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THE COMMONWEALTH OF MASSACHUSETTS

DIVISION OF ENERGY RESOURCES

FINAL REPORT

NO. 2 Heating Oil/Propane Program

1991/92

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INTRODUCTION

During the 1991-92 heating season, the Massachusetts Division of Energy Resources (DOER) participated in a joint data collection program between several state energy offices and the federal Department of Energy's (DOE) Energy Information Administration (EIA). The purpose of the program was to collect and monitor retail and wholesale heating oil and propane prices and inventories from October, 1991 through March, 1992.

This program augmented the existing Massachusetts data collection system and served several important functions. The information helped the federal and state governments to respond to consumer, congressional and media inquiries regarding propane and No. 2 heating oil. The information also provided policy decision-makers with timely, accurate and consistent data to monitor current heating oil and propane markets and develop appropriate state responses when necessary. In addition, the communication network between the states and the DOE was strengthened through the program.

This final report begins with an overview of the unique events which had an impact on the reporting period. Next, the report summarizes the results from the residential heating oil and propane price surveys conducted by DOER over the 1991-92 heating season. The report also incorporates the wholesale heating oil and propane prices and inventories collected by the EIA and distributed to the states.

Finally, the report outlines DOER's use of the data and responses to the events which unfolded during the 1991-92 heating season.

DISCLAIMER

OVERVIEW

Events which occurred prior to the 1991-92 heating season set the stage for crude oil, petroleum product, and propane prices and inventories at the beginning of the 1991-92 heating season, and continued to affect them throughout the winter.

Some of the major events that influenced oil markets before the heating season were: the aftermath of the August, 1990 Iraqi invasion of Kuwait; the Spring and Summer reductions in Soviet oil supplies; and the September, 1991 OPEC production quota accord. Below is an overview of these events and how they influenced world crude oil prices.

I. Aftermath of the 1990 Iraqi Invasion of Kuwait

The August, 1990 invasion of Kuwait by Iraq immediately interrupted Kuwait's crude oil and refined petroleum production and exports. In retaliation to the invasion, the United States and certain European countries immediately instituted an Iraqi oil boycott which was also endorsed by the United Nations. The cuttoff of Kuwait's oil supplies and the Iraqi oil boycott removed approximately 4.3 million barrels of crude oil per day from world oil markets. As a result, world crude oil prices peaked at $36 a barrel in October, 1990, up from about $17 per barrel just before the invasion.

Eventually, the gap in world oil supplies was eased as OPEC members, particularly Saudi Arabia, and other oil producing countries increased oil production. Panic buying began to wane as the additional crude supplies reached market and world crude oil prices began to come down.

Prices did increase to about $26 per barrel just before the Allies' January 15th deadline for a peaceful solution to the invasion. On January 16th, 1991, with no prospects of a peaceful solution, the Allies began a massive air attack against Iraq's military posts.

Surprisingly, world crude oil prices collapsed within hours after the war began, due to great early success for the U.S. and its allies, which created expectations of a short war. The "war premium" factor which had inflated crude oil prices was gone and prices fell from $27 to $17 per barrel.

OPEC's February 1991 Production Accord

After the January, 1991 Allied War with Iraq, world crude oil prices fell due to decreasing winter petroleum demand combined with high OPEC oil production. By the end of February, 1991, crude oil prices hovered around $16.50 per barrel.

Following the end to the war in February, 1991, OPEC members attempted to halt the decline in world crude oil prices and increase OPEC's crude oil reference price to $21 per barrel by agreeing to cut crude oil production in the second quarter of 1991 from about 24 million barrels per day (mb/d) to 22.3 mb/d. OPEC members thought that the new production quota was achievable since Iraq's oil was boycotted from world oil markets, and Kuwait was not producing oil due to its badly damaged refineries and burning oil wells.

Though OPEC announced its proposed oil cutback, world crude oil prices continued to remain soft throughout the second quarter of 1991. OPEC needed to cut production to 21 mb/d in

order for world crude prices to rise, according to some oil industry analysts. If not, they said, world crude oil supplies would continue to exceed demand.

World crude oil prices did not decline, rather they continued a steadily increasing trend because other events led to market uncertainty about crude oil supplies.

Uncertainty About Iraqi Oil Sales

One such event was Iraq's flip flop thoughout the year about agreeing to United Nations' terms which would allow Iraq to sell oil for humanitarian aid. The uncertainty about either the continued lack of Iraqi oil sales or the resumption of Iraqi oil sales kept the oil markets guessing.

Throughout the Spring and Summer of 1991, the United Nations worked on plans to meet Iraq's request to resume oil exports to get money for food and medical aid. The proposed U.N. plans would allow Iraq to sell about $1.6 billion worth of oil (appoximately 500,000 barrels per day for six months). The U.N. would establish an escrow account for reparations to countries and individuals damaged by Iraq's invasion of Kuwait; payments for the U.N. to destroy Iraqi war weapons; and, money distribution to Iraq for food and other emergency items. The U.N. also would name a special team to monitor all aspects of Iraq's oil sales.

In August, a U.N. resolution created the first step in the sale of Iraqi oil. However, Iraq strongly objected to the U.N.'s supervisory terms for the sale. Iraq suggested that unless changes were made to the terms, Iraq would reject the plans. The U.N. proceeded with their plans and Iraq eventually

did reject the plans in September, 1991.

Throughout the Winter, Iraq continued meetings with the U.N. to iron out differences, but no plan was ever agreed to or implemented by the end of the Winter, 1992. By that time, Iraq decided it would build its own oil exporting facilities rather than pump oil through the Turkish pipeline as stipulated in the U.N. resolutions.

II. Decline in Soviet Oil Supplies

The oil market's anticipation of more crude oil from Iraq into an already flooded oil market, coupled with the market's lack of confidence in OPEC's proposed production cuts would have had a severe dampening effect on world crude oil prices had the decline in Soviet oil supplies not happened.

In mid-March, 1991, the Soviet Union announced that oil exports would be cut in half from the approximate 2.5 mb/d level for 1990 to 1.2 mb/d in 1991. This reduction, according to the Soviet Union, resulted from declining production caused by a shortage of parts for oil field equipment.

At first, the market's anticipation of a 1.3 mb/d oil loss buoyed world oil prices; however, no dramatic world oil price increase occurred since the loss was mostly offset due to OPEC's continued overproduction of about 1.2 mb/d.

As mentioned earlier, world crude oil prices were soft, but climbing in the second quarter of 1991. World crude oil prices started to climb in April, 1991 from about $15.50 per barrel to $17 per barrel as the Spring demand for gasoline picked up; there was a late cold snap in Europe and demand for heating oil remained; and, the 1991 North Sea maintenance

shutdown season began. World crude oil prices remained relatively stable at about $16-17 per barrel until August, 1991 when prices started to climb.

Soviet Coup Attempt

One event which influenced markets in August was the soviet coup attempt. In August, the attempted coup in the U.S.S.R. resulted in oil supply uncertainty which triggered upward movement in world crude prices to about $18 per barrel. Although the United States does not import Soviet crude oil or petroleum products, the Europeans do and any disruptions in supplies would mean Europe would compete for other world oil supplies, thus driving up prices.

Rumors abounded that the coup was reducing exports. At the same time, Boris Yelstin, President of the Russian Federation was calling for a nationwide work stoppage, despite an official ban on strikes. A strike would threaten crude oil and product output, refining and transportation. Coup leaders, on the other hand, were calling for the continuance of oil exports since they needed hard currency. Conflicting stories about oil exports reached the oil markets and might have caused havoc in oil markets, but the coup only lasted for a few days and world crude oil prices subsided slightly.

Throughout the rest of the year, the U.S.S.R. continued to fall apart and there were many disputes, some involving oil production, among the newly emerging republics. Although there were no significant disruptions to Soviet oil exports, reductions in overall oil production still occurred.

III. OPEC's September Accord

Generally, crude oil prices tend to rise before an OPEC meeting due to psychological factors and oil industry guessing whether or not OPEC will cut production. This was the case in September, 1991 before the OPEC meeting. In September, crude oil prices continued to rise from the $17-18 per barrel price at the end of August to about $18.50 before the OPEC meeting.

At the meeting, OPEC members set a group wide ceiling (as opposed to individual country quotas) of 23.65 mb/d for fourth quarter 1991 production. This was about equal to the current production, but still more than the limit of 22.3 mb/d set in the Spring of 1991. Members also renewed their commitment to a $21 per barrel reference price. OPEC members agreed to meet again if oil supplies from Kuwait and Iraq entered the market.

Normally, world crude oil prices might have receded if the market believed that OPEC should further cut back production. However, world crude oil prices continued to rise through October when they peaked at about $20 per barrel.

OIL SURVEY RESULTS

World Crude Oil Prices

As previously mentioned, world crude oil prices started increasing at the end of August from about $17-18 per barrel and peaked in October at about $20. The increase was influenced by rumors of tight oil supplies in the fourth quarter of 1991, Iraq's rejection of U.N. oil sales plans, Kuwait's struggle to repair its war damaged oil facilities, and the declining oil production in the Soviet Union. These

concerns kept the market speculating whether or not there would be enough supplies to meet winter petroleum demand.

After their October peak, world crude oil prices fell continuously through January, 1992. One reason was oil markets were less concerned with the decline in Soviet oil production following the dramatic political changes in the U.S.S.R. leading to the breakup of Soviet republics. This was seen when the Russian Federation, which produces 90% of the oil in the former Soviet Union, suspended all Soviet oil export licenses pending a review of domestic needs in November. For two reasons this measure caused only temporary turmoil in the European markets where Soviet gasoil is a major source of European home heating oil supplies; and, only a small blip in world crude oil prices. First, European petroleum supplies were adequate to meet demand because the European countries had been stockpiling supplies in anticipation of Soviet cutbacks. (European petroleum stocks were also high following a Summer buildup of stocks before Germany's July tax hike on petroleum products.) Second, the Russian Federation quickly finished the review by early December.

Another reason for the crude oil price decline after October, 1991, was that the market anticipated that Kuwait would be able to resume oil exports much earlier than previously expected. Kuwait capped all of its burning oil wells in November. By December, Kuwait's oil production was about 470,000 b/d. Kuwait predicted that production would reach 550,000 b/d by December; 950,000 b/d by mid-1992; and, 1.6 mb/d by the end of 1992.

So, by the end of October, world crude oil supplies appeared adequate given the continued world economic downturn as well as warmer than normal European and U.S. winter temperatures. (See Table II.). As a result, world crude oil prices fell to about $16 per barrel by the end of December and continued to remain low because of sluggish worldwide demand.

World crude oil prices did increase slightly in January, 1992, from about $16 per barrel to almost $17 per barrel. This was due to market anticipation of announced oil production cuts by OPEC at OPEC's upcoming February, 1992 meeting. In addition, prior to OPEC's meeting, several oil producing countries did cut back production in January because of the oversupplied crude oil market and in hopes that Saudi Arabia would also cut its production. Nigeria, Venezuela, Libya, Iran, Algeria, and Qatar agreed to cut a total of 235,000 b/d. Saudi Arabia eventually cut production by 100,000 b/d. Even with those cuts, world crude oil prices rose only slightly in January.

At the February 12, 1992 OPEC meeting, members had a difference of opinion on how much production to cut and how soon. Finally, members did agree to cut 1.4 mb/d in the April - June period. The oil markets did not take OPEC seriously because that time frame is when world oil demand is at a seasonal low. World crude oil prices remained soft and were $16.50 at the end of March.

U.S. West Texas Intermediate Crude Oil Prices

U.S. Crude oil prices, as measured by West Texas Intermediate oil, followed the same trends as the world crude

oil prices.

Before the Allied war with Iraq, in January, 1991, U.S. crude oil prices were $32 per barrel. By the end of February, oil prices had fallen to $19 per barrel. Then, prices slowly rose, hovering around $20.50 - 21.50 per barrel throughout the Summer. By October, U.S. crude oil prices reached $22 per barrel, peaked at $24, and started declining throughout the remainder of the heating season. By the end of December, prices were $18.50 per barrel. Prices did rise again to $19.50 prior to the February, 1992, OPEC meeting, but fell after the meeting to about $18.50 where they remained until the end of this survey.

Massachusetts Wholesale Heating Oil Prices

Wholesale and retail heating oil prices are generally determined by the price of crude oil. During this heating season, wholesale heating oil prices followed the same trends as those in crude oil.

In August, Massachusetts wholesale heating oil prices were 65.9¢ per gallon. Prices increased 7.7¢ per gallon to reach the season's peak of 73.6¢ per gallon in the beginning of November. This price increase correlates directly with the $3 per barrel or 7.5¢ per gallon crude oil price increase from August to mid-October. Generally, wholesale heating oil price increases lag crude oil price increases and retail heating oil price increases, in turn, lag the wholesale price increases.

Again, wholesale heating oil prices followed the same trend as crude oil prices when crude oil prices increased in January prior to the February OPEC meeting. The wholesale

price increase was from 56¢ to 59¢ per gallon. As crude oil prices fell in January, so did wholesale heating oil prices. At the end of the survey, wholesale heating oil prices were 57.8¢ per gallon, a decrease of about 15.8¢ per gallon from the 73.6¢ season high. (See Table I.).

Massachusetts Retail Heating Oil Prices

Typically, retail heating oil prices follow wholesale price increases/decreases though retail price trends tend to lag behind the wholesale price trends. In addition, wholesale price trends fluctuate more quickly and widely than retail price trends. (See Table I.). In August, Massachusetts retail prices started out at 95¢ per gallon, and gradually climbed by mid-November to $1.025, an increase of 7.5¢ per gallon. This is about the same increase as was seen with wholesale prices.

By the end of this survey, retail prices were back down to 94.2¢ per gallon, a decrease of only 8.3¢ per gallon. This is much less of a decrease than the wholesale price decrease of 15.8¢ per gallon. (See Table I.). It seems that retail price increases happen more quickly than retail price decreases.

On the other hand, the good news for Massachusetts retail heating oil consumers this heating season was that retail prices averaged about 20-25¢ per gallon less than the previous heating season when prices averaged $1.35 in October, $1.25 in November, $1.23 in December, $1.18 in January, $1.15 in February, and $1.07 in March. (Last year, Iraq's invasion of Kuwait and the loss of oil in the international markets caused heating oil prices to be higher.)

U.S. Crude Oil Inventories

At approximately 339 million barrels, U.S. crude oil inventories at the beginning of the heating season were well within the normal range. After crude oil prices fell from their October peak, crude oil inventories were once again built up. By mid-November, U.S. crude oil inventories increased to 352 million barrels due to the combination of low crude oil prices and mounting concerns about declining Soviet oil production.

As oil markets' concerns about crude oil shortages subsided, U.S. crude oil inventories were drawn down throughout December reaching a seasonal and historic low level of 325 million barrels by the end of the year. In January, crude oil stocks again started to climb and reached a comfortable level of 342 million barrels by mid-March.

U.S. Distillate Inventories

Like crude oil inventories, U.S. distillate inventories had been building throughout the Summer and were approximately 137 million barrel, a 5 year high, at the beginning of October. In fact, U.S. distillate inventories were built up and remained relatively high throughout December until mid-January when inventories reached 143 million barrels. This was due to relatively warm winter weather, sluggish demand, and a dampened economy. In the first quarter of 1992, U.S. distillate inventories declined substantially as demand for diesel fuel in the transporation market increased. By mid-March, U.S. distillate inventories stood at 101 million barrels.

New England Distillate Inventories

Distillate inventories in New England were higher throughout this heating season than they had been during the previous heating season.

	1991/92	1990/91
	(million barrels)	
October	11.0	10.6
November	11.7	9.7
December	9.9	8.3
January	7.3	5.4
February	6.6	3.6
March	4.5	3.5

Last year, New England distillate oil levels had reached an historic low level in March because of high heating oil prices induced by the Iraqi invasion of Kuwait coupled with an extremely warm winter caused Massachusetts heating oil demand to plummet. This heating season's inventory levels were more in line with normal inventory levels.

Massachusetts Heating Oil Demand

Heating oil demand is typically a function of supply, price, and weather. This heating season, heating oil supplies were adequate. The weather, however, was warmer than normal. (See Table II.). The warm weather, combined with the Massachusetts economic downturn, kept heating oil demand relatively low as compared to historic levels. (See Table III.).

PROPANE SURVEY RESULTS

U.S. Propane Inventories

Like other heating fuels, propane usage is much heavier in the Winter than the Summer. Consequently, inventories are

built up in April through October, and propane is stored until it is needed.

This heating season began with historically low U.S. propane inventories. (See Table IV.). In October, U.S. propane stocks averaged 52.0 million barresl compared to 54.7 and 53.9 million barrels, respectively in 1990 and 1989. The U.S. Department of Energy attributed the low propane stock levels to an increase in propane demand from the petrochemical industry, coupled with lower than normal propane imports. By the end of November/early December, U.S. propane stocks were in the normal range. By January, stocks were higher at 38.9 million barrels than they had been in January of 1990 or 1991 when stocks were 33.5 and 34.8 million barrels.

New England Propane Inventories

In New England, propane inventories were higher at the beginning of this heating season than they had been at the beginning of the 1989/90 heating season, the Winter when some areas of New England experienced shortages of propane. Table IV shows that New England propane inventories in October, 1991 were .4 million barrels as compared to .1 million in October, 1989. Throughout the heating season, New England propane inventories were in the normal range and adequate to meet demand.

East Coast Wholesale Propane Prices

Propane prices are affected by crude oil prices because propane is produced both by natural gas processing plants and by oil refiners. At refineries propane is produced along with gasoline, distillate fuels and other fuels. But, propane

prices also are influenced by markets other than heating oil markets (e.g. petrochemical industry and crop drying).

The petrochemical industry, prior to the heating season, demanded propane because the price of propane was low compared to other substitute fuels the industry could use. The petrochemical industry's demand and low propane stocks caused the price of propane to increase before the heating season.

East Coast propane wholesale prices, like wholesaleheating oil prices, increased through October. Wholesale prices went from 48.4¢ per gallon to 51.6¢ per gallon, an increase of 3.2¢ per gallon. In December, wholesale propane prices fell and leveled off at about 36¢ per gallon by the end of the survey. This was a decrease of 15.1¢ per gallon. (See Table V.).

Massachusetts Retail Propane Prices

At the retail level, the propane heating fuel industry differs from the No. 2 heating oil industry. Typically, propane dealers contract with suppliers a month in advance for firm supply and price commitments. Home heating oil dealers, on the other hand, can pick up oil daily from the terminals and pay that day's price. Thus, there is less leeway for price increases/decreases in the retail price of propane as opposed to that of No. 2 heating oil.

Propane prices began the heating season on average at $1.153 per gallon, increased to $1.209 by mid-December, then fell throughout the remainder of the heating season to $1.154 by mid-March. (See Table V.). When prices peaked, the increase from the start of the heating season averaged 5.6¢ per

gallon. This was less than the 7.5 ¢ per gallon increase in No. 2 heating oil prices.

Also, retail propane price spreads can differ greatly than spreads in heating oil. For example, on January 6, 1992, the highest retail propane price was $1.53 per gallon and the lowest was $.73 per gallon - a difference of $.80 per gallon. The spread for heating oil on that date was $.294 per gallon.

The reason why the spread in propane prices can be so much greater is that retail propane dealers contract in advance with their suppliers and lock into contracts that set their propane prices. As a result, some dealers lock into contracts at certain prices and gamble on what wholesale prices will be. If they lock in at somewhat high prices thinking that prices will go even higher, but prices go lower, the dealer still has to pass on its cost of propane to its customers. Unfortunately for retail propane customers, the retail propane dealer normally owns the residential tanks and regulators so it is relatively easy for the dealer to pass on high costs. If the propane customer wants to switch propane companies, the customer must have his/her propane tanks physically changed.

Massachusetts Propane Demand

Massachusetts consumer grade propane demand this heating season was less than it has been in the past. (See Table VI.).

This was due to warm weather this Winter and the slump in the economy. DOER believed that the propane supplies would be adequate for the winter season.

MASSACHUSETTS' ACTIONS

The information collected through this program helped DOER to respond to information requests from the general public, the media and government entities; and helped DOER prepare for the U.S. Coast Guard a report on Massachusetts' petroleum supply needs as they relate to storage facilities along the Chelsea Creek, a tributary of Boston Harbor.

Information Dissemination

DOER conducted the surveys to gather up-to-date information. This information was used to answer numerous consumer inquiries about the average retail price of heating oil. Since the media constantly needed current information, DOER faxed the survey results to television and radio stations and newspapers for rapid dissemination.

In addition to publishing the survey results, DOER established a toll free hotline so that consumers could call for current retail heating oil data.

In February, 1992, DOER pointed out in its press releases that wholesale heating oil prices had fallen more dramatically than the retail prices. Wholesale prices had fallen about 15¢ per gallon whereas retail prices fell only about 8 ¢ per gallon. Hopefully, DOER's information dissemination put pressure on the retail dealers to more quickly lower their retail prices.

Chelsea Creek Report

Chelsea Street Bridge

The Chelsea Street Bridge spans Chelsea Creek in Chelsea, running off Boston Harbor along East Boston, Chelsea,

and Revere. Chelsea Creek is unique among our Massachusetts waterways because two miles of Chelsea Creek support petroleum "tank farms" which supply heating oil, gasoline, residual oil, and aviation fuel to nearly 4 million Massachusetts residents within a 50-mile radius of Chelsea Creek. These tanks constitute a very large percentage of the storage capacity in the greater Boston area: approximately 68% of the gasoline storage capacity, 25% of the heating oil storage capacity, and 32% of the jet fuel storage capacity. From Boston's Inner Harbor, Chelsea Creek tankers and barges pass through the Chelsea Street Bridge to off-load petroleum products to these tank farms which are operated by several oil companies.

Oil Tanker Collisions with Chelsea Street Bridge

The current passage of oil tankers through the Chelsea Street Bridge is extremely tight. The narrow bridge span creates the risk of a tanker accident at the bridge, which could result in the blockage of the Creek to tanker traffic. Over past years, tankers have collided with the bridge with some regularity, causing extensive damage. In one case, the drawbridge was severely damaged by a tanker and remained in the open position for 18 months thus preventing direct automobile traffic over a major bridge connecting East Boston and Chelsea. Given the high percentage of the region's petroleum product storage capacity which is upstream of the bridge, the consequences of an accident blocking the Creek would be quite serious.

Replacement of the Chelsea Street Bridge

Last Fall, DOER met with the Guard Bridge Administrator

for Region I who informed DOER that the federal Truman-Hobbs Act provides for federal funding for bridge replacement. The Coast Guard Commandant at Headquarters in Washington, DC has to approve the expenditure.

He explained that the first step in seeking federal funds is for the Coast Guard to conduct an informal, preliminary investigation as to the benefits and costs of replacing the bridge and writing a preliminary report. DOER offered to assist in this effort by preparing a report outlining the energy costs and benefits of replacing the bridge.

DOER's Report

In late March of this year, DOER submitted a report to the U.S. Coast Guard Bridge Administrator at Region I. Previously, DOER met with representatives of the oil companies with terminals upstream of the Chelsea Street Bridge to find out how the existing bridge increases their cost of doing business and, if an accident occurred, what the consequences would be of bridge closure. In addition, DOER gathered and analyzed current and forecasted petroleum product supplies, demand, and inventories. DOER's report concluded that replacement of the existing bridge with a new bridge would improve our region's energy supply system, and potentially help lower energy costs and improve the Massachusetts economy.

CONCLUSION

The Massachusetts Division of Energy Resouces continues to find this joint data collection program to be an integral and important part of DOER's consumer energy awareness program and its energy emergency planning program. The consistent collection of data provided an "early warning" system to key decision-makers. Monitoring the trends in the heating oil and propane markets also gave DOER the information to assist consumers in making purchasing decisions.

A most important element of the program was that DOER was able to gather the necessary oil supply and inventory information to stress to the U.S. Coast Guard the importance of Chelsea Creek to the Massachusetts energy supply system, and to convey to that agency the vulnerability the Commonwealth faces if oil supplies are interrupted.

In conclusion, DOER advocates for the continuation of this program.

RETAIL HEATING OIL AND PROPANE PRICE SURVEYS' METHODOLOGY

In an effort to ensure consistency, the EIA provided the states with the samples of No. 2 heating oil and propane companies to be surveyed for retail prices. The Massachusetts No. 2 heating oil company list consisted of 32 oil dealers throughout Massachusetts. These dealers represented small, medium, and large oil companies, and the retail division of major oil companies. Additionally, EIA provided DOER with a list of 16 propane dealers. DOER collected retail heating fuel prices from these companies via telephone surveys at specified times during the survey period of October 7, 1991 through March 16, 1992.

DOER transmitted the retail price data within 2 working days to EIA via computer. The EIA, in turn, calculated a weighted average retail price for heating oil and propane.

For the June - September retail heating oil data, DOER conducted its own retail No. 2 heating oil price surveys. DOER called about 80 oil dealers asking them for their retail price. The statewide average, however, was a straight average not a weighted average.

EIA conducted the wholesale heating oil and propane price surveys as well as the heating oil and propane stock surveys. EIA aggregated all the information and distributed it to the states in weekly publications.

Table I.

Massachusetts Retail and Wholesale Heating Oil Prices
($ per gallon)

Date 1991/92	High	Low	Straight Average	Weighted Average	Wholesale	Margin
DOER's Survey						
06/10	1.029	.800	.959	N/A	.6330	.3260
06/24	1.020	.800	.951	N/A	.6253	.3257
07/30	.999	.809	.948	N/A	.6585	.2895
08/20	.999	.829	.951	N/A	.6735	.2775
09/09	1.030	.849	.966	N/A	.6830	.2830
09/23	1.030	.819	.965	N/A	.6808	.2840
DOER/EIA Survey						
10/07	1.029	.765	.955	.965	.688	.277
10/21	1.079	.815	.988	.992	.728	.264
11/04	1.079	.815	1.030	1.008	.736	.272
11/18	1.099	.815	1.049	1.025	.713	.309
12/02	1.099	.815	1.041	1.014	.695	.319
12/16	1.089	.785	1.019	.994	.626	.368
01/06	1.059	.765	.991	.958	.562	.396
01/20	1.059	.755	.988	.955	.590	.365
02/03	1.059	.755	.988	.951	.590	.361
02/17	1.059	.755	.994	.964	.603	.361
03/02	1.059	.715	.986	.954	.599	.355
03/16	1.059	.675	.979	.942	.578	.364

DOER/EIA Survey

	Weighted Retail	Weighted Wholesale
10/07	.965	.688
10/21	.992 >.027	.728 >.04
11/04	1.008 >.016	.736 >.008
11/18	1.025 >.017	.713 >-.023
12/02	1.014 >-.011	.695 >-.018
12/16	.994 >-.02	.626 >-.069
01/06	.958 >-.036	.562 >-.064
01/20	.955 >-.003	.590 >+.028
02/03	.951 >-.004	.590 > 0
02/17	.964 >+.013	.603 >+.013
03/02	.954 >-.013	.599 >-.004
03/16	.942 >-.012	.578 >-.021

Table II.

Population Weighted Heating Degree Days

United States

July 1 -	1991-92	1990-91	Normal	% Change 1991-92 vs 1990-91	% Change 1991-92 vs normal
10/12	174	149	162	+17	7
10/19	242	199	222	22	9
11/02	387	355	385	9	1
11/16	690	571	617	21	12
11/30	936	798	911	17	3
12/14	1236	1112	1267	11	-2
01/04	1784	1716	1878	4	-5
01/18	2180	2101	2315	4	-6
02/01	2565	2539	2748	1	-7
02/15	2932	2843	3157	3	-7
02/29	3205	3167	3529	1	-9
03/14	3457	3466	3851	0	-10
03/21	3614	3576	3993	1	-9

Population Weighted Heating Degree Days

Boston, MA

July 1 -	1991-92	1990-91	Normal	% Change 1991-92 vs 1990-91	% Change 1991-92 vs normal
10/12	185	127	185	+ 46	0
10/19	260	154	258	69	1
11/02	420	346	446	21	-6
11/16	729	571	691	28	5
11/30	986	831	1010	19	-2
12/14	1310	1173	1414	12	-7
01/04	1996	1713	2120	17	-6
01/18	2468	2212	2610	12	-5
02/01	2981	2720	3113	10	-4
02/15	3517	3085	3607	14	-2
02/29	3884	3502	4068	11	-5
03/14	4297	3859	4475	11	-4
03/21	4540	4013	4655	13	-2

Table III.

Massachusetts No. 2 Fuel Oil Demand
(thousands of gallons)

	1987	1988	1989	1990	1991	1992
Jan	231,469	229,518	251,961	232,447	182,946	221,950
Feb	258,109	194,339	251,626	222,408	136,072	144,198
Mar	189,706	145,371	202,041	166,666	145,864	194,709
Apr	115,761	99,691	134,749	113,227	119,771	
May	73,986	77,715	77,782	83,623	61,699	
June	59,734	52,187	61,192	62,139	49,772	
July	64,339	49,490	51,264	55,508	44,651	
Aug	61,570	46,138	48,438	81,952	54,423	
Sept	63,265	48,507	58,530	57,609	55,418	
Oct	112,338	85,488	75,796	71,126	84,989	
Nov	154,772	113,482	150,100	115,731	112,131	
Dec	248,664	227,999	257,257	130,047	186,888	

Table IV.

U.S. Propane Stocks
(millions of barrels)

	1989	1990	1991	1992
Januray	45.1	33.5	34.8	38.9
February	36.4	33.2	29.9	
March	32.3	33.1	29.5	
April	36.7	32.1	29.5	
May	43.9	36.2	35.0	
June	49.6	45.0	41.6	
July	56.5	50.1	48.0	
August	60.4	54.2	50.4	
September	59.0	57.2	51.6	
October	53.9	54.7	51.2	
November	48.2	53.8	52.0	
December	31.5	48.9	46.9	

Massachusetts Propane Stocks
(millions of barrels)

	1989	1990	1991	1992
Januray	.4	.2	.5	.3
February	.2	.1	.3	
March	.3	.3	.3	
April	.4	.1	.6	
May	.2	.2	.2	
June	.6	.5	.4	
July	.7	.3	.3	
August	.4	.1	.1	
September	.3	.4	.4	
October	.1	.4	.4	
November	.3	.6	.4	
December	*	.5	.5	

Table V.

Massachusetts Retail Propane Prices
and
East Coast Wholesale Propane Prices
($ per gallon)

Massachusetts Retail				East Coast Wholesale
Date 1991-92	High	Low	Weighted Ave	
10/07	$1.35	.95	1.153	.484
10/21	1.52	.83	1.153	.506
11/04	1.62	.85	1.202	.513
11/18	1.57	.82	1.206	.510
12/02	1.47	.82	1.207	.516
12/16	1.53	.80	1.209	.429
01/06	1.53	.73	1.189	.373
01/20	1.53	.73	1.179	.361
02/03	1.53	.73	1.179	.358
02/17	1.53	.73	1.173	.368
03/02	1.53	.73	1.166	.362
03/16	1.53	.66	1.154	.365

Table VI.

Massachusetts Propane Demand
(thousands of gallons)

	1987	1988	1989	1990	1991	1992
Jan.	10160	13168	9134	9931	10153	5408
Feb.	8061	7318	9902	6842	8891	7175
March	7440	6657	8801	6858	6095	6104
April	4398	4031	5381	5707	4915	
May	5168	4465	4473	2947	4318	
June	3556	4117	3308	4980	3242	
July	3172	2141	4310	3832	3477	
Aug.	3130	3256	4229	3883	3338	
Sept.	3583	3680	3970	4745	3746	
Oct.	4624	4684	5180	5107	4432	
Nov.	5570	5926	5416	5230	5477	
Dec.	6912	8210	7183	5920	6429	