

Highlights

Sales of Fuel Oil and Kerosene in 1998

Benefiting from continued robust economic growth, demand for distillate fuel increased in 1998 for the seventh consecutive year. Distillate sales increased 1.7 percent despite the fact that the winter was both warmer than normal and warmer than the previous year. Bolstered by strong sales of bunker fuel and surging sales to electric utilities, overall sales of residual fuel oil increased by 17.8 percent. However, aside from the upturn in bunker fuel and sales to utilities, sales of residual fuel oil declined across the board. This decline in demand for residual fuel oil points to the continuation of the downward trend in sales that has, with the exception of 1996, come to characterize the residual fuel oil market for the past several years.

Distillate sales remained predominate in the fuel oil market, accounting for 77.6 percent of total sales. However, as the result of the dramatic increases, residual fuel oil accounted for 20.7 percent of the total sales, the first time since 1994 that residual fuel oil sales exceeded 20 percent of total sales. The remaining 1.7 percent consisted of sales of kerosene.

Distillate Fuel Oil

Led by sales to the transportation sector, distillate sales continued to increase in 1998. Totaling 55.3 billion gallons, sales in 1998 reached an all-time high. Nonetheless, principally as the result of the milder than normal winter, the rate of growth in sales of distillates slowed somewhat to 1.7 percent (approximately 940 million gallons). This rate of increase equaled nearly two-thirds of the increase attained the previous year (2.7 percent or 1.5 billion gallons).

The transportation sector continued to dominate distillate fuel oil sales accounting for nearly two-thirds (65.0 percent) of total sales. In addition, the increase in sales of on-highway diesel accounted for more than 75 percent of the increases among those sectors where distillate sales went up. In large measure, the growth reflected continued overall economic strength of the country. Economic growth as measured by the change in gross domestic product (GDP) continued to increase

Table HL1. Volume Distribution of Distillate and Residual Fuel Oils, 1997 and 1998

End Use	Distillate 1998		Distillate 1997		Residual 1998		Residual 1997	
	Volume (million gallons)	Percent Share						
Residential	5,820	10.5	6,531	12.0	—	—	—	—
Commercial	3,233	5.8	3,315	6.1	715	4.9	790	6.3
Industrial	2,462	4.5	2,309	4.3	1,798	12.2	1,899	15.2
Oil Company	784	1.4	852	1.6	127	0.9	160	1.3
Farm	3,411	6.2	3,548	6.5	—	—	—	—
Electric	841	1.5	636	1.2	6,432	43.7	4,599	36.8
Railroad	3,180	5.8	3,278	6.0	—	—	—	—
Vessel Bunkering	2,595	4.7	2,574	4.7	5,620	38.1	5,010	40.1
On-Highway	30,150	54.5	28,614	52.6	—	—	—	—
Military	352	0.6	433	0.8	34	0.2	42	0.3
Off-Highway	2,477	4.5	2,276	4.2	—	—	—	—
Other	0	0.0	0	0.0	4	0.0	4	0.0
Total	55,305	100.0	54,366	100.0	14,730	100.0	12,504	100.0

Sources: Energy Information Administration, Form EIA-821, "Annual Fuel Oil and Kerosene Sales Report," 1997 and 1998.

at a rate essentially unchanged from the previous year (3.88 percent in 1998 versus 3.93 percent in 1997).¹ Sustained economic strength contributed in particular to increased sales of on-highway distillate needed to meet the increase in demand to deliver goods to markets and consumers.²

Distillate sales benefited from lower prices reflecting both falling crude oil prices and high levels of stocks. In particular, on-road use increased by more than 1.5 billion gallons compared to 1997. Distillate sales to the electric power sector also increased by more than 200 million gallons, benefiting from lower prices, the warmer than normal summer, and the need to meet air quality standards.

Undercutting much of the gains in the transportation and utility sectors, milder than normal winter conditions, coupled with a warmer than normal summer reduced distillate demand in the residential, commercial, and agricultural sectors for the second year in a row. The weather related drop in residential demand was particularly acute, sales fell by more than 700 million gallons or 10.9 percent compared to 1997.

Although sales to the transportation sector increased in the aggregate, sales to railroads declined for the third year in a row. In part, the drop of 3.0 percent resulted from a year of slow growth for railroads. The decline also reflects improved conditions and resulting gains in efficiencies compared to 1997 when significant disruptions occurred in scheduling and deliveries.³

While distillate sales benefited from the lower prices throughout the oil sector, milder winter conditions in the U.S and much of the Northern Hemisphere, coupled with lower demand in Asia resulting from the economic downturn there, resulted in high stock levels. In the U.S., throughout 1998 distillate stocks, already high at the beginning of the year, remained significantly above levels attained in 1997. In part, stock lev-

els remained high as a consequence of the upsurge in gasoline demand. Increased gasoline demand of 2.3 percent in 1998 compared to 1997 contributed to the increased production of distillate despite lack of demand in some major market segments.⁴

Oil company direct use of distillate fuel oil decreased sharply as companies curtailed drilling and other activities. In 1998, driven by falling crude oil and natural gas prices the number of rotary rigs in operation dropped steadily. As oil prices fell, rig counts plunged, falling by 35 percent between January and December. In comparison to 1997, the yearly average rig count fell by 12.3 percent.⁵ Other than in PAD District V⁶, the West Coast, direct oil company use decreased throughout the U.S.

The largest drop in distillate sales occurred in the residential sector. The winter in 1998 was warmer, than in 1997, and also considerably warmer than normal.⁷ Although the sales fell in all regions of the U.S., the drop was most pronounced in PAD District I (the East Coast) and in parts of PAD District II (the Middle West) where the market for home heating oil is concentrated. Distillate sales to the residential market fell sharply in both the northeast and Middle Atlantic States of PAD District I. Sales fell by 10.0 percent in PAD District I as a whole, and by 17.0 percent in PAD District II.

Sales to the commercial sector declined slightly in most areas of the country. Reflecting the impact of the warmer than normal winter, the drop in commercial sales was most pronounced in PAD District I and was particularly severe in the middle Atlantic states where sales fell by 11.3 percent. Nationally, the drop in commercial sales of distillate was 2.5 percent.

Overall sales of distillate to the industrial sector increased by 6.6 percent, reflecting the strength of the economy in general and in particular, a 7.1 percent in-

¹US Department of Commerce, Bureau of Economic Analysis.

²Total vehicle miles traveled increased by 2.3 percent in 1998. Source, Federal Highway Administration, *Highway Statistics 1997, and Traffic Volume Trends*, April 1999.

³Prolonged congestion on one major carrier resulted in delivery problems that not only contributed to a decline in distillate sales, but also had a negative impact on demand for coal while boosting demand for residual fuel oil and natural gas to compensate for the loss of coal to supply electric power plants.

⁴Refinery production of distillate increased in part as a function of the increased demand for gasoline production. Energy Information Administration, *Monthly Energy Review (MER)*, June 1999, Table 3.4, p. 57 and Table 3.5, p. 59.

⁵*US Average Rig Counts by State*, Baker Hughes (Hughes Christensen), 1997, 1998.

⁶The US is divided into 5 Petroleum Administration for Defense Districts (PAD Districts), (1) District I, East Coast, (2) District II, Midwest, (3) District III, Gulf Coast, (4) District IV, Rocky Mountains, and (5) District V, Pacific Coast. PAD District I is broken into three subdivisions: Subdistrict A, New England, Subdistrict B, Middle Atlantic, and Subdistrict C, Southeast.

⁷The winter season of 1997 – 1998 as a whole, measured 13.4 percent warmer than the previous year and 12.8 percent warmer than normal. Energy Information Administration. *Short-Term Energy Outlook, Second Quarter 1999*, p. 76.

crease in output of durable goods.⁸ On a regional basis, sales of distillate for industrial purposes increased in parts of PAD District I and in PAD Districts II and IV but declined slightly in the Middle Atlantic section of PAD District I, in PAD District III and somewhat more in PAD District V (the West Coast). Distillate sales to the military continued to decline, falling 80.4 million gallons or 18.6 percent.

Although neither the amount of acres planted nor the size of the harvests indicated a drop in agricultural demand for distillate, sales dropped nonetheless by 3.9 percent. Sales were down throughout much of the principal crop raising regions. Weather was the major factor, as the warm winter reduced heating demand and the warmer than normal summer reduced crop drying needs significantly in many parts of the country, particularly in the Mississippi River Valley. Warm and dry conditions through much of the summer, particularly at harvest time, enabled farmers to cut expenses by reducing the need for crop drying. This resulted in reduced demand for propane, the principal fuel used for crop drying such crops as corn and tobacco.

Supported by the warm summer and the lowest prices in several years, distillate sales to the electric utility sector surged, increasing by nearly 205 million gallons or 32 percent. Although low prices contributed to the fuel switching, the need to control plant emissions played the more crucial role. During the peak summer season, many utilities minimized operations of coal fired plants (in particular, the older less efficient plants) by turning to other sources of generation. Utilities sought to avoid penalties for exceeding allowable emission levels of Nitrogen Oxides (NOX) and Sulfur Oxides (SOX). Although utilities can trade credits, with prices approaching \$5,000 per ton for NOX credits, utilities sought other methods, including running jet turbine peaking units to avoid penalties or entering the market to purchase credits. Consequently, demand by utilities for both oil and gas increased sharply over the levels set in 1997.

Residual Fuel Oil

The downward trend in residual fuel oil sales of the past several years was broken by an upsurge in sales of 17.8 percent. Driven by the shift away from coal on the part of utilities and by robust gains in the bunker marine markets, sales increased by approximately two and one quarter billion gallons.

Increased sales to the utility segment were particularly strong in the Middle Atlantic and Southeastern states of PAD District I as well as in the Gulf Coast

states of PAD District III. Although sales increased in New England, the increase was not large because the surge in demand there occurred in 1997 largely as the result of the unavailability of several large nuclear plants. Demand in New England in 1997 increased approximately 475 million gallons. In 1998, there was a further increase of 3.3 percent or 46 million gallons.

The jump in sales of residual fuel oil driven by utility demand should not be viewed as a reversal of the long-term decline in sales that resulted in a drop in sales of approximately 40 percent between 1987 and 1996. Although sales to the utility market are likely to be robust in the short-term, as new power plants come on line, most will be gas fired and sales of residual will diminish once again.

Aside from sales to the bunker and utility segments of the market, sales of residual fuel in most areas of the country and to most market segments continued to decline in 1998 as they typically have done in recent years.

Sales of residual fuel oil to the commercial, industrial, military, and oil company sectors all declined in 1998. The drop in commercial sales of residual fuel oil was particularly sharp along the Atlantic coast in PAD District I where sales fell more than 20 percent. On a regional basis, aside from the New England portion of PAD District I and the Rocky Mountain states of PAD District IV, industrial sales fell. Sales of residual fuel oil for direct use by oil companies were more mixed on a regional basis. Sales increased somewhat in PAD Districts I and III but fell in PAD Districts II, IV, and V.

Bunker sales increased 12.2 percent overall with the largest increases in the Middle Atlantic region of PAD District I and in the Gulf Coast (PAD District III). The downturn in the economies of several Asian nations that began in 1997 continued to influence West Coast bunker sales during 1998. The negative impact of the Asian situation on bunker markets that began late in 1997 continued through 1998. However, unlike 1997 when demand in PAD District V plunged by more than 28 percent, West Coast bunker sales slipped by only an additional 4 percent in 1998. Other developments arising from the economic problems in Asia, helped to mitigate the negative impact on PAD District V bunker markets. By August, sharply lower demand in Asia for oil products in general led to cutbacks in refinery production. Consequently, a shortfall of bunker fuel developed in Asia that gave an advantage to the West Coast markets and boosted bunker sales in PAD District V.

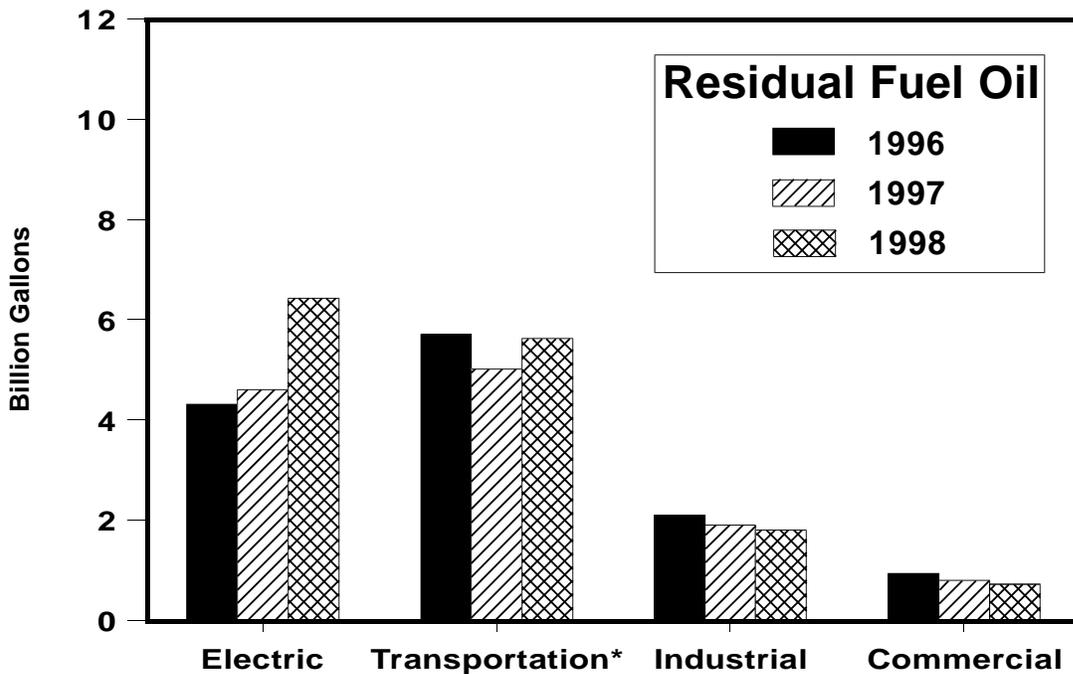
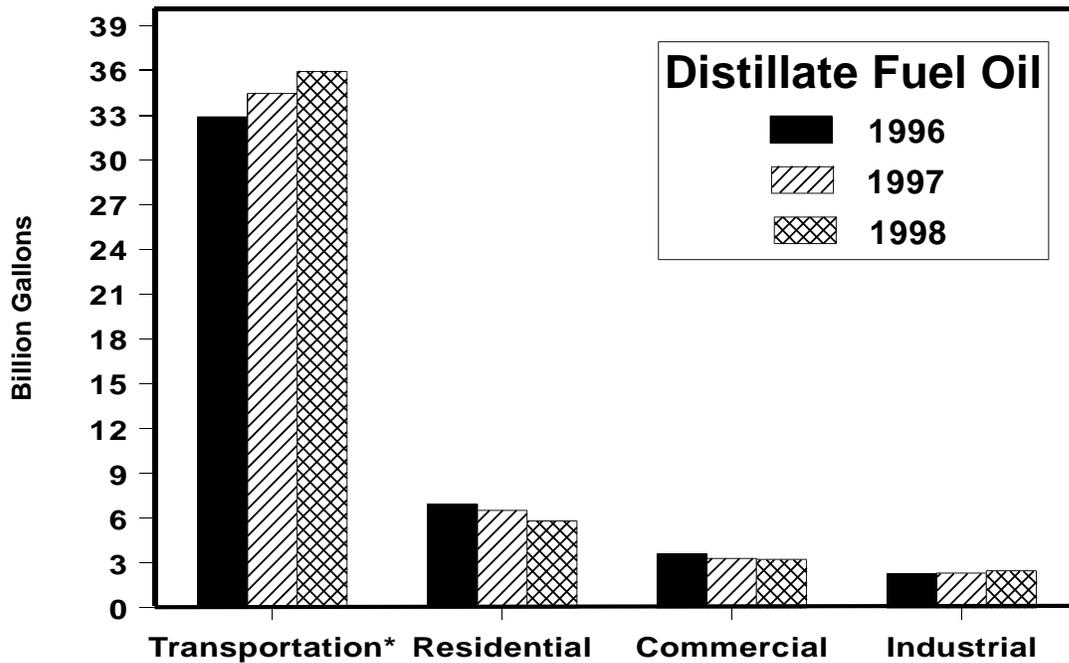
⁸*Economic Indicators*, April 1999, Washington D.C. US Government Printing Office, p.17.

Kerosene

Sales of kerosene increased sharply to reach nearly 1.2 billion gallons, the highest level of the decade. Sales of kerosene to all sectors increased. Sales to residential consumers continued to dominate the kerosene

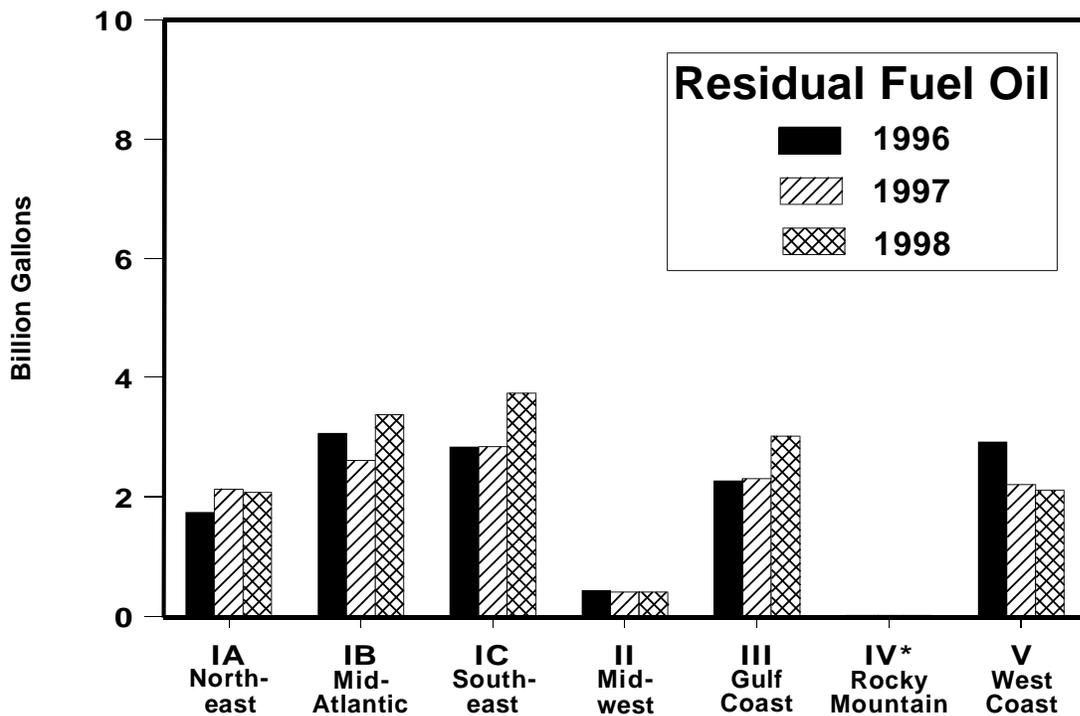
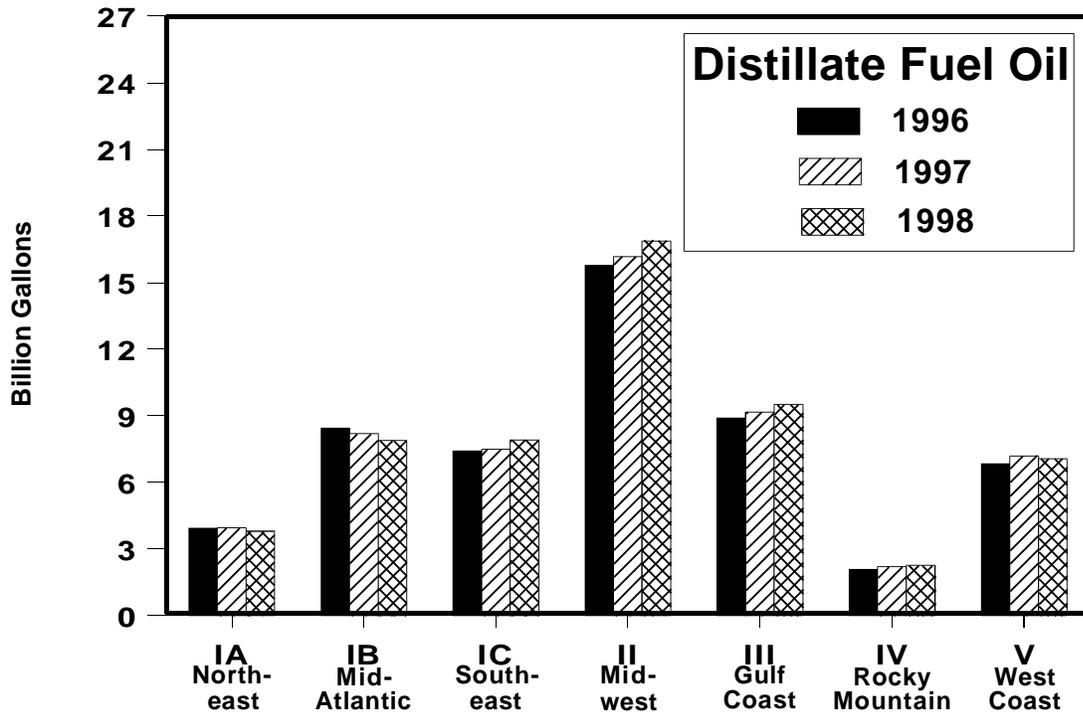
market accounting for more than two thirds of total kerosene sales. Kerosene sales to the commercial sector increased by 26.4 percent and sales to the industrial sector increased by 11.3 percent.

Figure HL1. U.S. Sales of Distillate and Residual Fuel Oils by End Use, 1996-1998



*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," 1997 and 1998.

Figure HL2. Volume Distribution of Distillate and Residual Fuel Oils by PAD District, 1996-1998

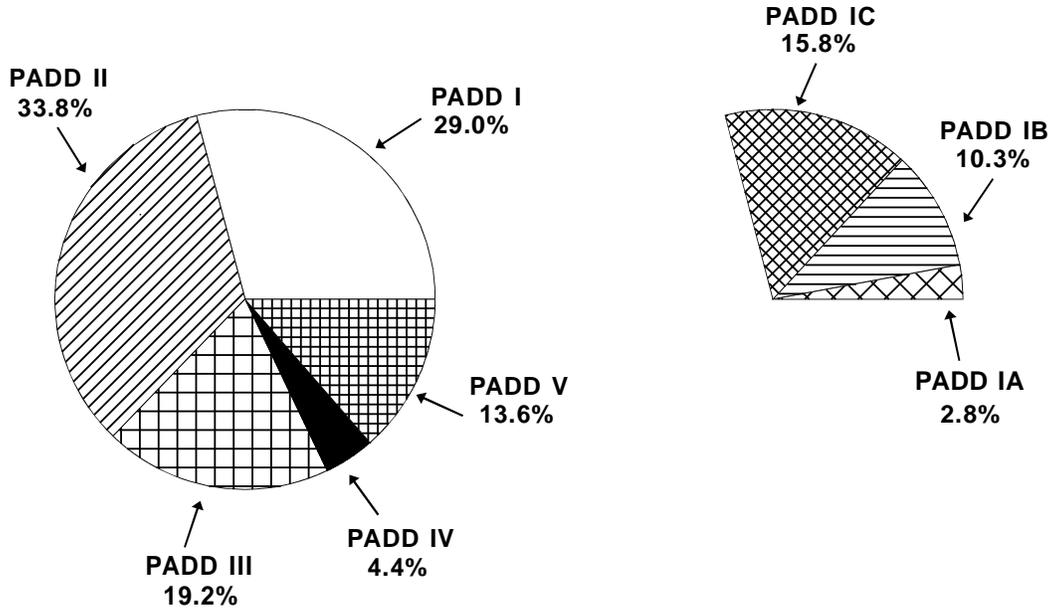


*Residual fuel oil sales in PAD District IV are too small to appear in this graph.

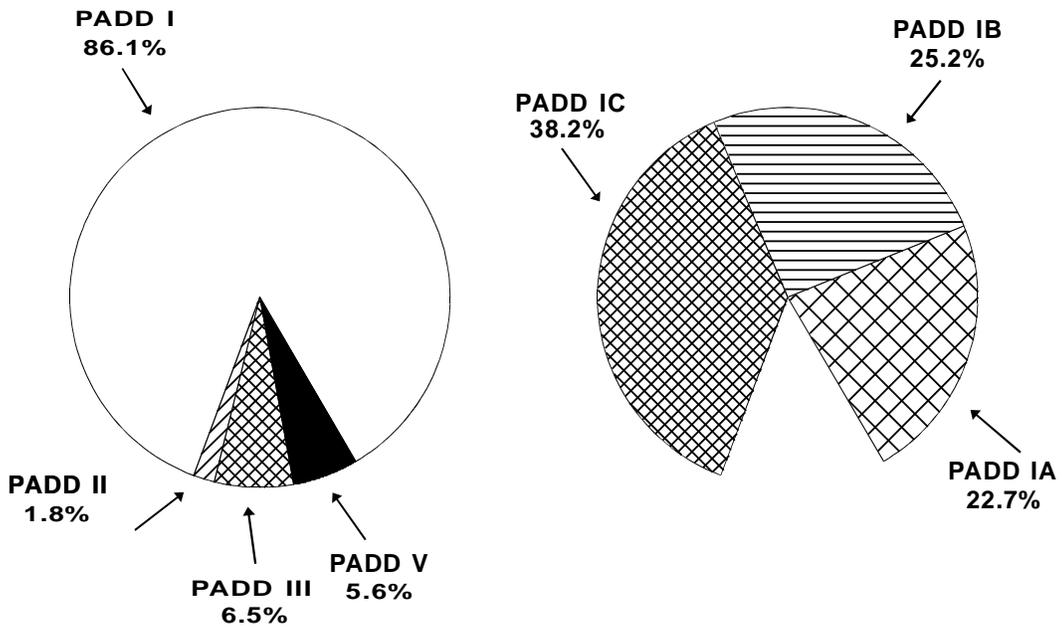
Sources: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 1997 and 1998.

Figure HL3. Distillate and Residual Fuel Oil Sales for Selected End-Use Categories by PAD District, 1998

Distillate: Transportation



Residual: Electric Utility



Sources: Energy Information Administration, Form EIA-821, "Fuel Oil and Kerosene Sales Report," 1998.