

## Highlights

# Sales of Fuel Oil and Kerosene in 2006

In 2006, despite a year of continued economic growth a number of factors combined to reduce demand and lower sales of fuel oil and kerosene. In 2006, the winter was not only warmer than the previous year, it was considerably warmer than normal and the summer was somewhat milder than in 2005. In addition, prices that had increased sharply during the last few months of 2005 continued to rise, although at a slower rate. Consequently, the combined sales of the three product groups fell by 5.6 percent to total 73.3 billion gallons, reflecting a drop of nearly 4.4 billion gallons from 2005, and the lowest combined total since 2002.

Although distillate sales fell by more than 973 million gallons during the year, and kerosene sales dropped by 247 million gallons, it was the drop in sales of residual fuel oil that dominated the overall decline. Falling by 3.2 billion gallons, the drop in residual sales accounted for more than 70 percent of the overall drop in sales, hitting a new record low for residual fuel oil sales. For both distillate fuel oil and

kerosene, total sales were the lowest since 2002.

In 2006, sales of residual fuel oil accounted for 14.0 percent of total sales, the lowest percentage of total fuel oil and kerosene sales since EIA began collecting data. The large drop in sales of residual fuel oil, coupled with the drop in sales of kerosene, resulted in distillate fuel oil sales accounting for 84.9 percent of total sales, which surpassed the previous highest percentage of total sales set in 2002, when distillate sales accounted for 84.3 percent of total fuel oil and kerosene sales. Sales of kerosene accounted for 1.1 percent of total sales compared to 1.4 percent in 2005.<sup>1</sup>

### Distillate Fuel Oil

Distillate sales decreased in 2006, countering the long-term trend of rising distillate sales and echoing the unusual drops in sales that occurred in 2001 and 2004.<sup>2</sup> However, in 2004, the magnitude of the drop was not only approximately 40 percent larger, it was

**Table HL1. Volume Distribution of Distillate and Residual Fuel Oils, 2005 and 2006**

Energy Use	2006 Distillate		2005 Distillate		2006 Residual		2005 Residual	
	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share
Residential.....	4,985	8.0	6,154	9.7	—	—	—	—
Commercial.....	2,809	4.5	3,224	5.1	479	4.7	720	5.4
Industrial.....	2,464	4.0	2,460	3.9	1,452	14.1	1,671	12.4
Oil Company.....	637	1.0	473	0.7	65	0.6	74	0.6
Farm.....	3,261	5.2	3,216	5.1	—	—	—	—
Electric Power.....	656	1.1	907	1.4	2,506	24.4	5,764	42.9
Railroad.....	3,552	5.7	3,448	5.5	—	—	—	—
Vessel Bunkering.....	1,903	3.1	2,006	3.2	5,754	56.0	5,179	38.5
On-Highway.....	39,118	62.9	38,053	60.2	—	—	—	—
Military.....	329	0.5	269	0.4	12	0.1	30	0.2
Off-Highway.....	2,479	4.0	2,956	4.7	—	—	—	—
<b>Other.....</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>6</b>	<b>0.1</b>	<b>5</b>	<b>0.0</b>
<b>Total.....</b>	<b>62,192</b>		<b>63,165</b>		<b>13,442</b>		<b>13,442</b>	

Notes: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report," for 2002-2006. On-Highway Diesel data are Federal Highway Administration statistics of highway special fuels use.

<sup>1</sup> Numbers may not sum to 100 percent due to rounding.

<sup>2</sup> The drop in 2004 of nearly 1.6 billion gallons not only goes against the long-term trend of increasing volume that averaged 1.47 gallons annually from 1990 through 2003, it was also significantly larger and more widespread than the drop in 2006 and nearly three times the size of the drop in sales that occurred in 2001 when total distillate sales fell by 588 million gallons.

more widespread with small increases registered in only two energy use sectors. In 2006, the results were considerably more mixed, in fact, despite a decrease of 973 million gallons (more than 1.5 percent) in overall sales of distillate fuel oil, sales dropped in five energy use sectors, whereas sales to six energy use sectors increased in comparison to the previous year, some by considerable amounts.

Although higher prices played a role in the drop in sales, other factors also had a negative impact on the market during the year. In particular, weather was an important factor with a winter considerably warmer than normal, playing a role in decreased sales to the commercial and especially the residential sectors, which fell by 12.9 percent (415.4 million gallons) and 19.0 percent (1.2 billion gallons) respectively. The warmer than normal winter coupled with a summer somewhat milder than was the case in 2005, also helped reduce sales to the electric power sector by 27.6 percent (250.6 million gallons). In addition, a downturn in new home construction contributed to a drop in off-highway use of distillate of 16.1 percent (477.0 million gallons). Despite a drop in sales of distillate bunker fuel of more than 102 million gallons, sales to the transportation sector increased in the aggregate with sales to the railroads increasing by more than 104 million gallons and sales of on-highway diesel up by more than 1 billion gallons.

The introduction of ultra low sulfur diesel caused some market disruption with the fuel in short supply during the fourth quarter of the year; outages were reported in a number of states in the upper Midwest from Iowa to the Dakotas and in the southeast especially in Tennessee, North Carolina and Georgia.<sup>3</sup> Nonetheless, neither the tight supplies nor the outages had a significant impact on total sales to the on-highway market.

Despite higher energy prices again in 2006, economic conditions as measured by a number of factors continued to improve during the year. Gross Domestic Product (GDP), a prime measure of the state of the economy, increased in constant dollars at 3.3 percent, just above the rate of 3.2 percent that occurred in 2005 and the second highest rate of increase since 2000. The unemployment rate dropped from 5.1 percent in 2005 to 4.6 percent in

2006, the lowest rate since 2000.<sup>4</sup> Further, in 2006, spending on new commercial construction increased by 17.6 percent surpassing the increase of 12.9 percent that occurred in 2005. In addition, production of durable goods increased by approximately 7.4 percent surpassing the increase of 6.6 percent in 2005; while manufacturing increased by 4.6 percent surpassing the rate of 3.9 percent set in 2005; and industrial production increased by 3.9 percent compared to an increase of 3.2 percent during 2005. However, unlike 2005 when spending on new housing increased by nearly 13 percent in 2006 spending on new residential construction fell by 2.6 percent.<sup>5</sup>

Although a number of factors including tight market conditions and changing regulations helped push prices of crude oil and petroleum products higher in 2006, the lingering effects of hurricanes Katrina and Rita on the U.S. oil and gas industry perhaps had the most significant impact. Data from the Energy Information Administration (EIA) show that it was not until May that U.S. refining utilization rate rose above 90 percent for the first time since the hurricanes Katrina and Rita. Further, it was not until June that EIA and American Petroleum Institute (API) data show that refinery inputs surpassed 16 million barrels per day for the first time since before hurricanes struck.<sup>6</sup> Another measure of the impact of the disruptions to the production, processing and refining of oil and natural gas is reflected in the fact that for the first time since 2001, total energy consumption in the United States decreased. Total energy consumption dropped from the all-time high set in 2005 by 0.904 quads to 99.536 quads.<sup>7</sup>

Sharply higher prices for fuel oil in the aftermath of hurricanes Katrina and Rita that continued into 2006 did not have any dramatically negative impact of sales of distillate fuel to the transportation sector. In fact, sales to the transportation sector increased in part because of the rising cost of gasoline. While vehicle miles traveled did increase overall, the rate of the increase slowed, 1.1 percent in 2006 compared to 1.4 percent the previous year. As motorists drove less, miles traveled slowed particularly during the second and third quarters of the year, increasing only by 0.3 percent and 0.4 percent respectively compared to increases of 2.3 and 1.2 percent in 2005. In

<sup>3</sup> Oil Price Information Service, *OPIS Alert* November 3 and 16, 2006.

<sup>4</sup> *Economic Indicators*, Mail2007, Washington D.C. U.S. Government Printing Office, p 17 (Industry production indexes, 2000 = 100)

<sup>5</sup> *Economic Indicators*, May 2007, p 12. (Note: data apply to persons age 16 and over.)

<sup>6</sup> For details see *Mid Year Report*, American Petroleum Institute, June 2006, and for the EIA data see: [http://tonto.eia.doe.gov/dnav/pet/xls/PET\\_PNP\\_UNC\\_DCU\\_NUS\\_M.xls](http://tonto.eia.doe.gov/dnav/pet/xls/PET_PNP_UNC_DCU_NUS_M.xls).

<sup>7</sup> One quad equals one quadrillion (a one followed by fifteen zeros) British thermal units (Btu), source EIA, MER May 2007, Table 2.1

addition, anecdotal evidence indicates that use of public transit increased sharply in such diverse locations as Los Angeles, California and Tulsa, Oklahoma. This is supported by the American Public Transit Association reporting an overall increase of three percent in the use of public transportation during the months following hurricanes Katrina and Rita.<sup>8</sup>

Sales to railroads increased by 104.8 million gallons (3.0 percent). During 2006, sales of diesel fuel to the on-highway segment increased by nearly 1.1 billion gallons (2.8 percent). The increase in sales to the on-highway sector not only exceeded the increase of 927.9 million gallons that occurred in 2005, it far surpassed the miniscule increase of 21.7 million gallons registered during 2004. However, sales for vessel bunkering, the third component of the distillate transportation market, did not fare so well, sales were down in most districts of the country, dropping by 102.4 million gallons (5.1 percent).

In the industrial sector, any negative impact resulting from higher oil prices was offset to some extent by the largest increase in total industrial production since 2000, 3.9 percent. Consequently, sales of distillate fuel oil to the industrial sector were essentially unchanged, growing only by 4.0 million gallons (0.2 percent).

In 2006, sales to the off-highway sector fell by 477.0 million gallons, a drop of 16.1 percent. This was unlike 2005 when sales to the sector increased by 208.6 million gallons, accounting for nearly 25 percent of the overall increase in distillate sales. However, in 2005, total private spending for new construction increased by 11.8 percent over the amount spent in 2004. In 2006, total spending on new construction increased by only 3.3 percent with spending on new residential construction falling by 2.6 percent compared to an increase of 15.4 percent in 2005.<sup>9</sup>

As mentioned above, weather played a significant role in shaping demand for distillate fuel during 2006. As was the case in 2005, the impact of weather was more widespread than typical. First, the winter

of 2006 was warmer than normal throughout every district of the country. In addition, the winter was also considerably warmer than 2005 in the New England and Central Atlantic Subdistricts, principal consuming areas of home heating oil.

Consequently, although sales of heating oil to the residential market fell in every district of the country, sales fell the most in the New England and Central Atlantic Subdistricts. Sales to the residential sector fell by 362.7 million gallons (16.4 percent) in the New England Subdistrict and by 655.4 million gallons (22.6 percent) in the Central Atlantic Subdistrict. At the national level, overall sales of residential heating oil decreased by nearly 1.2 billion gallons or 19.0 percent to just under 5.0 billion gallons.

Second, the weather also contributed to a change in distillate sales for use in electric power generation. The summer of 2006, while warmer than normal, was somewhat milder than the previous summer in the central and eastern portions of the country. Consequently, demand for distillate fuel to meet peak summer generation loads was considerably lower than it had been in 2005.<sup>10</sup> Nationally, sales decreased by approximately 250.6 million gallons (27.6 percent). Sales to the electric power sector decreased throughout the country except for a small increase of 2.1 million gallons in the Rocky Mountains District.<sup>11</sup>

Third, at the national level, distillate sales to the farm sector totaled just less than 3.3 billion gallons reflecting an increase of only 45.5 million gallons (1.4 percent) from the level set in 2005. The small increase of distillate in the farm sector reflects in part an increase in the cost of fuel used by farmers of 7.9 percent, which contributed to the planting of fewer acres of some crops, and in part it also reflects drought conditions and above normal temperatures that resulted in smaller harvests of some crops. Although the number of harvested acres of soybeans increased, the number of acres planted in wheat, cotton and corn declined. As a result, for the five principal crops the number of acres harvested decreased by 3.3 percent. Nationally the amount of

<sup>8</sup>Los Angeles *Times*, "U.S. motorists cutting back a bit", January 27, 2007.

<sup>9</sup>*Economic Indicators*, p.19.

<sup>10</sup>Smaller peaking units, especially older units are often combustion turbines (in some cases converted jet turbine engines that run on No 2 fuel oil). Such units are used in the winter when it is very cold, periods when interruptible contract provisions are triggered and some users of natural gas must switch to alternatives. It is also not unusual for distillate fuel to be used in such peaking units during the summer to meet peak cooling demand.

<sup>11</sup>The U.S. is divided into 5 Petroleum Administration for Defense Districts (PAD Districts). District 1, East Coast, District 2, Midwest, District 3, Gulf Coast, District 4, Rocky Mountains, and District 5, West Coast. PAD District 1 is broken into three subdistricts: Subdistrict 1A, New England, Subdistrict 1B, Central Atlantic, and Subdistrict 1C, Lower Atlantic.

citrus fruit harvested increased by 3.0 percent.<sup>12</sup> However, that percentage conceals the fact that the increase took place primarily in the citrus growing regions in the far west. Lingering damage along the Gulf Coast District from the hurricanes is reflected by the drop in sales of 68.3 million gallons (10.2 percent).

Fourth, weather also had a positive impact on sales for oil company use. Hurricanes Katrina and Rita ravaged the oil and gas infrastructure in the Gulf of Mexico, causing widespread and extensive damage to production platforms and to subsurface structures. In addition, the two storms in 2005 also caused extensive damage to refineries, pipelines, pumping stations and other facilities and installations on land. Much of that damage took months to repair and the work extended well into 2006 which contributed to a substantial increase in the region of 47.1 million gallons (17.9 percent). In addition, increased prices for oil and natural gas spurred exploration and development efforts in the industry, particularly in the Rocky Mountain region. Nationally, oil company use of distillate fuel oil increased by 164.0 million gallons (34.6 percent).<sup>13</sup>

On a regional basis, the warmer winter weather resulted in a drop in distillate sales to the residential sector in those districts of the U.S. where sales for home heating are concentrated. Sales fell the most in the East Coast District dropping by nearly 1.1 billion gallons. Within the East Coast, sales fell in all three subdistricts. Sales fell the most in the Northeast and the Central Atlantic Subdistricts, where they dropped by 362.7 million gallons and 655.4 million gallons respectively, and by 55.6 million in the Lower Atlantic. In the Midwest, sales fell by 104.7 million gallons. In the Gulf Coast District, sales were essentially unchanged slipping by just 0.7 million gallons. Sales increased slightly in the Rocky Mountains and West Coast Districts, increasing a total of 9.5 million gallons.

Sales to the commercial sector decreased in all three subdistricts of the East Coast falling by 119.5 million gallons in New England, 211.5 million gallons in Central Atlantic, and 24.8 million gallons in Lower Atlantic. Sales also fell in the Midwest, down by 15.6 million gallons, and the Gulf Coast where sales slipped by 25.3 million gallons. Sales also fell 22.0 million gallons in the West Coast. Sales increased

only in the Rocky Mountains but even there, sales increased only by 3.2 million gallons.

Despite an overall decrease nationally in total energy consumption by the industrial sector of 1.0 percent, sales of distillate fuel oil for use in industrial applications increased.<sup>14</sup> On a regional basis, sales of distillate to the industrial sector were mixed, down in some districts and up in others. Although overall sales decreased in the East Coast, sales increased substantially, growing by 40.8 million gallons in the Central Atlantic. Sales in both the New England and Lower Atlantic Subdistricts fell, down 17.2 million gallons and 28.2 million gallons respectively. In the Midwest, sales also decreased, falling by 23.8 million gallons. However, sales increased slightly in the Gulf Coast and Rocky Mountains, up 9.6 million gallons and 9.6 million gallons respectively. The largest increase took place in the West Coast District, where sales were up by 17.0 million gallons or 5.4 percent.

At the national level, unlike the situation in both 2004 and 2005 when distillate sales to the military fell, in 2006 sales to the military increased by 59.3 million gallons (18.3 percent). On a regional basis, sales fell in all three subdistricts of the East Coast, dropping by a total of 23.0 million gallons. Sales in the Gulf Coast also fell, down 21.8 million gallons. Sales in the Midwest and West Coast increased, by 2.1 million gallons and 101.9 million gallons respectively.

At the regional level, sales to the off-highway sector fell throughout the country with the exception of an increase in sales in the Central Atlantic Subdistrict of the East Coast. Sales dropped the most in the Midwest falling by 187.9 million gallons. In the East Coast, sales in the New England and Lower Atlantic Subdistricts fell by 18.0 million gallons and 82.3 million gallons respectively while sales in the Gulf Coast fell by 106.0 million gallons. Sales also fell in the Rocky Mountains and West Coast Districts dropping by 40.7 and 66.2 million gallons respectively.

On a regional basis, distillate sales to the electric power sector increased only in the Rocky Mountains, where a very small increase of 2.1 million gallons took place. Sales fell the most in the Central Atlantic Subdistrict of the East Coast dropping by 106.6

<sup>12</sup>Department of Agriculture, National Agricultural Statistics Service, Statistical Highlights of U.S. agriculture, 2006 & 2007.

<sup>13</sup>Oil Daily various issues.

<sup>14</sup>EIA, *Monthly Energy Review*, May 2006, Table 2.1.

million gallons. Sales also fell in the Lower Atlantic and the New England portions of the East Coast dropping 47.0 and 4.3 million gallons respectively. Sales dropped by 35.0 million gallons in the Midwest, 28.2 million gallons in the Gulf Coast, and 31.5 million gallons in the West Coast.

On a regional level, distillate sales for oil company use increased sharply in the Midwest, up by 23.4 million gallons. In the Rocky Mountains District, where a significant increase in natural gas exploration efforts, especially in Wyoming and Colorado occurred, oil company use more than doubled, increasing by 96.3 million gallons. Sales in the Gulf Coast increased by 47.1 million gallons while sales in the West Coast increased slightly, up by 1.3 million gallons. Not all areas of the country experienced increased usage, in the East Coast District oil company use dropped by 4.2 million gallons. However, the drop in overall volume in the East Coast masks the fact that sales in the Lower Atlantic Subdistrict increased by 3.3 million gallons.

### Residual Fuel Oil

Despite the strength of the economy and continued strong sales for vessel bunkering fuel, overall sales of residual fuel oil fell by nearly 3.2 billion gallons (23.6 percent) from the level attained in 2005. The drop in sales to 10.3 billion gallons was the largest drop in sales of residual fuel oil since 2002 when sales fell by nearly 3.3 billion gallons and resulted in total sales of residual fuel oil reaching the lowest point since EIA began tracking the data.<sup>15</sup>

Sales of residual fuel oil plunged in large measure as the result of the drop of 3.3 billion gallons (56.5 percent) in sales for the generation of electricity. However, sales fell in most other sectors as well, sales declined to the commercial and industrial sectors by 241.2 million gallons (33.5 percent) and 218.8 (13.1 percent) respectively. Sales to the military fell by 17.6 million gallons (59.5 percent). Sales grew only in the vessel bunker sector where an increase of 575.0 million gallons (11.1 percent) occurred. The increase in the sales of bunker fuel surpassed the increase of 488.1 million (10.4 percent) in 2005.

Sales for the generation of electricity were adversely affected by the warmer than normal winter, the somewhat milder summer but especially by the changing relationship in the price of oil compared to that of natural gas. In 2005 prompted in part by the high price of natural gas and by supplier constrained natural gas availability following the hurricane related damage to production and distribution facilities, there is some evidence that concern over the supply of natural gas for use in the generation of electricity led to a increased dependence on oil and less emphasis on natural gas in at least one region of the country.<sup>16</sup> However, in 2006, while the price of residual fuel to the electric power sector increased by 12.9 percent the price of natural gas to the sector fell by 15.7 percent.<sup>17</sup> Consequently, rising prices coupled with lower price for a major competing fuel and the warmer than normal winter contributed to the drop in the use of fuel oil to generate electric power.

Sales of residual fuel to the commercial sector decreased in all districts of the country. Sales fell the most in the New England and Central Atlantic portions of the East Coast where sales fell by 106.3 million gallons and 93.4 million gallons respectively. Sales fell by 21.7 million gallons in the Midwest. Sales fell by small amounts in the Gulf Coast, Rocky Mountains and West Coast Districts, where a total of only about 1.8 million gallons was sold.

Sales to the industrial sector decreased in most districts of the country. Sales fell all along the East Coast, falling the most in the Lower Atlantic, where they dropped by 202.8 million gallons. Sales increased in the Gulf Coast, where they were up by 29.9 million gallons. Sales were also up in the West Coast, where they nearly doubled increasing by 11.8 million gallons.

Unlike 2005, when sales of residual fuel oil to the military slipped by just 2.1 percent, in 2006, sales to the military at the national level fell by 59.5 percent. Sales fell in all districts of the country with the exception of the Rocky Mountains where sales increased by 1.2 million gallons.<sup>18</sup>

At the national level, sales of residual fuel for oil company use decreased by 8.8 million gallons, a decrease of 11.9 percent. Although sales dropped slightly in New England and the Lower Atlantic of

<sup>15</sup> For details please see: <http://tonto.eia.doe.gov/dnav/pet/hist/mreupus1A.htm>.

<sup>16</sup> In October 2005, ISO New England approved the 2005 Regional System Plan that among other provisions called for the diversification of the fuel mix for the region, including the conversion of more than 1,000 megawatts of gas-only fired generation to dual fuel capability by the winter of 2009-2010. See ISO New England, 2005 Regional System Plan, October 20, 2005.

<sup>17</sup> EIA, *Monthly Energy Review*, May 2007, Table 9.1.

<sup>18</sup> No sales of residual fuel to the military were recorded the Rocky Mountains in either 2001 or 2002.

the East Coast, sales plunged in the Central Atlantic where they dropped by just under 30 percent. Sales increased only in the Rocky Mountains, by 1.3 million gallons, where efforts to find and develop oil and especially natural gas were concentrated.

Although sales of residual fuel oil plunged in 2006, they had increased in each of the past three years and this difference underscores the fact that a new dynamic has entered the market. Whenever weather and high prices for competing fuels provide the incentive for fuel switching, larger customers in the industrial, commercial and especially the electric power sectors may take advantage of the situation and switch temporarily to oil.

For residual fuel oil, although the overall trend has been down, fluctuations in the amount of fuel sold remain likely to occur whenever interruptible gas contracts take effect during the coldest winter periods and whenever price differentials make switching attractive. The fluctuations can occur either in the short-term or when prolonged higher prices of natural gas make fuel switching attractive for the relative few with the ability to switch.

Although the long-term trend toward lower sales of residual fuel continues to affect the market, with long-term high-priced natural gas, some industrial companies and particularly some utilities have switched some units to fuel oil on a longer term basis than simply reacting to seasonal price spikes. In addition, there is some evidence that there is concern regarding the increasing dependency on natural gas for the generation of electric power, which may lead to a greater degree of fuel diversification and provide some stimulation to the sale of residual fuel oil for the generation of electric power.

Nonetheless, the principle reasons for the changing relationship remain, changing crude oil specifications, enhanced refinery sophistication resulting in increased production of gasoline and distillate at the expense of production of heavier products such as residual fuel oil, environmental constraints and restrictions on fuel oil use, and the availability of abundant relatively inexpensive natural gas have contributed to a diminished use of residual

fuel oil in the production of electric power.<sup>19</sup>

## **Kerosene**

Nationally, sales of kerosene also fell in 2006, countering the growth in each of the previous three years. Total sales of kerosene fell to 823.0 million gallons, a drop of approximately 247.2 million gallons (23.1 percent). Sales fell to all energy use sectors with the largest drop occurring in the residential sector where sales fell by 129.3 million (20.8 percent).

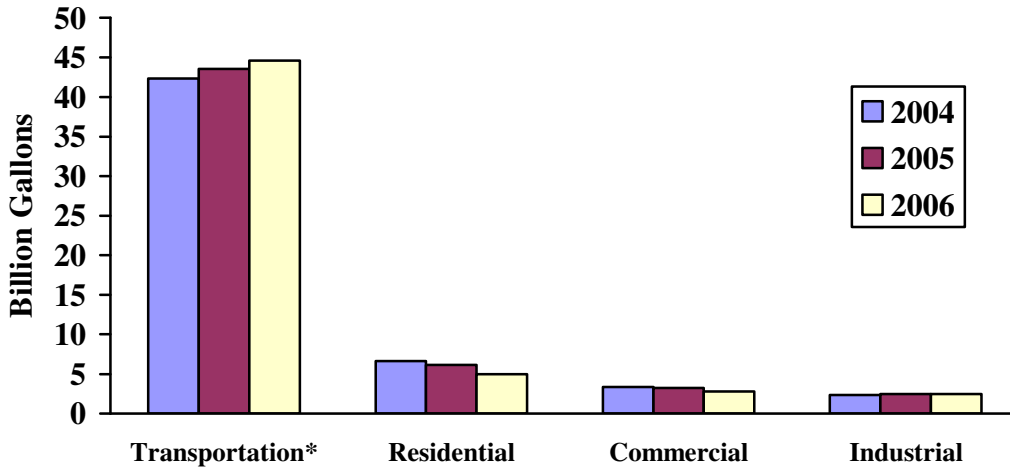
Sales to the residential sector fell in all sections of the country with the exception of the West Coast. The drop in sales was greatest in the East Coast, where the use of kerosene for home heating is concentrated and consequently where the impact of the milder than normal winter had the greatest impact on sales. Sales fell in all three subdistricts of the East Coast dropping by 116.6 million gallons. This drop accounted for fully 90 percent of the drop nationally. In the West Coast, the only region of the country where sales grew, the increase was 7.4 million gallons.

Sales to both the commercial and industrial sectors fell in most districts. Commercial sales were essentially unchanged in the Gulf Coast; sale grew by about 5.8 million gallons in West Coast. Nationally, industrial sales dropped by 64.9 million gallons (24.3 percent). Sales increased only in the Gulf Coast, and there they increased by 3.0 million gallons.

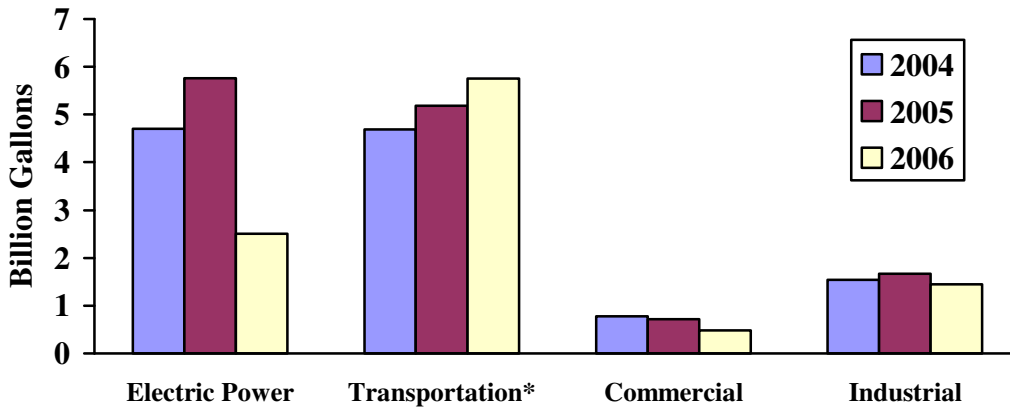
<sup>19</sup> It should be noted that the ability to increase production of light higher value products does not typically mean that refineries with upgraded processing capacity no longer possess the ability to produce heavier products such as residual fuel; rather, the economics involved dictate the production of the higher value products. Due to the divestiture of many electric power generation facilities, changes in fuel use and plant operations also contributed to the decline of residual fuel oil. For example, operators of these merchant plants blend fuels to achieve greater efficiency and to lower emissions of dirtier fuels (oil blended with natural gas and even oil and coal). When it is advantageous, the operators also may purchase power rather than generate electricity and re-sell the fuel.

**Figure HL1. U.S. Sales of Distillate and Residual Fuel Oils by Energy Use, 2004-2006**

### Distillate Fuel Oil



### Residual Fuel Oil

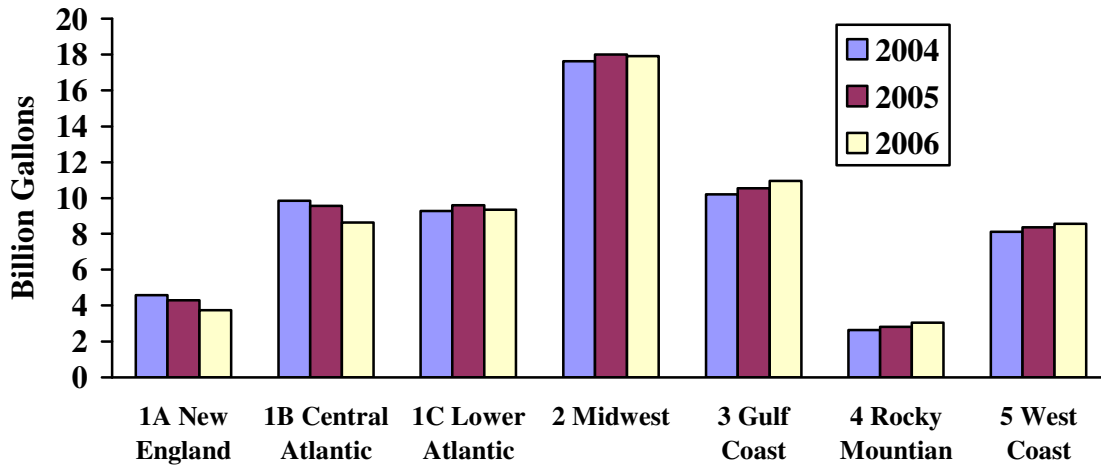


\*For distillate fuel oil, transportation use comprises railroad, vessel bunkering, and on-highway diesel energy use categories. For residual fuel oil, transportation use comprises vessel bunkering energy use category.

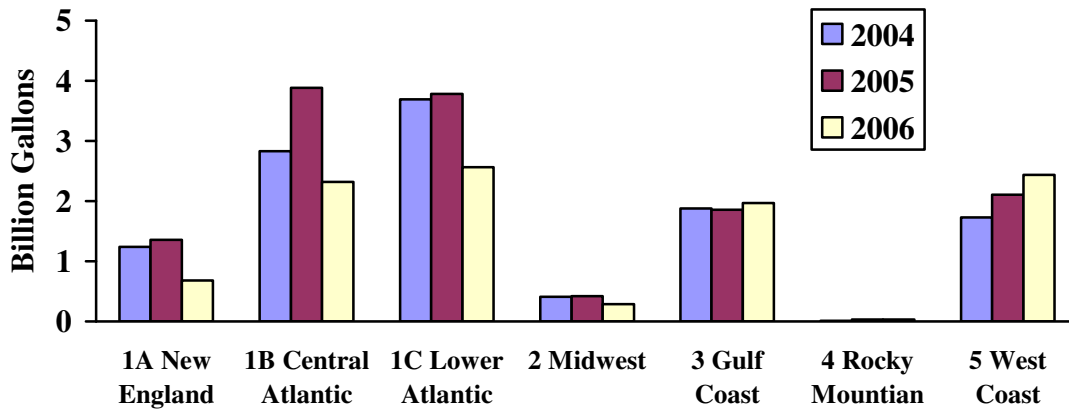
Source: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 2005 and 2006.

**Figure HL2. Volume Distribution of Distillate and Residual Fuel Oils by PAD District, 2004-2006**

### Distillate Fuel Oil



### Residual Fuel Oil



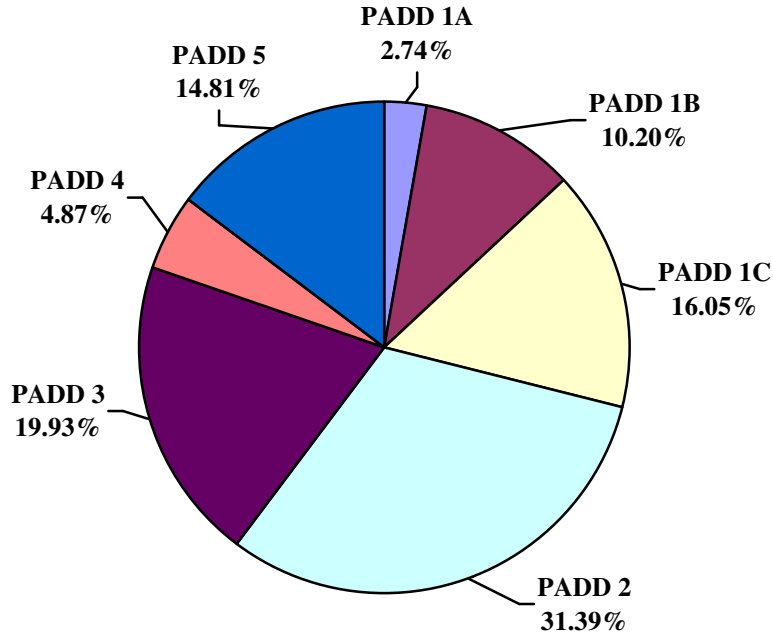
\*Residual fuel oil sales in PAD District 4 are too small to appear in the graph.

Source: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 2005 and 2006.

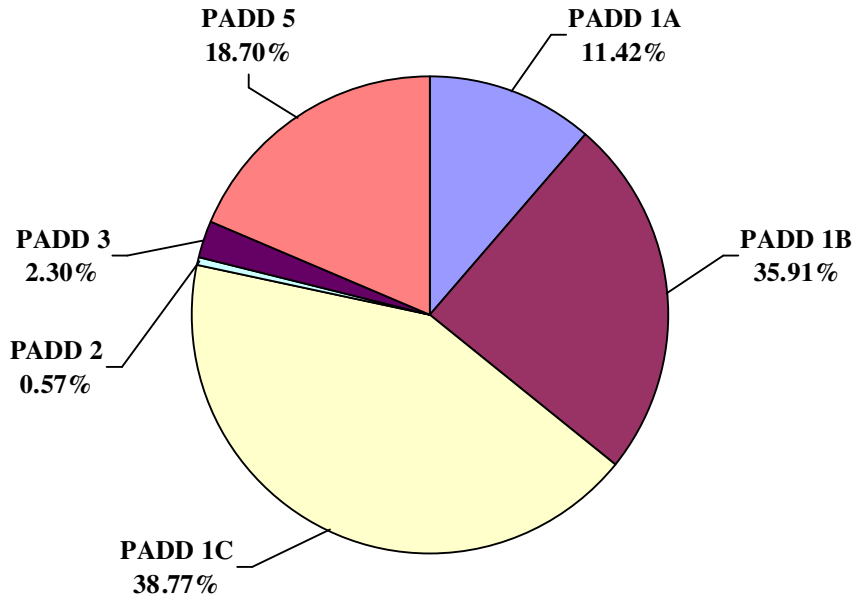


**Figure HL3. Distillate and Residual Fuel Oil Sales for Selected Energy Use Categories by PADD District, 2006**

**Distillate: Transportation**



**Residual: Electric Power**



\*Residual fuel oil sales in PAD District 4 are too small to appear in the graph.  
 Source: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 2006.