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End-of-Season Heating Fuel Report

Augusta---The Maine State Planning Office (SPO) today released a year-end report on its weekly survey of retail home heating fuel prices. The report notes that the 1991-92 heating season was characterized by lower average oil prices than seen during the past two winters and prices that remained relatively stable throughout the season. This year, the heating season average was \$.87 per gallon, relative to \$1.10 per gallon last year and \$.94 per gallon during 1989-90. The seasonal average price for kerosene (cash sales) was \$1.05. The seasonal average for propane was \$1.33 per gallon, based on usage for residential space heating of between 500 and 700 gallons per year.

On a regional basis, heating oil prices within Maine showed a typical geographic variation this winter. Consumers in southern parts of the State saw prices averaging \$.80 per gallon, while consumers in central and northern areas experienced an average price of \$.88 and \$.92 per gallon, respectively.

Again, heating oil prices in Maine remained approximately 10 cents per gallon below the New England average. This is primarily due to the prevalence of the "cash discount" price in Maine. This type of discount is not common in other New England states.

The report also notes that consumers should compare heating fuel costs based on the heat content of the fuel, as measured in British Thermal Units, or Btu's, and the efficiency with which the fuel is used. The report contains several comparisons based on this winter's average prices.

The report also urges that, when purchasing a new or replacement heating system, consumers should make comparisons based on the total "life-cycle" cost of individual systems (i.e., the total installation and operating costs of an appliance throughout its useful life). Generally, no matter which fuel a consumer decides to use, it makes sense to purchase the most efficient heating equipment available. The State Planning Office has developed easy-to-use computer software to assist consumers in making cost-effective choices for heating and domestic hot water systems. For further information, call Dave Berry at 624-6029.

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Maine Heating Fuel Prices

1991-92 End-of-Season Report

Maine State Planning Office
Economics and Energy Policy Division
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State Planning Office Heating Fuel Price Survey

End of Season Overview

The 1991-92 heating season was characterized by lower average oil prices than seen during the past two winters and prices that remained relatively stable throughout the season. This year, the heating season average was \$.87 per gallon, relative to \$1.10 per gallon last year and \$.94 per gallon during 1989-90. (Figure 1) The rolling average depicts the general upward trend over the past six winters. This winter, the seasonal average price for kerosene (cash sales) was \$1.05. The seasonal average for propane was \$1.33 per gallon, based on usage for residential space heating of between 500 and 700 gallons per year.

Figure 1 Average Maine heating oil prices

Table 1 provides a historic overview of average Maine heating oil prices, including regional averages (to the extent data are available) and average annual Portland wholesale (rack) prices for the past six heating seasons (October through March). Note that the rack price is provided as a benchmark for comparison only. Individual retail dealers may purchase their supply at higher or lower prices than this average.

Table 1
(Average Prices in Cents per Gallon)

Heating Season	Southern	Central	Northern	State Avg.	Portland Rack
Jan-Mar 87	n/a	n/a	n/a	73.88	52.66
87-88	n/a	n/a	n/a	77.58	56.05
88-89	n/a	n/a	n/a	76.45	52.33
89-90	88.74	91.58	95.93	94.73	71.36
90-91	103.94	110.80	114.49	110.48	85.69
91-92	80.00	87.77	92.03	87.40	61.14

On a regional basis, heating oil prices within Maine showed a typical geographic variation this winter (Figure 2). Consumers in southern parts of the State saw prices averaging \$.80 per gallon, while consumers in central and northern areas experienced an average price of \$.88 and \$.92 per gallon, respectively. This regional differential is caused by relative proximity to wholesale terminals, differences in transportation costs, and differences in local market conditions. Some consumers, especially in southern Maine, occasionally saw unusually low prices due to a series of "price wars" between local dealers.

Figure 2 91-92 regional price trends

Based on the seasonal statewide average of \$.87 per gallon, an average consumer spent \$696 on heating oil this winter (average use is estimated at 800 gallons per season). This compares with an average cost of \$880 last year, but still higher than the \$608 per household spent in 1988-89. Note that these averages assume equal purchases each week during the heating season. Consumers who purchased most or all of their winter needs at lower off-season prices could have spent over \$100-150 less than a consumer who made significant purchases at peak season prices.

Once again, heating oil prices in Maine remained approximately 10 cents per gallon below the New England average. This is primarily due to the prevalence of the "cash discount" price in Maine. This type of discount is not common in other New England states.

In addition to comparing prices, consumers should remain aware that the true cost of different heating fuels depends on the fuel's relative cost per btu (British Thermal Unit), and the efficiency with which it is used. For example, heating oil contains 139,000 btu's per gallon, while propane contains only 91,500 btu's per gallon. Other fuels, such as firewood, natural gas, and electricity, are not sold in gallons and must be compared on a cost per btu basis. Figure 3 and Table 2 compare the actual cost of competing heating fuels based on this winter's average prices.

Note that Figure 3 represents price of energy *as purchased*, and is not adjusted for heating system efficiency. For example, seasoned firewood purchased at \$100 per cord costs \$4.76 per mbtu. However, since woodstoves are generally only 50-70 percent efficient (at best), the actual cost of heat delivered into the living space is between \$6.80 (at 70% efficiency) and \$9.52 (at 50% efficiency) per mbtu. Table 2 provides typical ranges for heating system efficiency. The column titled "Adjusted Cost per Mbtu" depicts the cost per million btus of energy as delivered into a household's living space, based on this winter's average prices and the range of typical heating system efficiency.

Figure 3 Cost per million btu's as purchased

Table 2

Fuel	Average Price	Conversion Factor	Cost per Mbtu*	Efficiency Range	Adjusted Cost per Mbtu
Firewood	\$100 per cord	21 Mbtu's/cord	\$4.76	50-70%	\$9.52-\$6.80
Heating Oil	\$.87 per gallon	0.139 Mbtu's/gal	\$6.26	65-85%	\$9.63-\$7.36
Nat. Gas	\$.663 per therm	0.1 Mbtu's/therm	\$6.63	65-95%	\$10.20-\$6.97
Kerosene	\$1.05 per gallon	0.136 Mbtu's/gal	\$7.72	65-90%	\$11.87-\$8.57
Propane	\$1.33 per gallon	0.0915 Mbtu's/gal	\$14.56	65-95%	\$22.40-\$15.32
Electricity	\$.12 per kwh	.003412 Mbtu's/kwh	\$35.17	100%	\$35.17

* Mbtu = 1 million btu's

The adjusted cost per mbtu is computed by dividing a fuel's cost per mbtu as purchased by the efficiency of the heating system. For example, the cost of oil at this winter's average price burned at 65% efficiency would be $\$.87 \text{ per gallon} \div .139 \text{ mbtu's/gal} = \$6.26/\text{mbtu}$, $\div .65 \text{ efficiency} = \$9.63/\text{mbtu}$. Heating oil burned at 85% efficiency would cost \$7.36/mbtu.

Note also that Figure 3 and Table 2 are based on statewide average prices. The cost per mbtu of heating oil based on the regional averages for southern, central and northern Maine average would

be \$5.75, \$6.31 and \$6.62, respectively. The prices for other fuels, especially firewood, also vary according to region and the manner in which it is purchased.

Electricity is not included in the graph (Figure 3) because of its much higher cost per mbtu. An average price of \$.12 per kilowatt-hour was used in the comparison in Table 2, although rates vary based on class of customer, time-of-use rates, and/or demand charges. At \$.07/kwh, electricity costs \$22.28/mbtu. At \$.15/kwh, electricity costs \$43.96/mbtu.

When purchasing a new or replacement heating system, consumers should make comparisons based on the total "life-cycle" cost of individual systems. For example, some systems are less expensive to purchase and install, but use a more expensive fuel. Other systems may be more expensive initially, but may prove to be cost-effective over a given period of time based on lower operating costs. Generally, no matter what fuel a consumer decides to use, it makes sense to purchase the most efficiency heating equipment available. The State Planning Office has developed easy-to-use computer software to assist consumers in making cost-effective choices for heating and domestic hot water systems. For further information, call Dave Berry at 624-6029.