Highlights

Sales of Fuel Oil and Kerosene in 2007

In 2007, overall sales of fuel oil and kerosene totaled more than 74.4 billion gallons, an increase of 1.5 percent above the level set in 2006, but still below the record of nearly 77.7 billion gallons set in 2005. Distillate sales increased by slightly more than one billion gallons, recovering from the downturn of the previous year to 63.2 billion gallons, the highest total since 2004. Residual fuel oil sales increased by more than 430 million gallons over the level attained in 2006. Nonetheless, because of the plunge in sales of more than 3 billion gallons that occurred in 2006, the 2007 total remained well below the level of sales achieved in 2005. Kerosene sales fell sharply for the second year in a row, dropping 40 percent to the lowest level in more than 25 years.

The sales of residual fuel oil in 2007 accounted for 14.4 percent of total sales, the second lowest share of total fuel oil and kerosene sales since EIA began collecting data. The relatively small increase in sales of residual fuel oil, coupled with the drop in sales of kerosene, resulted in distillate fuel oil sales accounting for 85.0 percent of total sales. This exceeds the previous highest share of total sales set in 2006, when distillate sales accounted for 84.9 percent of total fuel oil and kerosene sales. Sales of kerosene made up just 0.7 percent of total sales, compared 1.1 percent in 2006.[1]

Distillate Fuel Oil

In 2007, distillate sales increased, countering the downturn of the previous year and returning to the long-term trend of rising sales that has occurred in 12 of the past 15 years.[2] The increase of 1.02 billion gallons (1.6 percent) was one of the smallest increases of the past 15 years; nonetheless it represents nearly 90 percent of the average increase in distillate sales since 1990.[3] Although, sales of distillate fuels to the residential, construction, electric

Table HL1. Volume Distribution of Distillate and Residual Fuel Oils, 2006 and 2007

Energy Use	2007 Distillate		2006 Distillate		2007 Residual		2006 Residual	
	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share
Residential	5,142	8.1	4,985	8.0	—	—	—	—
Commercial	2,719	4.3	2,809	4.5	481	4.5	479	4.7
Industrial	2,467	3.9	2,464	4.0	1,187	11.1	1,452	14.1
Oil Company	775	1.2	637	1.0	44	0.4	65	0.6
Farm	3,203	5.1	3,261	5.2	—	—	—	—
Electric Power	670	1.1	656	1.1	2,647	24.7	2,506	24.4
Railroad	3,635	5.8	3,552	5.7	—	—	—	—
Vessel Bunkering	1,924	3.0	1,903	3.1	6,327	59.1	5,754	56.0
On-Highway	39,802	63.0	39,118	62.9	—	—	—	—
Military	363	0.6	329	0.5	18	0.2	12	0.1
Off-Highway	2,512	4.0	2,479	4.0	—	—	—	—
Other	0	0.0	0	0.0	3	0.0	6	0.1
Total	63,211		62,192		10,706		10,274	

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 2003-2007. On-Highway Diesel data are Federal Highway Administration statistics of highway special fuels use.

[1]Numbers may not sum to 100 percent due to rounding.
[2] The drop of 972 million gallons was approximately 40 percent larger than the 588 million gallon fall in sales that took place in 2001 but only about 60 percent the size of the 1.6 billion gallon drop in 2004.
[3]The average increase during the period 1991-2007 was 1.12 billion gallons.

power and transportation energy use sectors increased, sales to commercial and farm energy use sectors, fell in comparison to the previous year.

Considerable growth in transportation dominated the increases in total distillate sales. Sales to transportation jumped by 786 million gallons, the growth was due to the increase of more than 683 million gallons in sales to the on-highway diesel energy use sector. Sales to the residential energy use sector also increased by 156.8 million gallons (3.2 percent) and sales to the oil company energy use sector increased 21.7 percent, a jump of 138.2 million gallons. Declining sales in the commercial and farm energy use sectors reflect at least in part warmer than normal winter conditions.

Despite higher energy prices in 2007, economic conditions as measured by Gross Domestic Product (GDP), a prime measure of the state of the economy, continued to improve. GDP measured in constant dollars grew at a rate of 2.2 percent, somewhat slower than 2006's increase of 2.6 percent. Spending on new construction in the commercial and industrial energy use sectors registered the largest increase in more than a decade (more than 19 percent), while spending on new housing decreased by 18 percent. Despite an increase in the production of durable goods of approximately 2.6 percent and an increase of 1.6 percent in manufacturing, the industrial utilization rate was essentially unchanged, increasing just 0.1 percent.[4] The unemployment rate was unchanged from 2006, remaining at 4.6 percent, the lowest rate since 2000.[5]

Unlike 2005 when Hurricanes Katrina and Rita brought significant damage to oil infrastructure and production facilities, there were no major weather-related problems during the year. Nonetheless, weather as always was a factor in shaping demand for distillate fuel. Although, the winter of 2007 was warmer than normal, it was cooler than in 2006 and helped boost sales to the residential home heating market. This particularly occurred in the New England and Middle Atlantic regions of the East Coast, where heating oil sales are concentrated.[6] Distillate sales to the residential energy use sector increased by more than 215 million gallons while falling elsewhere in the country.

In addition, the summer of 2007 was both warmer than the previous year and considerably warmer than normal. Consequently, demand for distillate fuel to meet peak summer generation loads was somewhat higher than it had been in 2006.[7] Although sales at the national level increased by approximately 13.6 million gallons (2.1 percent), the increase was concentrated in the Midwest.

Weather always plays a significant role in agriculture, and at the national level, despite strong production figures for a number of important crops, distillate sales dropped in the farm energy use sector by 58.5 million gallons (1.8 percent). However, at the regional level results were mixed. Sales in the Midwest and Rocky Mountain portions of the country, stretching from the Gulf Coast through the farm belt, to the Great Lakes and West to the Rocky Mountain increased more than 70 million gallons. In the farm belt, the Midwest, sales were up by more than 31 million gallons. Sales increased by nearly 20 million gallons in both the Gulf Coast and Rocky Mountain as well. In the remainder of the country drought conditions adversely affected crops in both the West Coast and East Coast where sales dropped 97 million gallons and 20 million gallons respectively.

Among the leading crops, corn, wheat, and potatoes increased while soybeans and cotton production were lower than in 2006. Corn production boosted by the requirement to add ethanol to gasoline was "the second highest on record, behind 2004, while production is the largest on record as producers harvested the most corn acres for grain since 1933".[8]

Distillate sales for the oil company energy use sector surged, as higher energy prices spurred exploration and development activities, sales increased nationally by more than 20 percent. The number of drilling rigs

[4] *Economic Indicators,* April 2008, Washington D.C. U.S. Government Printing Office, p 17. (Industry production indexes, 2000 = 100).

[5] *Economic Indicators,* April 2008, p 12. (Note, data apply to persons age 16 and over.)

[6] The U.S. is divided into 5 Petroleum Administration for Defense Districts (PADD). PADD 1, East Coast, PADD 2, Midwest, PADD 3, Gulf Coast, PADD 4, Rocky Mountain, and PADD 5, West Coast. PADD 1 is broken into three subdistricts PADD 1A, New England, PADD 1B, Central Atlantic, and PADD 1C, Lower Atlantic.

[7] 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.

[8] Department of Agriculture, National Statistics Service, *Crop Production 2007 Summary,* January 2008, page 80.

in operation, as one measure of the increased activity, went up 7.3 percent over 2006.[9] Although, sales increased most in the Gulf Coast and Western regions where oil and gas production is concentrated, sales went up in all five regions for the first time in more than a decade.

The growth in transportation was led by the increase sales to the on-highway diesel energy use sector in all parts of the country with the exception of the Lower Atlantic. At the national level, distillate fuel sold to the railroad energy use sector increased by 82 million gallons. However, regionally sales increased only in the Gulf Coast, Rocky Mountain and West Coast. Sales of the final component of transportation for the vessel bunkering energy use sector were mixed at the regional level going up in the Midwest, West Coast and Central Atlantic, while declining in the Gulf Coast, New England and Lower Atlantic. Overall sales increased by nearly 21 million gallons.

In 2007, sales to the off-highway energy use sector increased by 33.8 million gallons, up approximately 1.4 percent. This reflects an increased volatility in this market segment where in 2006 sales plunged by 477 million gallons, but in 2005 sales increased by 208.6 million gallons accounting for nearly 25 percent of the overall increase in distillate sales. Sales increased only in the Midwest and Gulf Coast, 88.5 million gallons and 33.0 million gallons respectively.

Nationally, sales to the commercial energy use sector fell in most regions of the country dropping 90.1 million gallons (3.2 percent). Sales dropped in both the Central Atlantic and Lower Atlantic, falling 38.3 and 77.2 million gallons respectively. Sales also fell in the Midwest, Rocky Mountain, and West Coast. The only increases in sales took place in the New England and Gulf Coast. The sales increase in New England was at least in part the result of a winter that was nearly 12 percent colder than in 2006.

Sales of distillate fuel oil to the industrial energy use sector were essentially unchanged, despite a small increase in total industrial production of 1.6 percent, which at least to some extent offset a slight drop nationally in total energy consumption by 0.2 percent. Sales grew by just 3.2 million gallons (0.1 percent).[10] On a regional basis, sales of distillate were mixed, down in some regions and up in others. Although, overall sales decreased in the East Coast, sales increased in the Lower Atlantic, growing by 23.8 million gallons. Sales also increased in the Midwest, Rocky Mountain and West Coast by 8 millions gallons, 21 million gallons and 29 million gallons respectively. Sales in both the New England and Central Atlantic fell, dropping 2.3 million gallons and 45.5 million gallons respectively. In the Gulf Coast, sales also decreased, falling by 30.9 million gallons.

At the national level, for the second year in a row, distillate sales to the military energy use sector increased, going up by 35.3 million gallons (10.8 percent). On a regional basis, sales fell in the Midwest, Gulf Coast, Rocky Mountain and Lower Atlantic. The largest decline took place in the Gulf Coast where sales dropped 42.5 percent. Sales increased the most in the West Coast where they went up 43.4 percent.

Residual Fuel Oil

Continued strong sales to the vessel bunkering and electric power energy use sectors pushed sales of residual fuel higher. Overall sales of residual fuel oil increased by nearly 433 million gallons (4.2 percent) over the level reached in 2006. Unlike 2006, when despite strong sales to the vessel bunker energy use sector sales of residual fuel oil fell precipitously. In 2007, sales declined in the industrial, oil company and all other energy use sectors. By far the largest increases in sales were to the vessel bunkering and electric power energy use sectors. Sales to the vessel bunker energy use sector jumped by 573 million gallons boosting sales to the highest total since 2000 (6.3 billion gallons). The next largest increase was 141 million gallons to the electric power energy use sector. There were also small increases in sales to the commercial and military energy use sectors up 2.2 million gallons and 5.7 million gallons respectively.

Over the past decade, overall sales of residual fuel oil have fallen by more than 14 percent. However, despite this downward trend, the period has been characterized by great volatility with precipitous swings in the volume of sales, particularly with respect to the electric power energy use sector. Beginning in 1998, annual sales have fallen by at least one billion gallons three times but have increased by at least one billion gallons four times. Sales fell by 1.4 billion gallons in 1999, 2.1 billion gallons in 2002, and 3.3 billion gallons in 2006. Sales increased by 1.8 billion gallons in 1998, 1.3 billion gallons in 2001, 1.7 billion gallons in 2003, and 1.1 billion gallons in 2005. This extreme

[9]Hughes Christensen, Rotary Rigs Running by State 2007, Monthly Averages, http://files.shareholder.com/downloads/BHI/459516224x0x174957/871CD623-AD95-425D-BC66-93D6BFD80DFA/Monthly_Avg_1992-2007.xls

[10]EIA, *Monthly Energy Review*, May 2008, Table 2.1.

volatility is a reflection of changes in the electric power energy use sector, the pricing structure of both residual fuel oil and competing fuels, and weather conditions, as well as other factors affecting the production and sales of residual fuel in general.

For example, 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.[11] However, in 2006, while the price of residual fuel to the electric power energy use sector increased by 12.9 percent the price of natural gas to the sector fell by 15.7 percent.[12] Consequently, rising prices coupled with lower price for a major competing fuel and the warmer than normal winter contributed to the very large drop of 3.3 billion gallons in 2006. In 2007, the cooler winter early in the year, helped boost sales and offset at least in part the rising prices particularly in November and December. In addition, although the price of residual fuel used by electric utilities in 2007 increased by 7.9 percent on an annual basis while the price of natural gas went up only by 2.3 percent, that compares to the situation in 2006 when residual fuel oil increased by 11.2 percent and natural gas prices dropped by 15.5 percent compared to 2005.[13] Consequently, sales to electric power sector increased by 5.6 percent compared to a drop of 56.5 percent in 2006.

For residual fuel oil, although the overall trend is 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. 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.

Over the past few years, 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 decline in sales of residual fuel oil 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 general and in the production of electric power in particular.[14]

Kerosene

For the second year in a row, kerosene sales dropped sharply. Total sales of kerosene fell to 492.9 million gallons, plunging by 40 percent. The drop of 330 million gallons in 2007 combined with 247 million gallon loss in 2006 have reduced kerosene sales by 54 percent bringing them to the lowest total in more than 25 years. Sales of kerosene fell to all energy use sectors with the largest drop occurring in the residential energy use sector where sales fell by 166.2 million (33.8 percent).

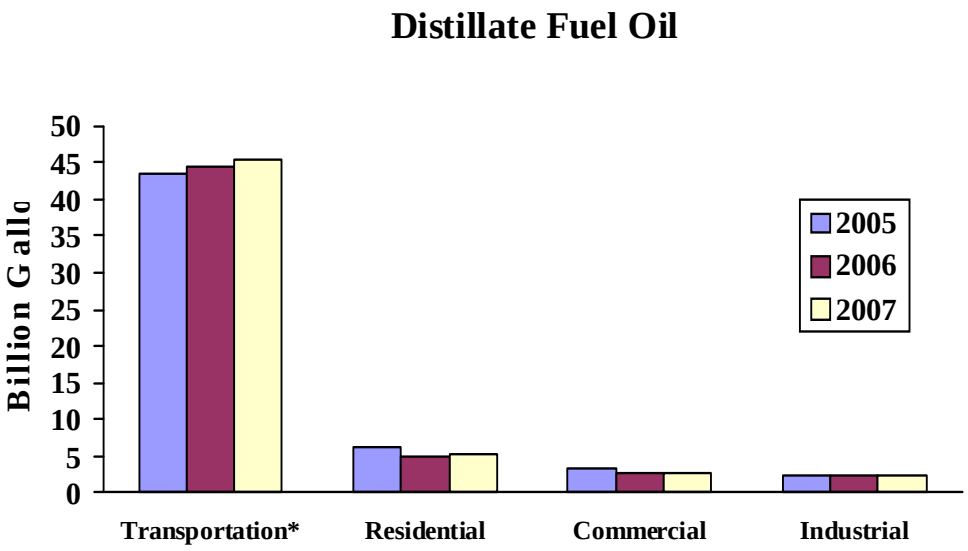
Sales to the residential energy use sector fell without exception in all regions of the country with the largest declines occurring in the East Coast. Unlike 2006 when sales increased on the West Coast, sales there also fell dropping nearly 47 percent.

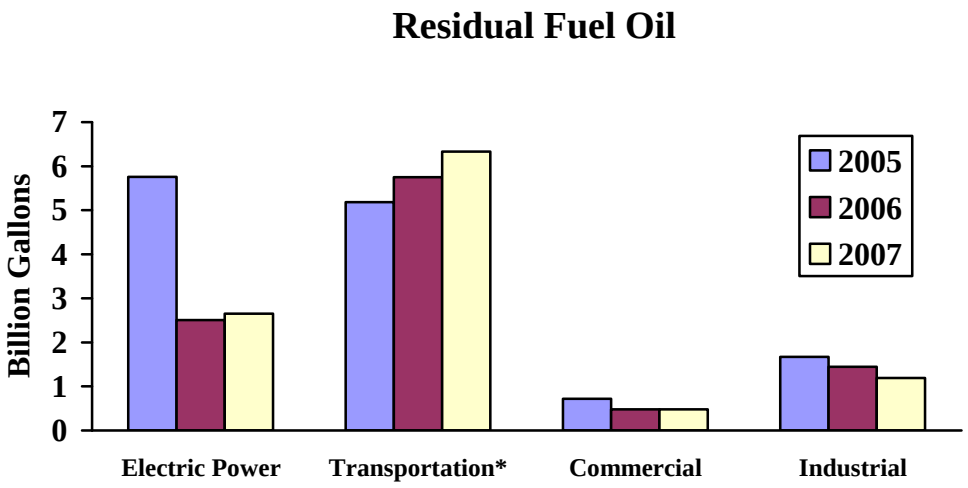
[11]In October 2005, ISO New England approved the 2005 Regional System Plan that among other provisions called for the diversification of the fuel mix for the region, including the conversion of more than 1,000 megawatts of gas-only fired generation to dual fuel capability by the winter of 2009-2010. See ISO New England, 2005 Regional System Plan, October 20, 2005.
[12]EIA, *Monthly Energy Review*, May 2008, Table 9.1.
[13]EIA, *Monthly Energy Review*, May 2008, Table 9.10.
[14]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.

Sales to both the commercial and industrial energy use sectors also fell in all regions of the country dropping by 39.5 percent and 56.4 percent respectively. In the commercial energy use sector, the largest drop in sales occurred in the Central Atlantic where sales went down by 41.2 percent (17.4 million gallons). Nationally, sales to the industrial energy use sector dropped by 114.2 million gallons with the largest drop taking place in the Gulf Coast. There sales plunged 63.6 percent (74.5 million gallons).

Sales to the farm energy use sector also fell in every region dropping by 36.7 percent nationally. The smallest decline on a percentage basis was in the Midwest where the principal farming states are located. Nonetheless, the drop in sales there of 17.4 percent (1.2 million gallons) equaled more than one fifth of the loss nationally.

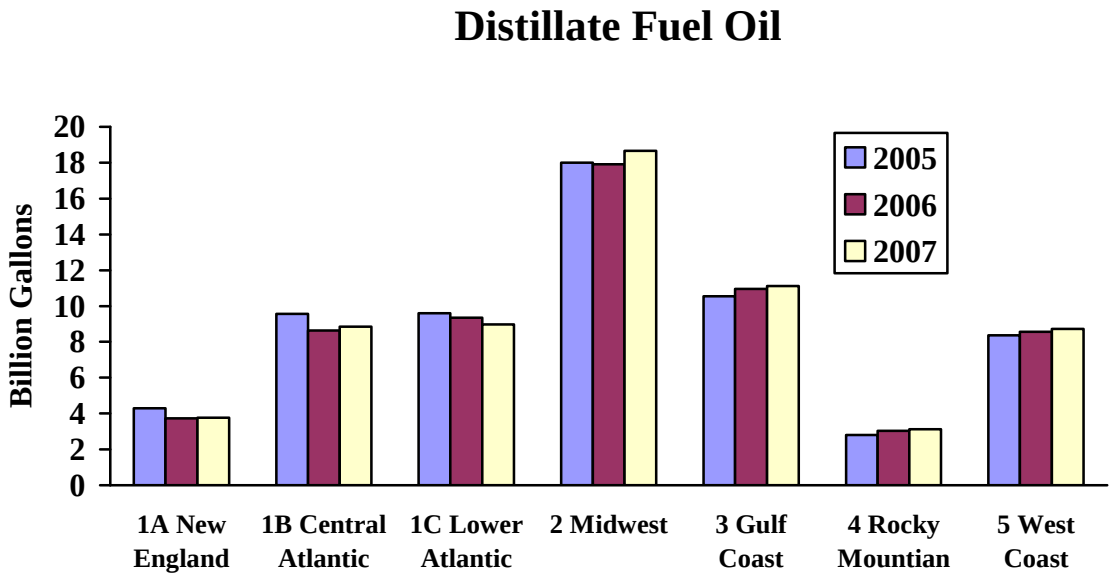
Figure HL1. U.S. Sales of Distillate and Residual Fuel Oils by Energy Use, 2005-2007

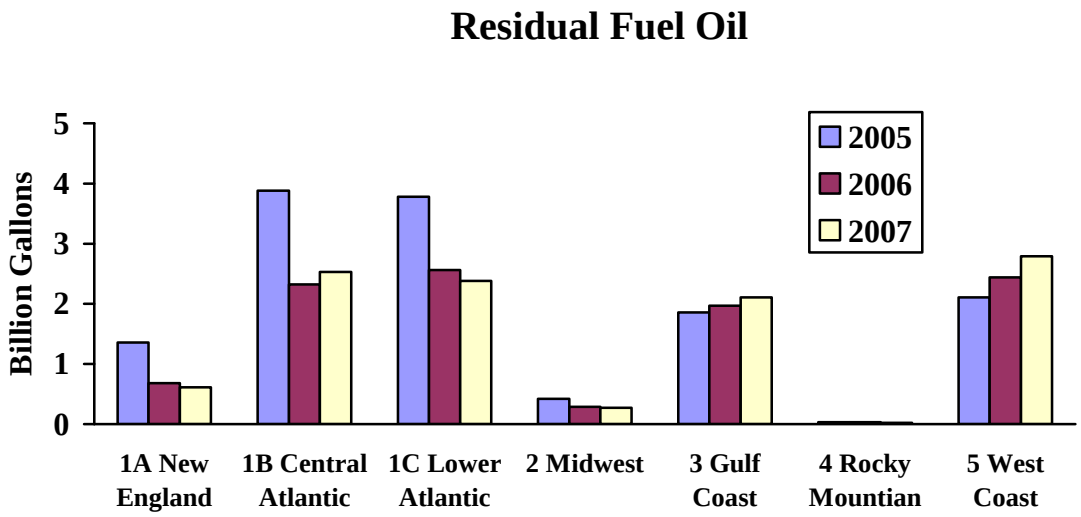




*For distillate fuel oil, transportation use comprises railroad, vessel bunkering, and on-highway diesel energy use categories. For residual fuel oil, transportation use comprises vessel bunkering energy use category.
Source: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 2005 and 2006.

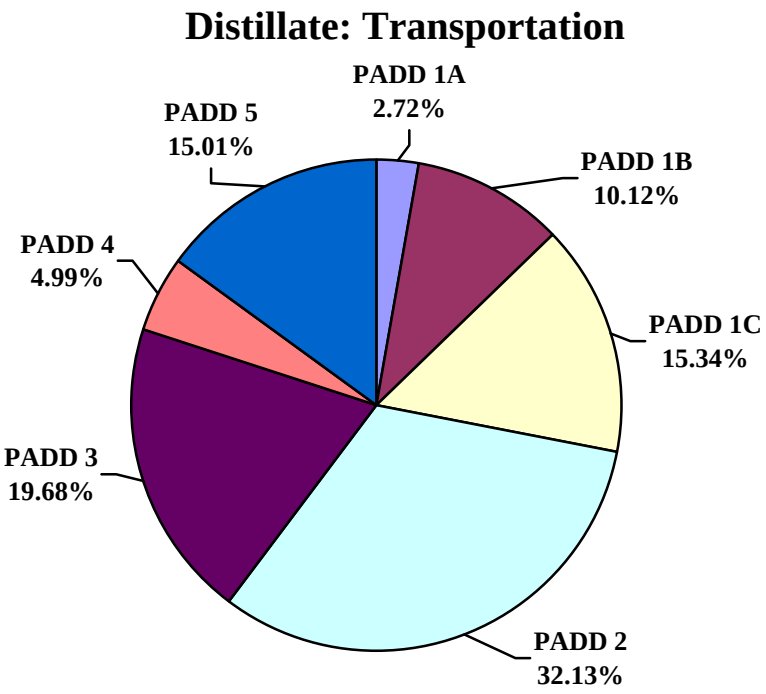
Figure HL2. Volume Distribution of Distillate and Residual Fuel Oils by PAD District, 2005-2007

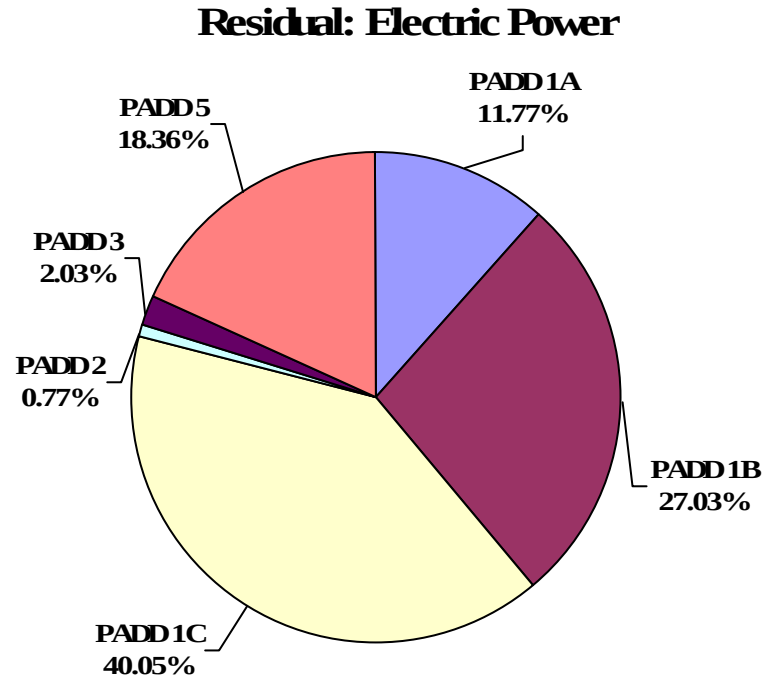




*Residual fuel oil sales in PAD District 4 are too small to appear in the graph.
Source: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 2005 and 2006.

Figure HL3. Distillate and Residual Fuel Oil Sales for Selected Energy Use Categories by PADD District, 2007





*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.