

Highlights

Sales of Fuel Oil and Kerosene in 1996

Distillate sales rose again in 1996, up 3.7 percent over 1995, propelled upward by an expanding economy. In contrast to 1995, residual fuel oil sales increased in 1996, the first gain since 1988. Residual fuel oil sales increased 7.6 percent over 1995. This shift in the trend of residual fuel sales was the consequence of extremely cold weather during the beginning of 1996 and competitive residual fuel prices toward the end of 1996.

Distillate Fuel Oil

Distillate sales went from 51.5 billion gallons in 1995 to 53.4 billion gallons in 1996 and experienced an increase in every category except commercial and military use. The critical factors affecting distillate sales in each of these categories were the economy, weather, and crude oil prices. Economic vitality had the most profound influence on distillate sales in the transportation sector.

The transportation sector, consisting of on-highway, vessel bunkering and railroad uses, continued to dominate distillate sales with 61.6 percent of total distillate sales. A strong economy, indicated by a 4.4 percent increase (in current dollars) in the Gross Domestic

Product (GDP), pushed distillate sales in the transportation sector up 5.0 percent in 1996. At 27.0 billion gallons, on-highway diesel sales increased 5.4 percent to 82.0 percent of distillate in the transportation sector and 50.5 percent of all distillate sales. On-highway sales went up because the demand for delivery of goods and services increased in 1996. Vessel bunkering and railroad use also both increased in 1996, rising 6.5 and .53 percent respectively. Sales of distillate to railroads increased slightly in 1996 to 3.4 billion gallons, up 18 million gallons. Due to respondent reporting errors in 1995 this increase is actually larger than it appears. Vessel bunkering increased as well to 2.5 billion gallons, an increase of 152 million gallons from 1995.

Despite a colder heating season, distillate sales to residential customers for home heating remained relatively unchanged from 1995. Residential use at 6.9 billion gallons was up only .7 percent in 1996. Approximately 12.9 percent of all distillate sales in 1996 were for residential use and 82.8 percent of those sales were in PAD District I. The principal reason for the consistency in sales was an increase in natural gas consumption stimulated by competitive pricing. While residential heating oil prices increased 10.7 percent in

Table HL1. Volume Distribution of Distillate and Residual Fuel Oils, 1995 and 1996

End Use	Distillate 1996		Distillate 1995		Residual 1996		Residual 1995	
	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share	Volume (million gallons)	Percent Share
Residential	6,910	12.9	6,860	13.3	--	--	--	--
Commercial	3,604	6.8	3,631	7.1	928	7.0	923	7.5
Industrial	2,289	4.3	2,239	4.3	2,089	15.7	1978	16.1
Oil Company	731	1.4	687	1.3	167	1.3	211	1.7
Farm	3,591	6.7	3,476	6.8	--	--	--	--
Electric	658	1.2	597	1.2	4,305	32.5	3262	26.5
Railroad	3,447	6.5	3,429	6.7	--	--	--	--
Vessel Bunkering	2,491	4.7	2,339	4.5	5,701	43.0	5,886	47.8
On-Highway	26,958	50.5	25,576	49.7	--	--	--	--
Military	454	0.8	462	0.9	56	0.4	51	0.4
Off-Highway	2,246	4.2	2,173	4.2	--	--	--	--
Other	0	0.0	0	0.0	10	0.1	7	0.0
Total	53,379	100.0	51,469	100.0	13,256	100.0	12,318	100.0

Sources: Energy Information Administration, Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report," 1995 and 1996.

1996, natural gas prices only increased 0.8 percent.¹ Heating oil prices remained high because the cold fall season in 1995 hindered the typical rise in stock levels. The high price of crude oil and persistent expectations that the price would drop helped maintain the low levels of distillate stock throughout the year.² Additionally, more efficient inventory management and a strategy of just in time inventorying also contributed to low stock levels. Diminishing residential distillate sales, however, were offset by a 6.9 percent increase in residential and commercial natural gas consumption.³ Residential natural gas should continue to curtail the heating oil share of the market as more existing homes convert to natural gas and the quantity of new gas home completions rises.

Commercial use distillate decreased .7 percent in 1996, which equates to a decrease of 27 million gallons. The largest decrease was in low sulfur diesel which decreased 111 million gallons or 9.3 percent in 1996. Decreased use of on-highway diesel by governments was the primary reason for this drop.

Distillate sales for industrial use increased 2.2 percent in 1996. In order to satisfy escalating demand, industrial use sales increased by 50 million gallons. A growing economy evidenced by an increase in manufacturing production and capacity utilization of 2.74 percent, contributed to the increase.⁴

Farm use of distillate at 3.6 billion gallons was up 3.3 percent in 1996. The principle reason for this increase was the total area planted (in principal crops) rising 8.3 percent.⁵ Some gain in fuel sales was due to an increase in the fuel requirements of those particular commodities planted and harvested. The area of corn and wheat planted increased 13.0 and 8.6 percent, respectively, and had the greatest impact on the increase in total area planted.⁶ In fact, the area planted for spring wheat was the most since 1936. The area planted for corn increased by 9 million acres and corn

is a fuel intensive commodity. The total area of corn harvested was 74 million acres and was the largest corn crop since 1985. The tremendous growth in the area planted for corn and wheat was offset moderately, however, by a 15.2 percent decrease in area planted for cotton.⁷

Off-Highway construction and other uses were up 3.4 percent in 1996 to 2.2 billion gallons, primarily because new private construction increased 4.3 percent.⁸ Any government use of fuel for construction is categorized under military or commercial end-use.

Oil company use was up 6.4 percent in 1996 due to an increase in drilling activities in the United States. The number of rotary rigs in operation increased by 7.8 percent in 1996, and the total footage drilled also climbed 22.5 percent.⁹ This growth resulted from the 26.3 percent increase in the price of crude oil in 1996 which motivated oil companies to increase their exploration and development expenditures.

Electric Utility sales increased 10.1 percent in 1996 to 658 million gallons, an increase of 60 million gallons. This increase was the result of a 3.3 percent increase in heating degree days and an increase in weather volatility over 1995.¹⁰ The severely cold weather during the initial few months of 1996 increased energy consumption and the demand for peak use diesel fired generation units. Historically, there is little demand for distillate fuel oil in warm or normal weather conditions.

Military distillate use dropped 1.6 percent in 1996 to 454 million gallons due to a decline in military activity and the expanded use of JP-8 fuel. JP-8 is a kerosene based jet fuel currently being used as a substitute for diesel in many military vehicles. By using this one standard fuel in all of its equipment, the military will vastly improve logistical efficiency, reliability, and mobility. Military distillate use should continue to dimin-

¹Monthly Energy Review (MER), June 1997, Table 1.7, p.13.

²Distillate Fuel Oil Assessment for Winter 1996-1997, Graig H. Cranston, EIA, p.7.

³Monthly Energy Review (MER), June 1997, Table 2.3, p.27.

⁴Economic Indicators, May 1997, Washington D.C. US Government Printing Office, p.17.

⁵Acreage planted figures come from the Annual Crop Summary, Agricultural Statistics Board, NASS, USDA, June 1996.

⁶ibid.

⁷ibid.

⁸Economic Indicators, May 1997, Washington D.C. US Government Printing Office, p.19.

⁹Monthly Energy Review (MER), August 1996, Table 5.1, p.82.

¹⁰Short-Term Energy Outlook, Third Quarter 1997, p.22.

ish as the military pursues this transition toward a single fuel force employing the more stable and reliable JP-8 fuel.

Residual Fuel Oil

In 1996, residual fuel oil sales in the United States increased for the first year since 1988. Residual fuel oil sales went from 12.3 billion gallons in 1995 to 13.3 billion gallons in 1996. This 7.7 percent increase was driven by a 31.9 percent increase in electric utility sales.

Vessel bunkering maintained its dominance by securing 43.0 percent of the residual fuel market, in spite of a decline in sales of 3.2 percent. PAD District V had the most substantial effect on this decrease with a loss of 14.4 percent in 1996. This decrease was due to a notable increase in exports to Asia where poor availability of residual fuel oil stimulated demand. While PAD District V witnessed a decrease in sales, more competitive prices spurred sales upwards slightly in PAD Districts I, II, and III. Throughout the majority of 1996, the U.S. Gulf maintained a favorable price advantage over Rotterdam compared to 1995 and this promoted the increase in sales. Overall, the decrease in sales of residual fuel oil was influenced by the unusually high demand for residual fuel in the utility market. Despite the decline in vessel bunkering sales, total residual fuel oil sales were propelled upwards by this increase in electric utility sales.

Electric utility sales accounted for 32.4 percent of all residual fuel oil sales, up from the 26.5 percent market share in 1995. Sales escalated by 1.0 billion gallons last year, rising from only 3.3 billion gallons in 1995 to 4.3 billion gallons in 1996. Three principle factors account for this dramatic shift upwards in sales. First, the harsh cold weather in the Northeast and Mississippi during the first quarter of 1996 elevated electric utility demand for residual fuel oil. When unusually cold weather struck Mississippi and froze gas pipes, some utilities had to increase their reliance on residual fuel oil. Then, Northeast Nuclear Energy was forced to shutdown its three Millstone plants in March of 1996 and their Connecticut Yankee plant in July because of safety violations. This substantial drop in nuclear power plants stirred demand for residual fuel oil. In Connecticut, residual fuel oil sales climbed 328 million gallons over 1995. Lastly, through November and December of 1996 natural gas prices rose 68 percent and competitive pricing of residual fuel oil encouraged electric utilities to use more residual fuel oil.¹¹

Industrial remained the third largest end use category for residual fuel oil sales of 2.1 billion gallons in 1996. Industrial use increased by 112 million gallons, a gradual increase of 5.7 percent. General increased demand for industrial goods had a direct effect on the increase. Like electric utility sales, this increase was also due in part to the low price of residual fuel oil compared to natural gas toward the end of 1996. Furthermore, as the year progressed and natural gas supplies decreased, companies with interruptible contracts were forced to switch to residual fuel oil.

Commercial use of residual fuel oil increased .57 percent in 1996 to 928 million gallons. Increased demand for heating in 1996 was the key reason for the increase. Although the number of apartment buildings and commercial facilities heated with residual fuel oil is declining, the cold weather increased overall demand.

Oil company use of residual fuel continued its decline in 1996 by dropping 20.8 percent from 211 million to 167 million gallons. As refineries adopt new technologies which reduce the amount of residual fuel produced, oil companies will continue to use less residual fuel oil for operations. The unusually high demand for residual fuel oil by utilities also contributed to the decrease.

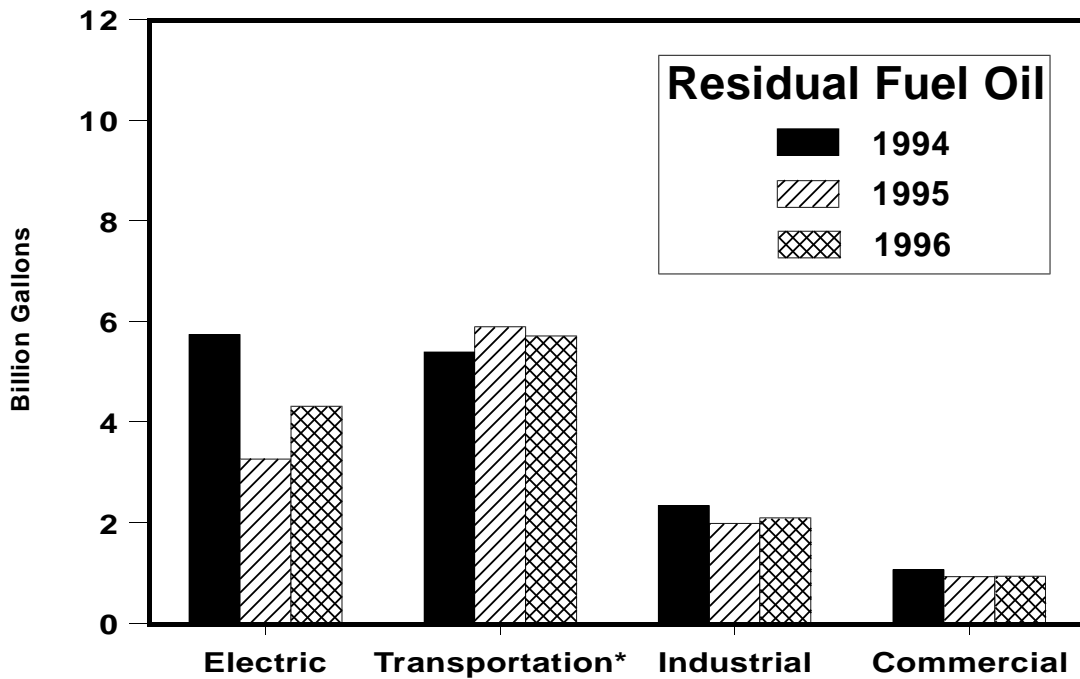
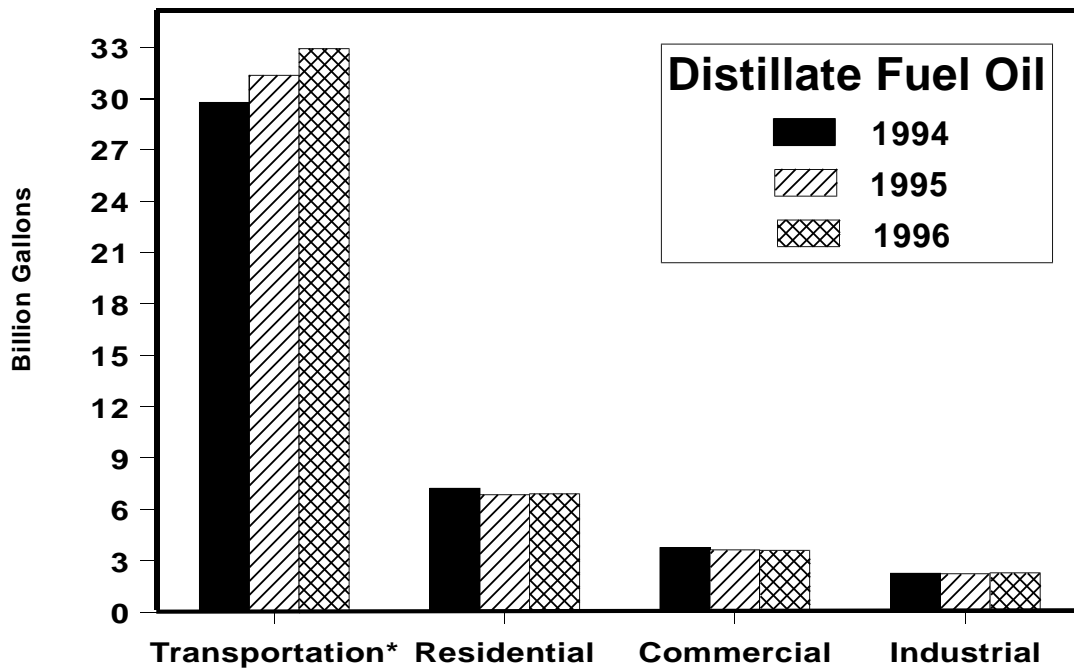
Military use of residual fuel oil increased 10.5 percent in 1996 to 56 million gallons, an increase of 5 million gallons. The greatest increases occurred in Texas and Hawaii as the military replenished residual fuel stock levels in those states.

Kerosene

Total U.S. kerosene sales increased 14.6 percent in 1996. Increases were observed in the residential, industrial, and farm use sectors. Residences continued to use the majority of kerosene, with 69.3 percent of all kerosene sales. At 658 million gallons, residential use increased 19.5 percent in 1996, primarily due to weather conditions throughout PAD District I. PAD District I dominated the residential sector with 80.7 percent of all residential kerosene sales and experienced a 20.4 percent increase in 1996. The greatest impact on the increase in kerosene sales, however, was experienced by the farm use sector. Kerosene sales for farm use increased 30.6 percent in 1996.

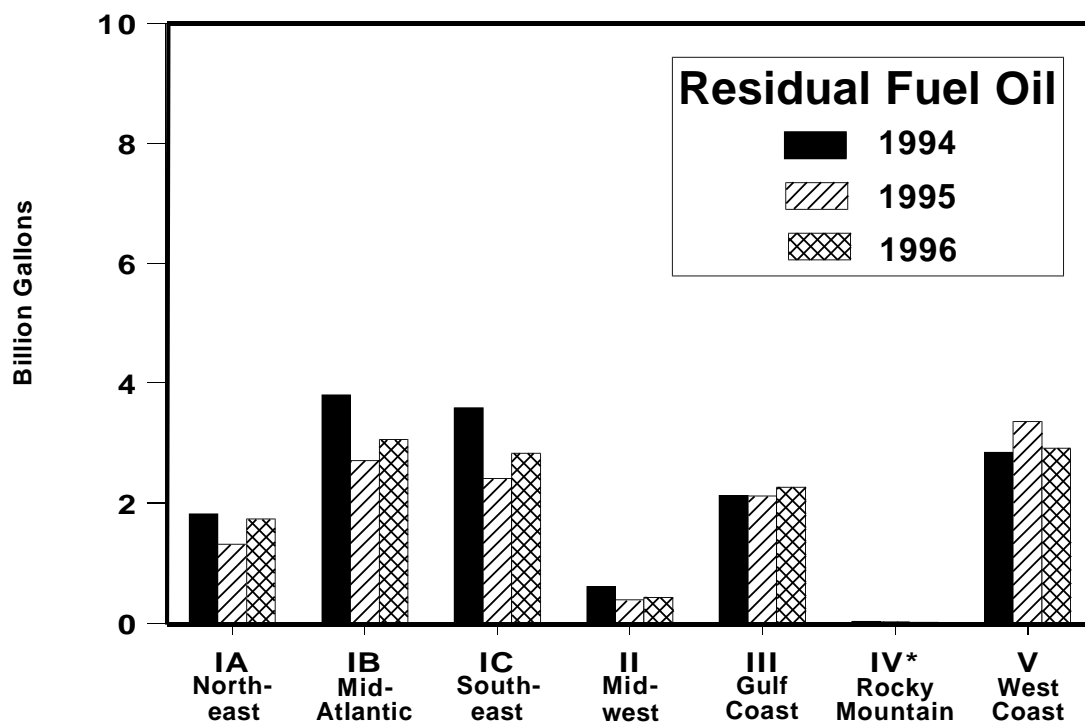
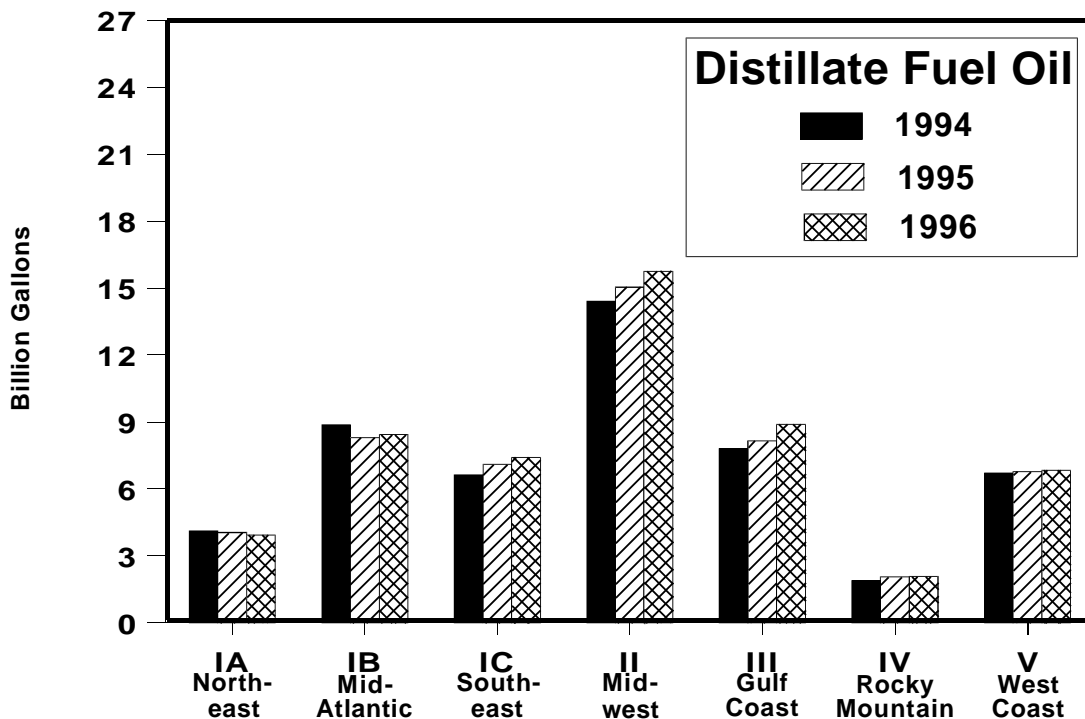
¹¹ *Natural Gas Monthly*, July 1997, Table 4., p.12.

Figure HL1. U.S. Sales of Distillate and Residual Fuel Oils by End Use, 1994-1996



*For distillate fuel oil, transportation use comprises railroad, vessel bunkering, and on-highway diesel end-use categories. For residual fuel oil, transportation use comprises the vessel bunkering end-use category.
 Sources: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 1995 and 1996.

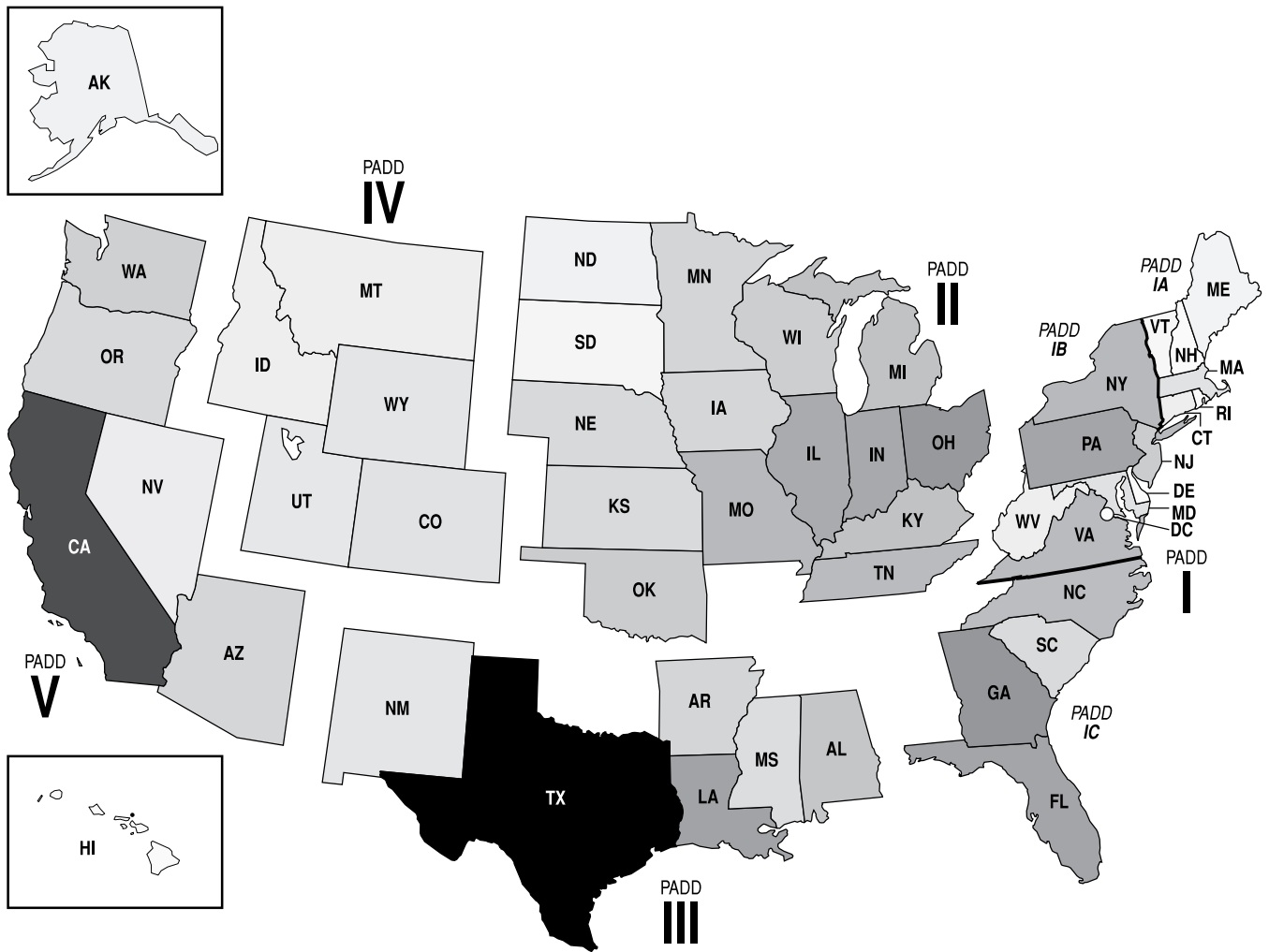
Figure HL2. Volume Distribution of Distillate and Residual Fuel Oils by PAD District, 1994-1996



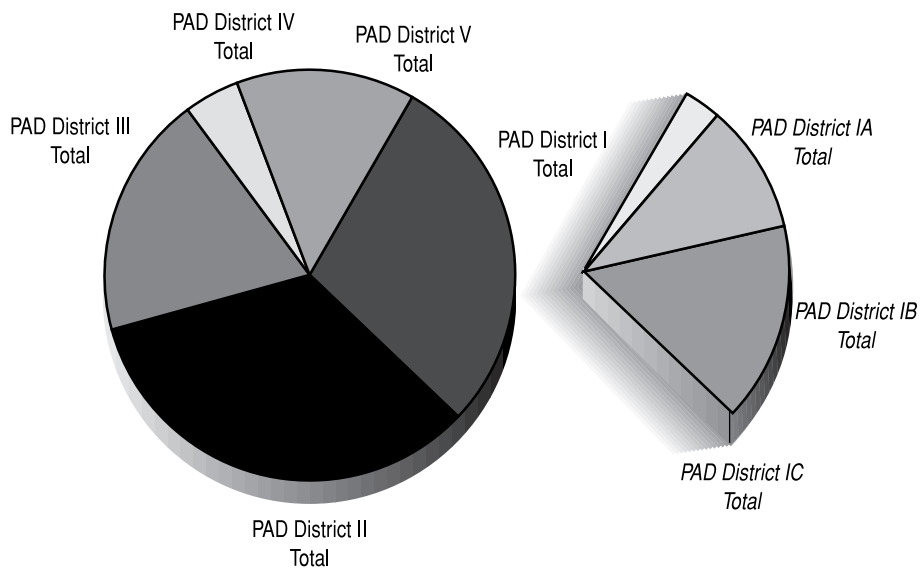
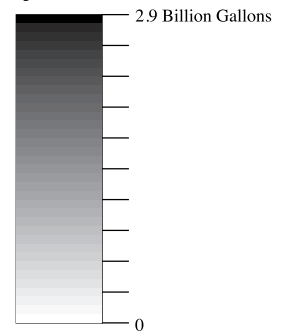
*Residual fuel oil sales in PAD District IV are too small to appear in this graph.

Sources: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 1995 and 1996.

Figure HL3. Distillate Sales for Transportation End-Use by PAD District and State, 1996

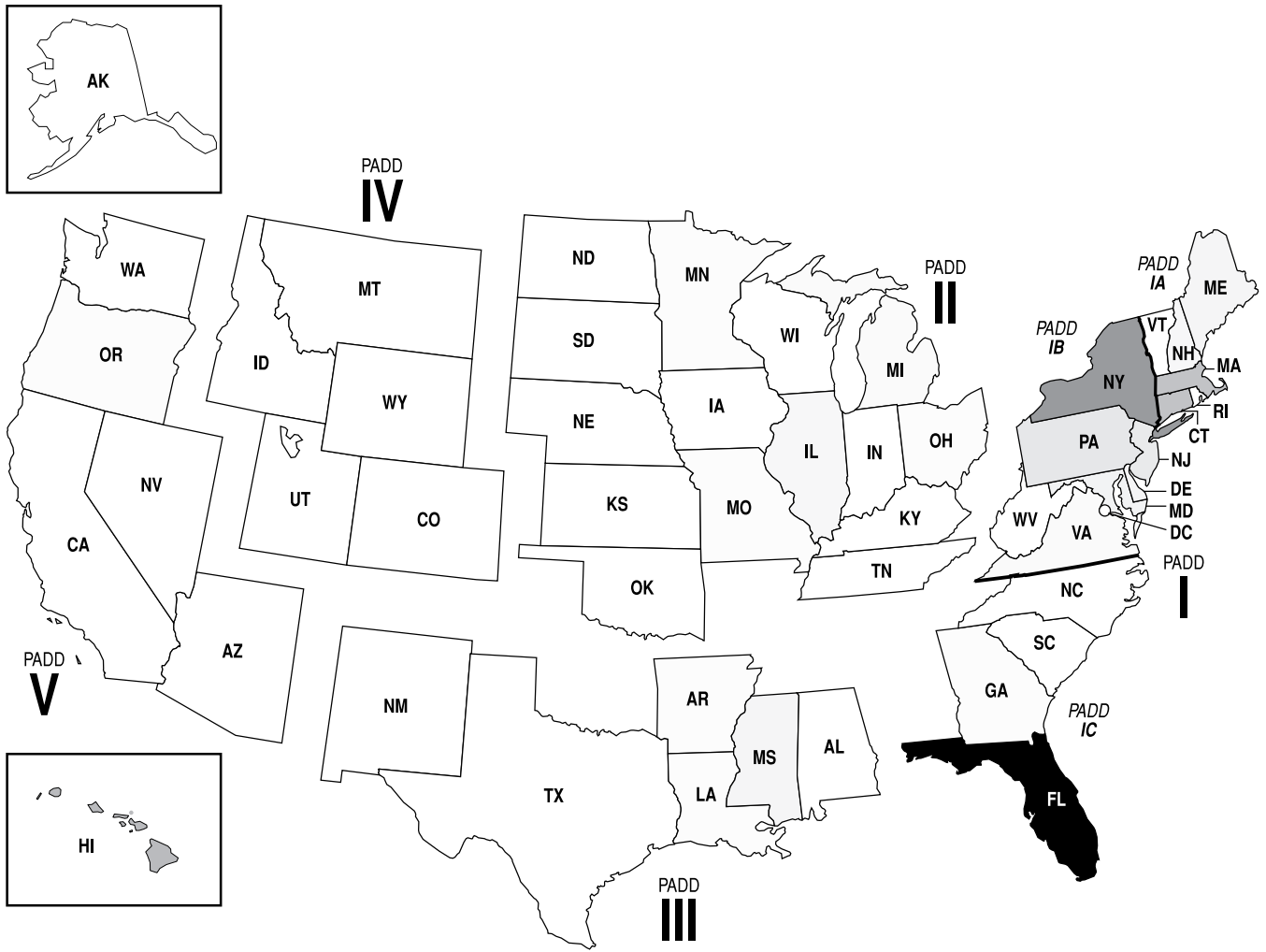


Shading Represents State Sales

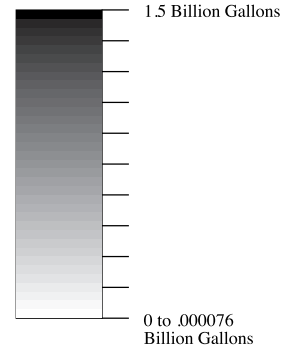


Sources: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 1996.

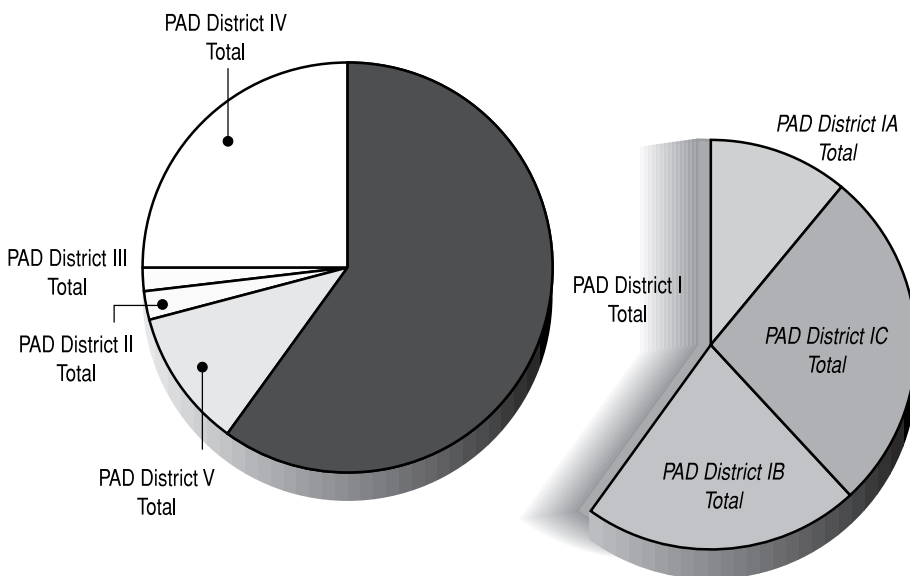
Figure HL4. Residual Fuel Oil Sales for Electric Utility End-Use by PAD District and State, 1996



Shading Represents State Sales



Residual fuel oil sales for some states are too small to appear in this graph.



Sources: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 1996.