

Petroleum Consumption vs. World Supply

In the United States, petroleum consumption has risen faster in the transportation sector than in any other since 1973, before the first oil embargo. Continued growth in transportation activities has contributed, in large part, to the increase in oil consumption. While the oil price shocks of 1973–74 and 1979–80 depressed demand for a while, they did little to shake transportation’s dependence on oil. Only a small fraction of transportation’s energy needs are met by nonpetroleum sources, such as natural gas, methanol, and ethanol. Nonpetroleum sources are used primarily as gasoline blending agents to meet requirements of the Clean Air Act Amendments of 1990.

From 1973 to 1999, the residential and commercial buildings sector cut petroleum use in half, and the utilities sector reduced oil use by more than 60 percent. Over the same period, industrial sector oil use hovered between 4 million barrels per day (mmbd) and 5 mmbd, primarily because petroleum is an important feedstock for the petrochemicals industry. In contrast, oil use in the transportation sector rose from 9.05 mmbd in 1973 to 12.75 mmbd in 1999, an increase of about 41 percent. *Due to these changes in consumption patterns among sectors, transportation today accounts for two-thirds of total U.S. petroleum demand compared with about 50 percent before 1973 [1] (figure 1).*

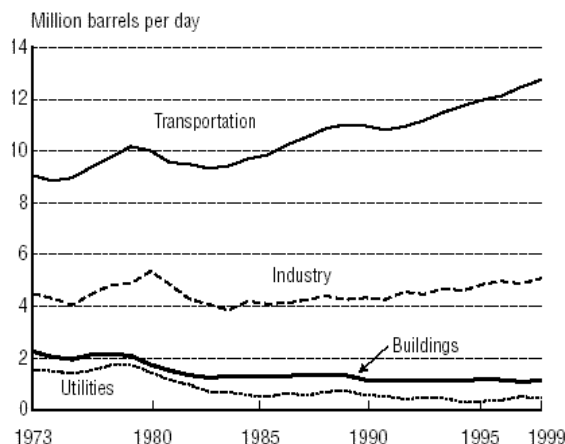
The U.S. Department of Energy expects the heavy concentration of oil demand in the transportation sector to continue. Between 1998 and 2020, overall U.S. petroleum consumption is projected to increase by 6.2 mmbd. Transportation demand, particularly for “light products,”¹ accounts for much of this projected rise in consumption [2].

Sources

1. U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2000*, DOE/EIA-0383(2000) (Washington, DC: December 1999).
2. -----, *Annual Energy Review 1999*, available at www.eia.doe.gov/emeu/aer/peiro.html as of June 23, 2000.

¹ Light products include gasoline, diesel, heating oil, jet fuel, and liquefied petroleum gases. They are more difficult and costly to produce than heavy products, such as residual fuel oil.

Figure 1
Transportation's Share of U.S. Petroleum Use: 1973–1999



SOURCE: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 1999* (Washington, DC: July 2000), table, 5.12.

	mmbd	bbyr	% of total
Transportation	12.75	4.65	66.2%
Industry	5.00	1.83	26.0%
Buildings	1.00	0.37	5.2%
Utilities	0.50	0.18	2.6%
Total	19.25	7.03	100.0%

		% of total
Saudi Arabia	261.7	25.5%
Iraq	112.5	10.9%
U.A.E.	97.8	9.5%
Kuwait	96.5	9.4%
Iran	89.7	8.7%
Venezuela	76.9	7.5%
Russia	48.6	4.7%
Libya	29.5	2.9%
Mexico	28.3	2.8%
China	24	2.3%
Nigeria	22.5	2.2%
U.S.	22	2.1%
Others	118.1	11.5%
Total	1,028.1	100.0%

Table 4-1 Overview of U.S. Petroleum Production, Imports, Exports, and Consumption

mmbd: millions of barrels per day; bbyr: billions of barrels per year

	1999	
	mmbd	bbyr
Domestic production		
Crude oil ^f	5.93	2.16
Natural gas plant liquids	1.83	0.67
Total^b	8.14	2.97
Gross imports		
Crude oil ^f	8.59	3.14
Petroleum products ^d	1.96	0.72
Total	10.55	3.85
Exports	0.94	0.34
U.S. net imports^e	9.61	3.51
U.S. petroleum consumption	19.39	7.08
By the transportation sector	12.75	4.65
Transportation petroleum use as % of domestic petroleum production	156.60	156.60
Transportation petroleum use as % of domestic petroleum consumption	65.76	65.76
World petroleum consumption	74.58	27.22
U.S. petroleum consumption as % of world petroleum consumption	26.00	26.00

a Includes lease condensate.

b Includes crude oil, natural gas plant liquids, and other liquids.

c Includes imports for the Strategic Petroleum Reserve, which began in 1977.

d Beginning in 1985, motor gasoline blending components and aviation gasoline blending components are included.

e Net imports = imports minus exports.

SOURCES:

Domestic production, imports, exports, and U.S. petroleum consumption: 1960-70:

U.S. Department of Energy, Energy Information Administration, Annual Energy Review 1997, DOE/EIA-0384(97) (Washington, DC: July 1998), table 5.1.

1975-99: Ibid., Monthly

Energy Review, DOE/EIA-0035 (03/99) (Washington, DC: March 2000), tables 3.1A

(domestic production); 3.1B (imports and exports); and 10.2 (U.S. petroleum consumption).

1999: Ibid., International Energy Database, December 1999, Table 12.xls, available at Internet site www.eia.doe.gov/emeu/international/petroleu.htm#ConsumptionA, as of Dec. 8, 2000.

World petroleum consumption: 1960-96: Ibid., Annual Energy Review 1997, DOE/EIA-0384(97) (Washington, DC: July 1998), table 11.9.

1999: Ibid., International Energy Database, December 1999, Table 1.2, available at Internet site www.eia.doe.gov/emeu/international/petroleu.htm#ConsumptionA, as of Dec. 8, 2000.

At the present rate of world petroleum consumption (27.22 billion barrels per year), the world supply of proven reserves (1,028.1 billion barrels) *will be depleted in 37.8 years!* If the USA instituted the fare-free bus transportation system in all the urban regions of the country, the annual world petroleum consumption would be reduced by 3.05 billion barrels per year (from 27.22 down to 24.17), and the world proven reserves would last 42.5 years (an increase of 4.7 years).