.850	3.901	3.909	3.611	3.603	3.701	3.776	3.758
Vermont	3.315	3.367	3.390	3.491	3.543	3.545	3.564	3.647	3.595	3.630	3.596	3.552
Central Atlantic (PADD 1B)	3.328	3.374	3.398	3.409	3.417	3.432	3.448	3.471	3.453	3.490	3.543	3.498
Delaware	3.144	3.199	3.217	3.234	3.247	3.248	3.271	3.276	3.279	3.320	3.360	3.355
Maryland	3.264	3.282	3.321	3.332	3.359	3.390	3.395	3.411	3.417	3.439	3.486	3.497
New Jersey	3.883	3.966	4.000	3.971	3.952	3.966	3.959	4.021	3.897	3.923	4.020	3.893
New York	3.208	3.253	3.262	3.277	3.286	3.308	3.328	3.341	3.357	3.411	3.443	3.427
Pennsylvania	3.159	3.190	3.212	3.251	3.257	3.269	3.306	3.324	3.331	3.372	3.425	3.332
Lower Atlantic (PADD 1C)	3.010	3.028	3.041	3.062	3.088	3.084	3.085	3.071	3.080	3.143	3.140	3.114
North Carolina	2.955	2.995	3.005	3.062	3.077	3.074	3.066	3.066	3.079	3.127	3.106	3.076
Virginia	3.065	3.060	3.077	3.061	3.098	3.095	3.103	3.076	3.080	3.158	3.174	3.152
Midwest (PADD 2)	2.082	2.104	2.126	2.147	2.153	2.158	2.158	2.159	2.159	2.206	2.212	2.183
Indiana	2.535	2.561	2.571	2.583	2.604	2.605	2.620	2.623	2.619	2.636	2.654	2.523
Iowa	1.755	1.782	1.792	1.813	1.815	1.815	1.815	1.815	1.818	1.880	1.873	1.868
Kentucky	2.466	2.487	2.525	2.542	2.562	2.564	2.574	2.571	2.570	2.586	2.598	2.574
Michigan	2.322	2.348	2.355	2.365	2.381	2.392	2.384	2.385	2.394	2.452	2.411	2.393
Minnesota	1.964	1.983	2.000	2.026	2.031	2.034	2.036	2.041	2.029	2.092	2.128	2.117
Missouri	1.981	2.009	2.045	2.045	2.048	2.047	2.048	2.043	2.042	2.080	2.095	2.077
Nebraska	1.720	1.733	1.757	1.774	1.779	1.780	1.774	1.776	1.773	1.872	1.878	1.856
North Dakota	1.779	1.788	1.828	1.862	1.859	1.884	1.872	1.865	1.865	1.885	1.912	1.900
Ohio	2.637	2.662	2.687	2.742	2.720	2.719	2.723	2.736	2.744	2.774	2.747	2.745
South Dakota	1.809	1.830	1.845	1.874	1.886	1.891	1.888	1.891	1.898	1.942	1.959	1.943
Wisconsin	1.928	1.949	1.968	1.988	1.993	1.993	1.998	1.992	1.994	2.061	2.068	2.054

Source: Based on data collected by State Energy Offices.

Appendix Five

Table D4. Wholesale Propane Prices by Region and State
(Dollars per Gallon)

Region/State	2009 - 2010 Heating Season Monthly					
	October	November	December	January	February	March
Average	1.065	1.191	1.316	1.454	1.437	1.298
East Coast (PADD 1)	1.108	1.195	1.314	1.521	1.474	1.343
Central Atlantic (PADD 1B)	1.125	1.209	1.327	1.480	1.465	1.344
Lower Atlantic (PADD 1C)	1.081	1.173	1.293	1.586	1.488	1.342
Midwest (PADD 2)	1.047	1.189	1.317	1.426	1.423	1.279

Region/State	2010 - 2011 Heating Season Monthly					
	October	November	December	January	February	March
Average	1.300	1.305	1.363	1.432	1.476	1.429
East Coast (PADD 1)	1.370	1.389	1.462	1.564	1.613	1.528
Central Atlantic (PADD 1B)	1.373	1.399	1.464	1.557	1.643	1.547
Lower Atlantic (PADD 1C)	1.365	1.370	1.455	1.576	1.566	1.493
Midwest (PADD 2)	1.272	1.274	1.326	1.380	1.422	1.392

Region/State	2010 - 2011 Heating Season Weekly											
	12/27	1/3	1/10	1/17	1/24	1/31	2/7	2/14	2/21	2/28	3/7	3/14
Average	1.417	1.415	1.419	1.454	1.449	1.424	1.411	1.399	1.404	1.689	1.456	1.403
East Coast (PADD 1)	1.526	1.527	1.540	1.582	1.581	1.592	1.550	1.541	1.568	1.790	1.561	1.496
Central Atlantic (PADD 1B)	1.519	1.517	1.526	1.569	1.572	1.600	1.554	1.563	1.602	1.855	1.570	1.524
Delaware	-	-	-	-	-	-	-	-	-	-	-	-
New Jersey	1.630	1.640	1.650	1.710	1.710	1.720	1.700	1.690	1.720	1.930	1.570	1.540
New York	1.484	1.479	1.489	1.526	1.530	1.645	1.518	1.527	1.573	1.852	1.565	1.524
Pennsylvania	1.480	1.473	1.482	1.519	1.522	1.502	1.497	1.515	1.555	1.814	1.573	1.514
Lower Atlantic (PADD 1C)	1.536	1.543	1.560	1.601	1.595	1.580	1.543	1.510	1.518	1.694	1.548	1.438
North Carolina	1.529	1.535	1.541	1.582	1.579	1.566	1.533	1.498	1.500	1.651	1.475	1.438
Virginia	1.555	1.565	1.610	1.650	1.635	1.615	1.570	1.540	1.565	1.805	1.735	-
Midwest (PADD 2)	1.373	1.371	1.372	1.404	1.397	1.357	1.356	1.342	1.339	1.649	1.415	1.370
Illinois	1.394	1.384	1.383	1.410	1.406	1.364	1.353	1.347	1.327	1.607	1.419	1.359
Indiana	1.451	1.445	1.447	1.482	1.485	1.463	1.459	1.464	1.529	1.792	1.527	1.477
Iowa	1.366	1.366	1.366	1.398	1.390	1.348	1.350	1.333	1.314	1.646	1.408	1.363
Kansas	1.329	1.328	1.329	1.360	1.351	1.308	1.309	1.288	1.272	1.608	1.361	1.322
Minnesota	1.375	1.374	1.374	1.401	1.391	1.336	1.337	1.316	1.297	1.609	1.388	1.348
Missouri	1.342	1.341	1.341	1.370	1.362	1.326	1.327	1.309	1.295	1.627	1.387	1.345
Nebraska	1.351	1.347	1.348	1.378	1.369	1.327	1.327	1.307	1.290	1.617	1.382	1.340
North Dakota	1.320	1.346	1.349	1.475	1.410	1.340	1.350	1.300	1.278	1.488	1.335	1.330
Ohio	1.456	1.451	1.452	1.488	1.491	1.468	1.466	1.471	1.526	1.792	1.535	1.482
South Dakota	1.320	1.320	1.320	1.347	1.340	1.307	1.309	1.294	1.312	1.645	1.400	1.363
Wisconsin	1.379	1.379	1.380	1.408	1.401	1.363	1.364	1.349	1.333	1.669	1.430	1.388

- = Data Not Available.

Source: Based on terminal quotes collected by the Oil Price Information Service (OPIS).

Appendix Six

Winter Fuels Explanatory Notes

Prices -- The residential No. 2 heating oil and propane prices (excluding taxes) for a given State are based on the results of telephone surveys of a sample of marketers and refiners. Data are collected by State Energy Offices under the Energy Information Administration (EIA) State Heating Oil and Propane Program.

Sampling Methodology and Estimation Procedures -- To estimate aggregate propane and No. 2 heating oil price data for a State, the sample and volume weights were applied to the reported price, summed and divided by the sum of the weighted volume:

$$\sum_{j=1}^s \sum_{i=1}^{n_j} w_{ij} v_{ij} p_{ij} / \sum_{j=1}^s \sum_{i=1}^{n_j} w_{ij} v_{ij} .$$

where w = sample weight, v = volume weight, p = price, i = respondent, n_j = sample size of stratum j , and s = number of strata, to obtain a volume weighted price.

The volumes used for No. 2 heating oil and propane are the company's residential sales volume as reported on the EIA-863 "Petroleum Product Sales Identification Survey."

These fixed volume weights indicate the relative importance of the individual companies according to the size of their sales. Therefore, changes in the average price across time reflect only the change in the price being offered by the company, and not changes in the amounts sold. Price indexes constructed using fixed volumes, such as these annual sales, are known as Laspeyres Indexes. The alternative method of weighting, current weights, would require each company to report the number of gallons sold at the reported price each pricing period. This method is more burdensome on the companies and reflects prices over a period of time as compared to a point in time. Therefore, the calculation of average prices tends to lag behind the reference period. Indexes constructed from current period weights are known as Paasche Indexes.

Both methods of weighting are correct; they do, however, vary when current weights are changing. It has been argued that during periods of change, the Laspeyres method has a tendency to overestimate price changes, while the Paasche method tends to underestimate price changes.

In this survey, it is expected that the relative change in volumes weekly is small. Residential sales are not bulk in nature and do not tend to reflect discounts on price for large volume purchases. Absolute changes in volume within a year's time would more likely reflect demand and be consistent across companies within a geographical area.

Residential No. 2 Heating Oil -- The No.2 heating oil price data are reported by a statistical sample. The sample design used is similar to that used for the EIA Form EIA-782, "Resellers'/Retailers' Monthly Petroleum Product Sales Report." The sampling frame used was based on residential heating oil sales reported on the 2002 Form EIA-863, "Petroleum Product

Sales Survey.” Certainties were defined at the State level according to the market shares of sales in each State as reported in the frame survey. The remaining frame companies were stratified into three groups by their residential heating oil sales volumes in each State. Strata boundaries were determined using the Dalenius-Hodges procedure. The sample allocations were designed to yield average price coefficients of variation (CV) of 1%, but individual State sample sizes were capped at 35 if the target CV was not met at that point. In those States, the average CV is expected to be less than 3%. In addition, a minimum size of 15 was required for each State. The sample weights (w_{ij}) used in estimating average prices were calculated as N/n , the inverse of the probability of selection. Volume weights (V_{ij}) were assigned using the data reported in the frame survey.

Residential Propane -- The propane price data are reported by a statistical sample. The sample design is similar to that of the heating oil sample, defining certainty companies according to their State level market shares as reported in the 2002 EIA-863 survey, and stratifying the remaining frame companies into 2 size groups according to their volumes. However, the selection and reporting unit for propane is the outlet, so for certainties, an outlet of the company was selected for each 5% market share the company had in the State. The Dalenius-Hodges procedure was used to define the strata boundary for the remaining frame companies. The individual outlets were then selected using an outlet address listing EIA developed using information provided by the industry and State energy officials. The sample allocations for propane were designed to yield average price coefficients of variation (CV) of 1%, but State sample sizes were capped at 35 if the target CV was not met at that point. In those States, the average CV is expected to be less than 3%. In addition, a minimum size of 15 was required for each State. Sampling weights (w_{ij}) for noncertainties were calculated as N/n , the inverse of the probability of selection for that State. Volumes for sampled outlets were assigned as the total company volume in the frame survey divided by the number of outlets on the outlet list for each company.

Revision Error -- Numbers may be revised in the publication based on data received late or receipt of revised data. Numbers are published as preliminary and final. The difference between preliminary and final data is called the revision error.

Response Rate -- Response rates are generally 95 to 100 percent.

Confidentiality of Information -- The information contained on Form EIA-877 will be kept confidential and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, the DOE regulations, 10 C.F.R. Sec. 1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. Sec. 1905. The EIA will protect individual respondent’s information in accordance with its confidentiality and security policies and procedures.

The Federal Energy Administration Act requires the EIA to provide company-specific data to other Federal agencies when requested for official use. The information reported on the Form EIA-877 may also be made available, upon request, to another component of the Department of Energy (DOE); to any Committee of Congress, the General Accounting Office, or other Federal agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order.