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Monthly Energy Review

August 1980

U.S. Department of Energy
Energy Information Administration

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ENERGY FROM URBAN WASTE

by
Howard Walton
Office of Program Development

Abstract

This article provides a summary of information on the topic of generating energy from urban waste. The amount of energy potentially available from this source and the primary existing technologies for converting waste to energy are discussed. The number and capacity of existing and planned projects are also summarized, as well as the impediments to commercialization.

Introduction

It is estimated by the U.S. Environmental Protection Agency that approximately 150 million tons of municipal solid waste (MSW) were generated annually in the United States in 1977.[1] Nearly 80 percent of this waste contains organic, combustible materials, which can be burned to generate steam to produce electricity, or to provide heating and cooling for industrial uses. In addition, waste can be mechanically separately to produce fuels and materials. In the future systems may be available to provde premium liquid and gaseous fuels.

The average composition of municipal waste is given below, with its percentage by weight:

Combustible	Percentage
Paper products	40
Food wastes	17
Garden trimmings	10
Plastic, rubber, and leather	6
Wood	4
Textiles	2
Noncombustible	
Glass and Ceramics	10
Metals	10
Ash, rock, and dirt	1

[1] There are varying estimates of the amount of municipal solid waste generated each year.

The total energy content available from MSW can be estimated by assuming that the combustible portion of the waste can be burned or converted into a usable fuel form, with an average heat value of 10 million Btu per ton. As an upper limit, therefore, the 150 million tons could be converted into about 1.5 quadrillion Btu, which is about 2 percent of total current U.S. energy consumption. The amount of energy available to end users would be significantly less, because of heat losses which occur in the production and distribution of steam or the generation of electricity.

The amount of energy potentially available from operational and planned urban waste projects is roughly 0.09 quadrillion Btu, not including the energy savings from recycling noncombustible materials.

Even though the potential energy contribution from urban waste is small compared to national requirements, there may be local situations where the potential energy from waste could provide a significant share of one type of energy consumption. One case study sponsored by Department of Energy (DOE) found that in Landshut, West Germany, urban waste was used to supply 30 percent of total electricity demand.[2]

Urban Waste Management

Obtaining energy from waste until recently has been viewed as a small portion of a larger project involving the disposal of waste and the recovery of recyclable or otherwise useful products. If an analysis showed that the total project (e.g., waste separation, sale of recovered materials, sale of energy, and final landfill disposi-

[2] *European Waste-to-Energy Systems; Case Study of Landshut, West Germany*, September 1978, DOE, HDP/M2103-0007.

tion) was economically feasible then the waste disposal manager would consider using urban waste for energy. Institutional and regulatory factors probably also played an equally important role in the decision making process.

The shortage of available landfill areas and the upgrading of environmental regulations have driven up the costs of waste disposal. Recovery programs which reduce the total amount of waste for disposal and of environmental emissions, as well as provide monetary returns from the recovered noncombustible materials and energy, can partially ease the pressure.

Basic Technologies

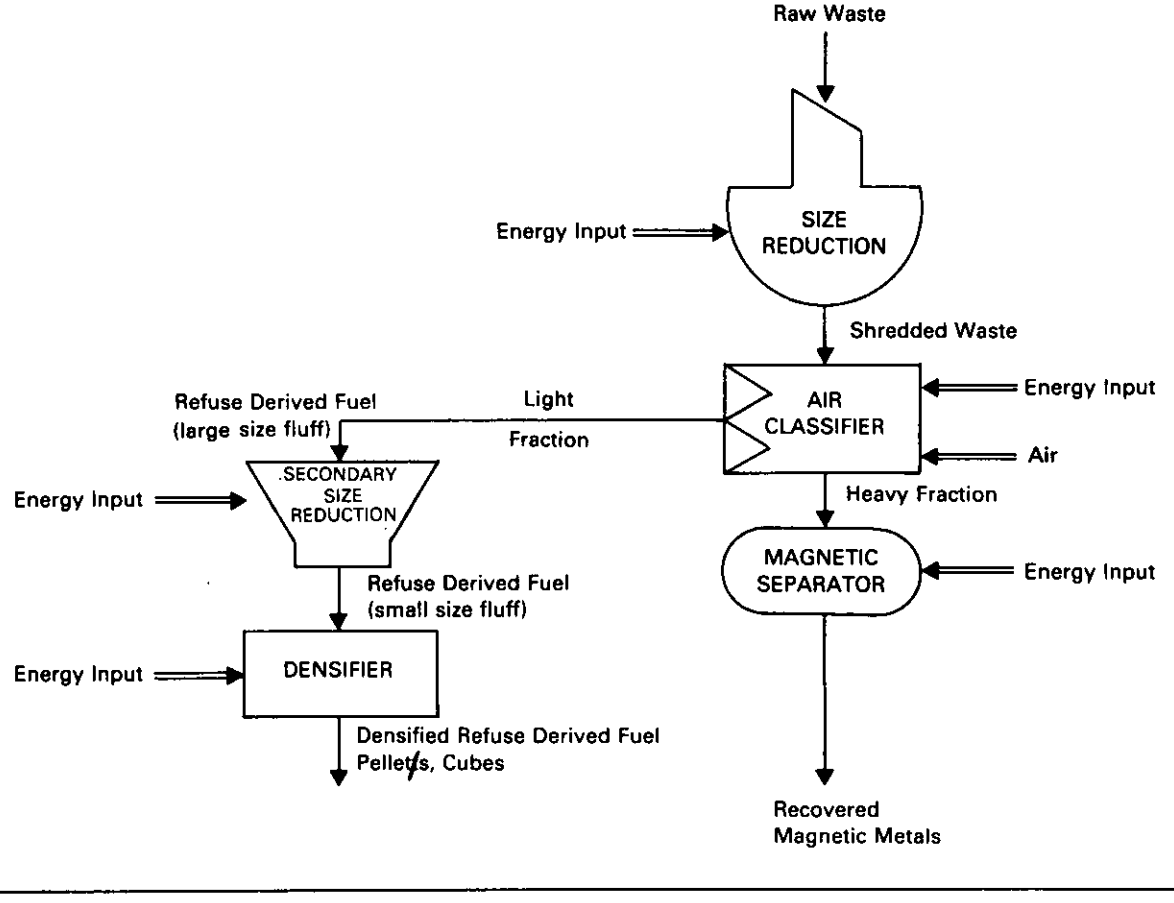
Three basic procedures—mechanical, thermal, and biological—for recovering energy from urban wastes are described below:

Mechanical Recovery

In the mechanical process, waste is separated into identifiable groups either at the source (for example, curbside pickups of old newpapers) or by mixed waste processing at the central, municipal disposal or burning site. One example of the latter technique (see Figure 1) is to shred the waste to near uniform particle size (a maximum of 4 to 6 inches) and introduce it into a high velocity column of air (air classification) to blow off the light, primarily organic material.[3] The light fraction, usually termed "refuse derived fuel" (RDF), may then be used as a total or supplementary fuel. An entension to this process, as shown in Figure 1, is for the light fraction

[3] This brief description of waste separation and energy recovery is taken from National Center for Resource Brief, *Resource Recovery: A Perspective*, National Center for Resource Recovery, Washington, D.C., May 1980.

Figure 1. Mechanical Recovery of Urban Waste Materials



to be introduced into a secondary shredder producing finely shredded or "fluff" refuse derived fuel. Densified RDF, in the form of briquetts or pellets, is then produced by mechanical extrusion or compaction. Either form of RDF, with moderate modification, can be burned in existing boilers as the sole fuel or as a supplement to conventional fossil fuels. A ton of MSW will produce about 0.7 ton of RDF. The heavy fraction from the process can be funneled through a series of separation processes to sort out steel, and then perhaps aluminum and glass.

The steam that is produced in the RDF process may be used to generate electricity or to supplement the heat required in an industrial process. Since steam cannot be transported efficiently over long distances, however, the industrial plant or other user must be within 1 or 2 miles of the burning site.

Densified RDF (d-RDF) can be burned in a wide variety of boilers and transported a number of miles in conventional trucks, thereby allowing for a greater variety of applications. Additionally, d-RDF pellets can be stored outdoors, under rain cover, for several months without structural or chemical degradation or other problems. Fluff RDF, on the other hand, requires much costlier storage facilities.

Another form of RDF, a dust, is being developed on a proprietary basis by private industry. The fuel has low ash content, low sulfur content, and a heat content of at least 16 million Btu per ton (equivalent to that of Montana coal). The fuel, termed "ECO-Fuel II", can be transported long distances for use in utility boilers. One plant is in start-up and is expected to produce ECO-Fuel II from 1,250 tons per day of refuse.

Thermal Recovery

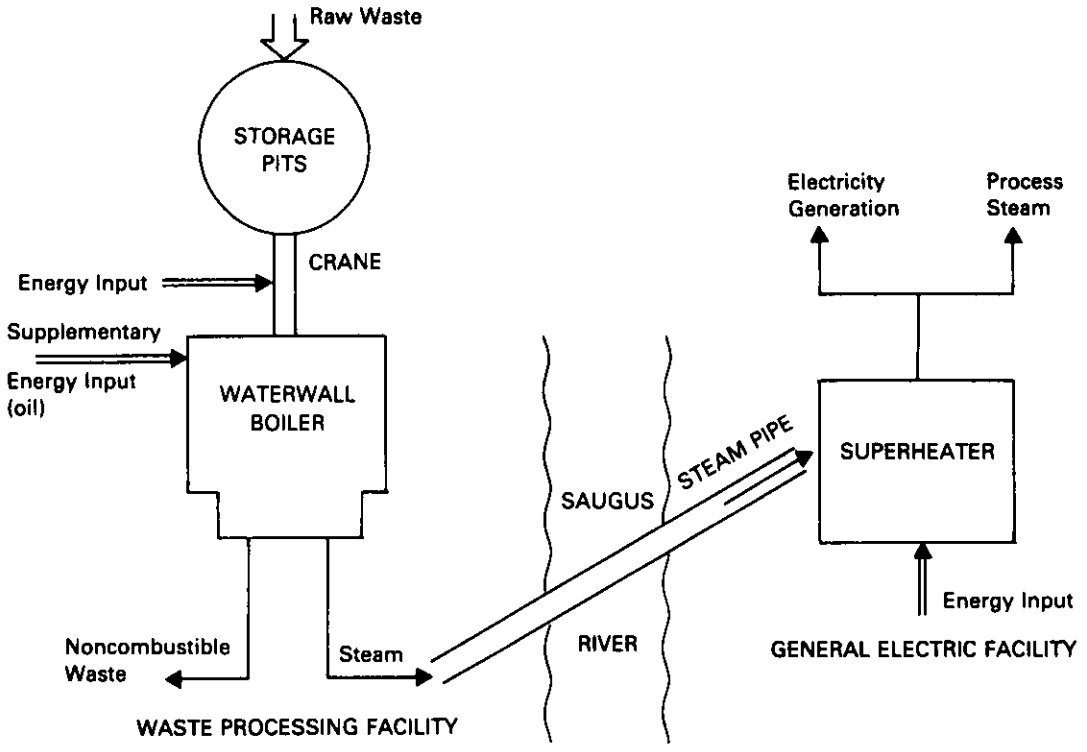
On a world-wide basis, mass burning of unprocessed solid waste is the principal type of thermal procedure for recovering energy from urban waste. This process, generally considered the most technically advanced, is usually carried out in water-wall boilers for the purpose of producing steam onsite. More than 250 units of this type are operating in Europe and Japan. Seven are operating in the United States, three of which are retrofits to existing incinerators.

A typical application of mass burning is in operation at Saugus, Massachusetts (see Figure 2), where about 1,000 tons per day of urban waste is converted to steam in a waterwall boiler. The steam is transported by pipe less than a mile across the Saugus River where it is superheated and used profitably by a General Electric facility for process heat and the generation of electricity. Numerous local communities that have the option of disposing their waste at the project find it economically feasible. It is anticipated that as landfills become saturated and alternative sites are unavailable or too costly, more communities will use the Saugus facility.

Another type of mass burning, on a smaller scale, is provided by modular combustion units. Waste material is burned in two controlled-air chambers which function as volume reduction and emissions control chambers. While large incinerators are either built or assembled onsite, modular units are delivered already assembled by the manufacturer. This appoach is more appropriate for smaller communities where there are industrial or institutional markets for steam.

Pyrolysis is another thermal process for obtaining energy from urban waste. In the pyrolysis process, refuse is subjected to high temperatures (1,000–2,000°F) free of oxygen. This causes a breakdown in the organic portion of the refuse into oils, gases, and char. It is estimated that a ton of MSW will yield close to 18,000 cubic feet of gas and, additionally, 114 gallons of liquid, 25 pounds of ammonium sulfate, 0.5 gallons of char, and 54 pounds of solid residue with an available heat content of between 5 million and 8 million Btu. Since about 2 million Btu per ton of refuse will sustain the process, the gas fraction will fuel the plant and leave ample heat for other uses.

Figure 2. Mass Burning of Urban Waste in Saugus, Massachusetts



Biological Recovery

The third approach for recovering energy from waste is through bioconversion, which converts organic matter into useful energy forms. The principal operational method in this area is the recovery of methane from old or active landfills. Obtaining landfill gas involves digging a series of wells, extracting methane by vacuum, removing moisture and contaminants, and compressing the gas to utility pipeline specifications. Generally, from 2,000 to 8,000 cubic feet (0.5 million Btu per thousand cubic feet) of gas is generated from 1 ton of MSW.

Another form of bioconversion is anaerobic (free of oxygen) digestion of urban waste in controlled vessels. In this process, shredding is followed by recovery of ferrous metals and two stages of air classification to separate out the light organic materials. These materials are then blended with sludge, nutrients, and water. The slurry mixture is fed into two agitated anaerobic digesters in which bacterial action converts one-half of it to methane. A further purification could ensure that the recovered methane would be of pipeline quality (0.9 million Btu per thousand cubic feet) for use in the local utility distribution system. This process, still in the development stage, is being tested in Pompano Beach, Florida, under a grant by the Department of Energy.

Existing and Planned Projects

Resource recovery projects are tracked by the Bio-Energy Council, the Environmental Protection Agency (EPA), the National Center for Resource Recovery (NCRR), and the American Gas Association (AGA).[4] The Bio-Energy Council, EPA, and NCRR monitor the three types of energy from urban waste projects, while AGA concentrates on methane recovery from sanitary landfills.

[4] See Bibliography.

Table 1. Status of Energy From Urban Waste Projects In The United States

Type of Waste Process	Operational	In Shakedown	Under Construction	In Development	Total Projects	Total Rated Capacity (tons of waste per day)
Mass Burning						
Large Boilers	7	0	2	1	10	7,145
Modular Boilers	6	1	4	0	11	1,060
Mechanical Separation	13	5	7	2	27	32,595
Methane from Sanitary Landfills	8	1	5	5	19	*14.8
Total Projects	34	7	18	8	67	

*Million cubic feet per day of medium and high Btu gas; not all projects in the development stage have been assigned design capacities.

Sources: Landfill projects from *Gas Energy Review*, American Gas Association, April 1980, Vol. 8, No. 7. Other projects from *NCRR Bulletin, The Journal of Resource Recovery*, National Center for Resource Recovery, Inc., March 1980, Vol. 10, No. 1.

A summary of this information is provided in Table 1.

Mechanical separation is the most common form of energy and resource recovery projects. The average rated capacity of these systems is about 1,200 tons of waste per day, but the range is from 200 to 3,000 tons per day.[5] When all 27 projects become operational, approximately 34,000 tons per day will be processed (if all plants operate at full capacity). This total can be compared to estimates of urban waste production in the United States of 150 million tons per year or 410,000 tons per day.

There are eight operational sanitary landfill methane recovery projects, six more nearing completion, and five in the development stage. The average rated capacity of this type of project is approximately 780,000 cubic feet of gas per day. When all nineteen projects become operational, about 15 million cubic feet of gas per day will be produced (if all projects operate at full capacity). This figure can be compared to daily U.S. natural gas consumption of 53 billion cubic feet.

There appears to be a steady increase in the number of projects to produce energy from urban waste. This is indicated by the increase in the number of operational projects since the DOE published the report, *Commercialization Strategy Report for Energy from Urban Wastes*.[6] The report lists the following number of operational systems (the current information from NCRR and AGA is shown in parentheses).

Mass burning/large boilers	6	(6)
Mass burning/modular boilers	4	(6)
Mechanical separation	0	(14)
Sanitary landfills	1	(8)

NCRR's list also reports 29 projects in the advanced planning stage.

Net Energy Considerations

The results of one method of measuring energy efficiencies of resource recovery processes is exhibited in Table 2. Here the efficiency measure is:

$$\frac{\left[\begin{array}{c}\text{Heat value of} \\ \text{the fuel product}\end{array}\right] - \left[\begin{array}{c}\text{Heat value of energy} \\ \text{to operate the system}\end{array}\right]}{\text{Heat value of input solid waste}}$$

Low efficiency values can be obtained by either inherently inefficient conversion (e.g., methane from sanitary landfills) or the need for large amounts of additional en-

[5] A 3,000 ton-per-day mechanical type energy from waste system optimistically could produce the equivalent of 3,500 barrels of oil per day.

[6] Walter, Don, et. al., Draft, Commercialization Strategy Report for Energy From Urban Waste, DOE, TIC-28852.

Table 2. Energy Recovery Efficiencies of Resource Recovery Processes

Process	Efficiency (Percent) Energy In Fuel Produced*	Energy Available as Steam
Fluff RDF	70	49
Dust RDF	80	63
Wet RDF	76	48
Waterwall Combustion Furnaces	—	59
Modular Incinerators	—	25–50
Pyrolysis	26	23
Methane from Landfills	10–30	—

*Heating value of the fuel product less the heating value of the energy used to operate the system expressed as a percent of the heating value of the input solid waste.

Source: *Materials and Energy from Municipal Waste*, U.S. Office of Technology Assessment, July 1979, Table 34, p. 100.

ergy to enhance the conversion process (e.g., pyrolysis). It appears that all processes provide positive net energy (if the energy content of machinery and labor and recycled materials are ignored). Methane from sanitary landfills and pyrolysis give efficiency values closest to zero. In the former case, the basic conversion is inefficient and little external energy is required. Since it may not be economically possible to build a boiler at the site of the landfill, the direct abstraction of methane probably makes the most sense. As described earlier, there are 14 landfill projects in operation, or close to operation, which are basically private undertakings. Their continued existence provides proof of the economic justification for these projects.

The external energy required in the pyrolysis process is substantial. A Baltimore, Maryland facility provides some operational data to assess the net energy of this type of project.[7] In this facility, as in other mechanical separation projects, electricity is used to shred and transport the refuse, and to operate the electrostatic precipitators and other related equipment. The additional energy, unique to this particular type of project, is No. 2 fuel oil, which is used as a supplement in the pyrolysis (and subsequent purification) process. Operational experience with the Baltimore City project during the May to October 1979 period indicates that, for every ton of incoming waste, 39.5 kWh of electricity and 9.9 gallons of fuel oil were consumed, and 2,450 pounds of steam, or 2.9 million Btu, were produced. After taking account of heat losses to generate electricity, about 1.8 million Btu were required to generate the steam, with the steam containing an equivalent of 2.9 million Btu. Thus, if only direct energy is considered, there appears to have been a net energy gain in the Baltimore City project.

[7] For a description of the Baltimore City project see Even, John C., "Pyrolysis in Baltimore: From 'Failure' to Success", *National Center For Resource Recovery Bulletin*, March 1980.

Impediments to Commercialization

Several impediments to the commercialization of urban waste are as follows:

- Daily variability of waste quality makes processing and burning difficult to control;
- Steam cannot be readily stored or transported;
- Most communities find it hard to adopt new technology, especially with high initial costs;
- The economics are uncertain;
- Local governments often lack legal authority to make long-term contracts to deliver steam; and

- Electric utilities, major potential customers for RDF, exists in a complex regulatory environment which may or may not provide adequate incentives to seek the cheapest fuels.

In spite of these general impediments, many communities or private companies have determined that energy recovery from urban waste is economically possible in their particular location. For this reason, there are currently 59 projects either in operation or nearing completion, 8 projects in development, and 29 projects in the advanced planning stage.

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Part 1 Executive Summary

Overview

Domestic energy production in May 1980 was 5.6 quadrillion Btu, 3.0 percent higher than in April 1980 and 3.7 percent higher than in May 1979. In May 1980 total domestic energy was produced from the following sources: natural gas, 1.7 quadrillion Btu, or 30.4 percent; coal, 1.6 quadrillion Btu, or 29.2 percent of the total; crude oil, 1.6 quadrillion Btu, or 27.9 percent; and 0.7 quadrillion Btu, or 12.5 percent of the total from hydroelectric power, nuclear electric power, natural gas plant liquids, and electricity produced from geothermal power and wood and waste.

While the United States produced a total of 5.6 quadrillion Btu of energy in May 1980, it consumed a total of 6.0 quadrillion Btu of energy. Consumption was 2.3 percent lower than in April 1980 and 3.2 percent lower than in May 1979. Petroleum consumption was 2.8 quadrillion Btu, representing 47.2 percent of the total U.S. consumption of energy. Natural gas consumption was 1.4 quadrillion Btu, or 24.2 percent of the total. Coal consumption was 1.2 quadrillion Btu, or 19.8 percent of the total. All remaining fuels provided 0.5 quadrillion Btu, or 8.8 percent of the total consumption.

Energy imports in May 1980 totaled 1.3 quadrillion Btu and supplied 21.1 percent of consumed energy in May. The May 1980 total import figure was 21.4 percent lower than during May 1979. The United States exported 0.4 quadrillion Btu of energy in May and had a domestic net import total of 0.9 quadrillion Btu. Crude oil accounted for 0.8 quadrillion Btu of the total net imports, while petroleum products accounted for 0.2 quadrillion Btu. Natural gas and electricity contributed small amounts to the net import total. Coal coke exports exceeded coal coke imports, causing coal coke to appear as a net export item of less than 0.1 quadrillion Btu and coal exports exceeded coal imports, causing coal to appear as a net export item of 0.2 quadrillion Btu.

Executive Summary

Energy Summary

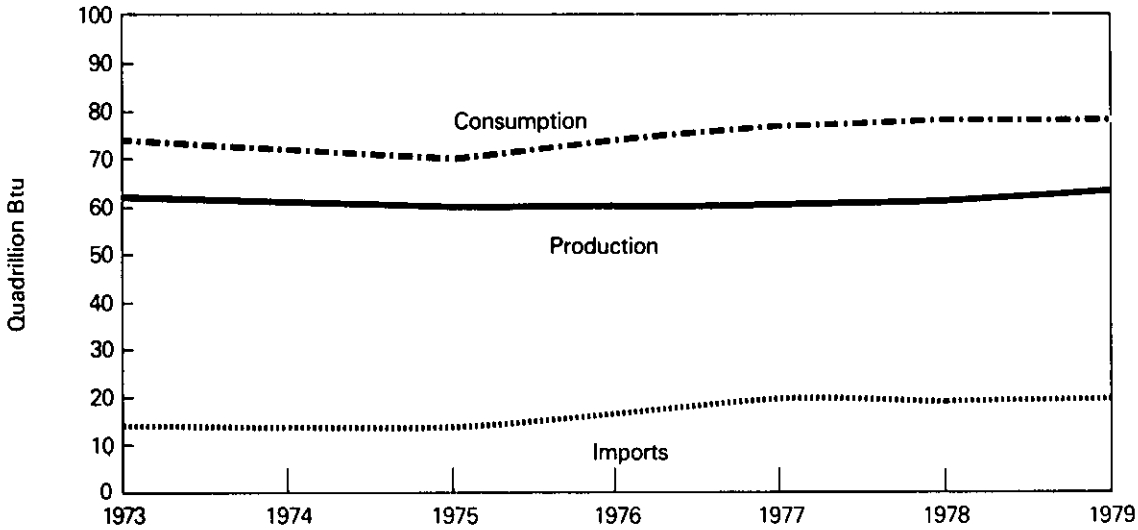
		Energy Production[1]	Energy Consumption[2]	Energy Imports[3]	Energy Exports[4]
		Quadrillion (10^{15}) Btu			
1973	**TOTAL**	**62.433**	**74.609**	**14.732**	**2.073**
1974	**TOTAL**	**61.229**	**72.759**	**14.417**	**2.243**
1975	**TOTAL**	**60.059**	**70.707**	**14.113**	**2.389**
1976	**TOTAL**	**60.090**	**74.509**	**16.838**	**2.213**
1977	**TOTAL**	**60.297**	**76.390**	**20.092**	**2.097**
1978	January	4.475	7.579	1.622	0.078
	February	4.160	6.910	1.432	0.058
	March	4.871	6.806	1.659	0.066
	April	5.182	6.022	1.479	0.134
	May	5.503	6.189	1.493	0.186
	June	5.322	6.000	1.525	0.223
	July	5.179	6.184	1.614	0.163
	August	5.374	6.331	1.615	0.179
	September	5.048	5.947	1.695	0.186
	October	5.435	6.283	1.630	0.226
	November	5.358	6.552	1.679	0.240
	December	5.300	7.350	1.817	0.212
	TOTAL	**61.208**	**78.154**	**19.262**	**1.951**
1979	January	5.299	7.946	1.777	0.175
	February	4.894	7.240	1.532	0.161
	March	5.483	6.972	1.727	0.242
	April	5.220	6.123	1.519	0.237
	May	5.424	6.186	1.606	0.257
	June	5.274	5.978	1.593	0.252
	July	5.020	6.103	1.646	0.272
	August	5.525	6.340	1.693	0.259
	September	5.137	5.877	1.537	0.222
	October	5.561	6.377	1.703	0.288
	November	5.361	6.512	1.562	0.264
	December	5.340	7.133	1.693	0.261
	TOTAL	**63.537**	**78.787**	**19.587**	**2.891**
1980	January	5.503	7.427	1.659	0.225
	February	5.175	7.026	1.467	0.205
	March	R5.535	R6.993	R1.492	R0.265
	April	R5.463	R6.128	R1.327	0.293
	May	5.626	5.985	1.263	0.351
	TOTAL (Year-to-date)	**27.302**	**33.559**	**7.208**	**1.340**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]See Explanatory Note 1.
[2]See Explanatory Note 2.
[3]See Explanatory Note 3.
[4]See Explanatory Note 4.
R=Revised data.
Note: The sum of domestic energy production and net imports of energy does not equal domestic energy consumption. The difference is attributed to stock changes; losses and gains in conversion, transportation and distribution; the addition of blending compounds; shipments of anthracite to U.S. Armed Forces in Europe; and adjustments to account for discrepancies between reporting systems.
Source: •Energy Information Administration calculations based on data appearing elsewhere in this publication.

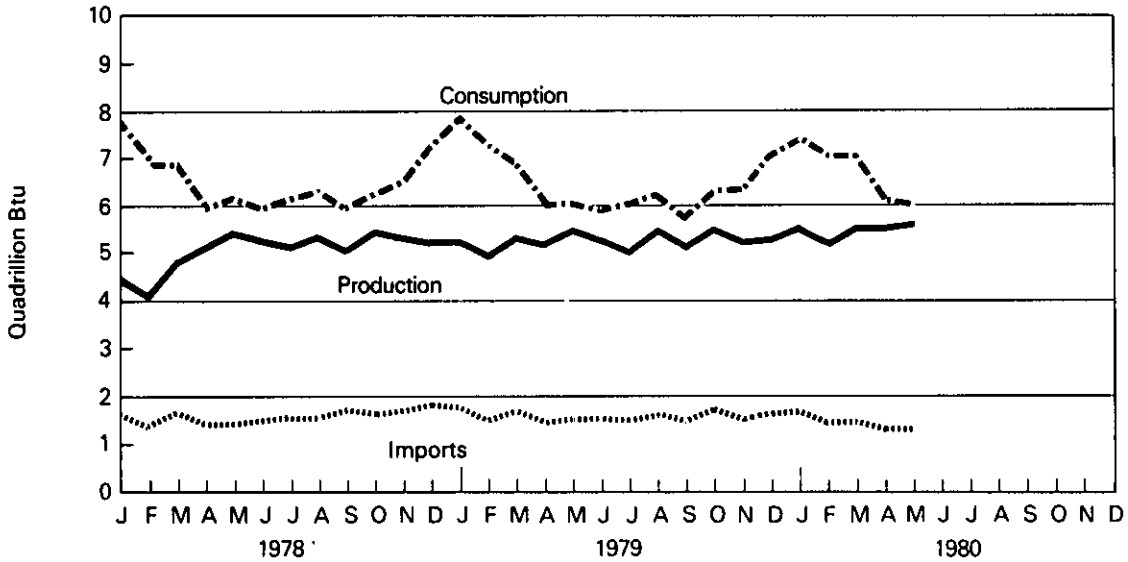
Executive Summary

Energy Summary

Yearly



Monthly



Executive Summary

Production of Energy by Type

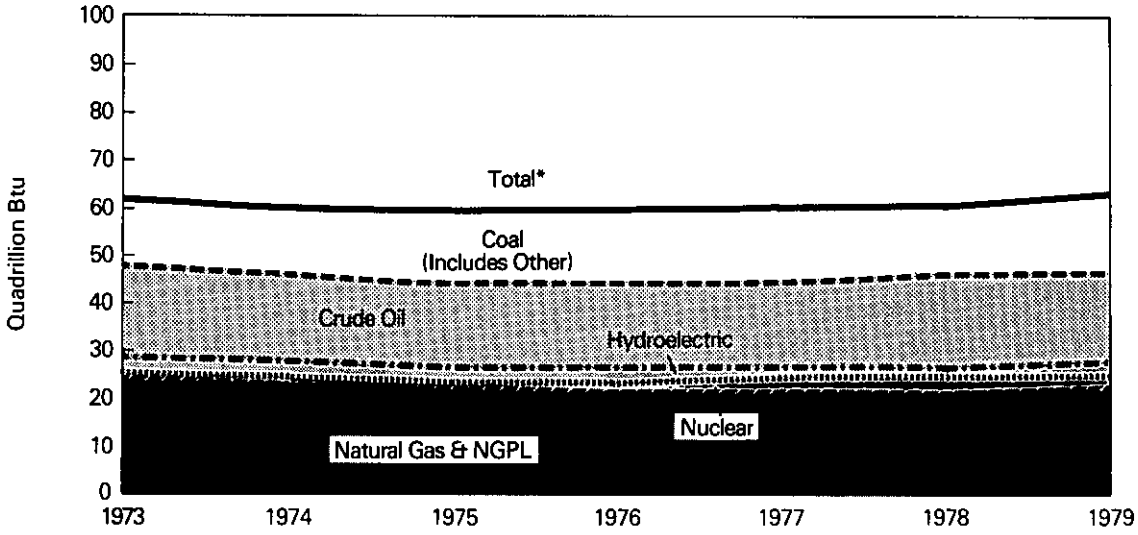
		Coal[1]	Crude Oil[2]	NGPL[3]	Natural Gas (Dry)	Hydro-electric Power[4]	Nuclear Electric Power	Other[5]	Total Energy Produced	Yearly Cumulative Energy Produced
					Quadrillion (10^{15}) Btu					
1973	**TOTAL**	**14.366**	**19.493**	**2.569**	**22.187**	**2.861**	**0.910**	**0.046**	**62.433**	
1974	**TOTAL**	**14.468**	**18.575**	**2.471**	**21.210**	**3.177**	**1.272**	**0.056**	**61.229**	
1975	**TOTAL**	**15.189**	**17.729**	**2.374**	**19.640**	**3.155**	**1.900**	**0.072**	**60.059**	
1976	**TOTAL**	**15.853**	**17.262**	**2.327**	**19.480**	**2.976**	**2.111**	**0.081**	**60.090**	
1977	**TOTAL**	**15.829**	**17.454**	**2.327**	**19.565**	**2.337**	**2.702**	**0.082**	**60.297**	
1978	January	0.531	1.503	0.189	1.701	0.265	0.278	0.007	4.475	4.475
	February	0.543	1.360	0.172	1.609	0.235	0.235	0.006	4.160	8.635
	March	0.898	1.568	0.194	1.705	0.260	0.242	0.005	4.871	13.506
	April	1.369	1.534	0.191	1.627	0.267	0.189	0.004	5.182	18.689
	May	1.580	1.587	0.186	1.623	0.303	0.220	0.004	5.503	24.192
	June	1.506	1.537	0.186	1.584	0.265	0.239	0.005	5.322	29.513
	July	1.231	1.574	0.190	1.652	0.258	0.269	0.005	5.179	34.692
	August	1.477	1.575	0.189	1.617	0.234	0.276	0.006	5.374	40.066
	September	1.328	1.531	0.182	1.538	0.224	0.239	0.007	5.048	45.115
	October	1.608	1.586	0.187	1.595	0.206	0.248	0.005	5.435	50.550
	November	1.597	1.521	0.189	1.567	0.211	0.268	0.006	5.358	55.908
	December	1.370	1.557	0.191	1.668	0.233	0.274	0.007	5.300	61.208
	TOTAL	**15.037**	**18.434**	**2.245**	**19.485**	**2.962**	**2.977**	**0.068**	**61.208**	
1979	January	1.278	1.521	0.213	1.718	0.264	0.299	0.007	5.299	5.299
	February	1.211	1.380	0.187	1.606	0.225	0.279	0.006	4.894	10.193
	March	1.480	1.544	0.210	1.706	0.274	0.262	0.008	5.483	15.676
	April	1.420	1.485	0.201	1.641	0.268	0.198	0.007	5.220	20.895
	May	1.536	1.544	0.200	1.670	0.305	0.162	0.007	5.424	26.320
	June	1.568	1.463	0.193	1.606	0.264	0.173	0.007	5.274	31.594
	July	1.232	1.502	0.200	1.613	0.241	0.224	0.007	5.020	36.614
	August	1.630	1.564	0.196	1.641	0.225	0.261	0.008	5.525	42.138
	September	1.445	1.473	0.190	1.587	0.201	0.235	0.007	5.137	47.275
	October	1.717	1.540	0.202	1.655	0.213	0.225	0.008	5.561	52.836
	November	1.528	1.505	0.205	1.671	0.237	0.207	0.008	5.361	58.197
	December	1.363	1.544	0.200	1.762	0.240	0.222	0.009	5.340	63.537
	TOTAL	**17.406**	**18.064**	**2.398**	**19.875**	**2.957**	**2.748**	**0.089**	**63.537**	
1980	January	1.489	1.555	0.200	1.772	0.267	0.213	0.008	5.503	5.503
	February	1.421	1.463	0.188	1.663	0.226	0.208	0.008	5.175	10.679
	March	1.514	R1.566	R0.191	1.782	0.257	0.216	0.008	R5.535	R16.213
	April	R1.652	1.509	0.193	R1.626	0.272	0.202	0.008	R5.463	R21.676
	May	1.641	1.568	0.193	1.712	0.305	0.198	0.010	5.626	27.302
	TOTAL (Year-to-date)	**7.717**	**7.660**	**0.965**	**8.556**	**1.326**	**1.036**	**0.042**	**27.302**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Includes bituminous coal, lignite, and anthracite.
[2]Includes lease condensate.
[3]Natural gas plant liquids.
[4]Includes industrial and utility production of hydropower.
[5]Includes geothermal power and electricity produced from wood and waste.
R=Revised data.
Source: •Energy Information Administration calculations based on data reported elsewhere in this publication.

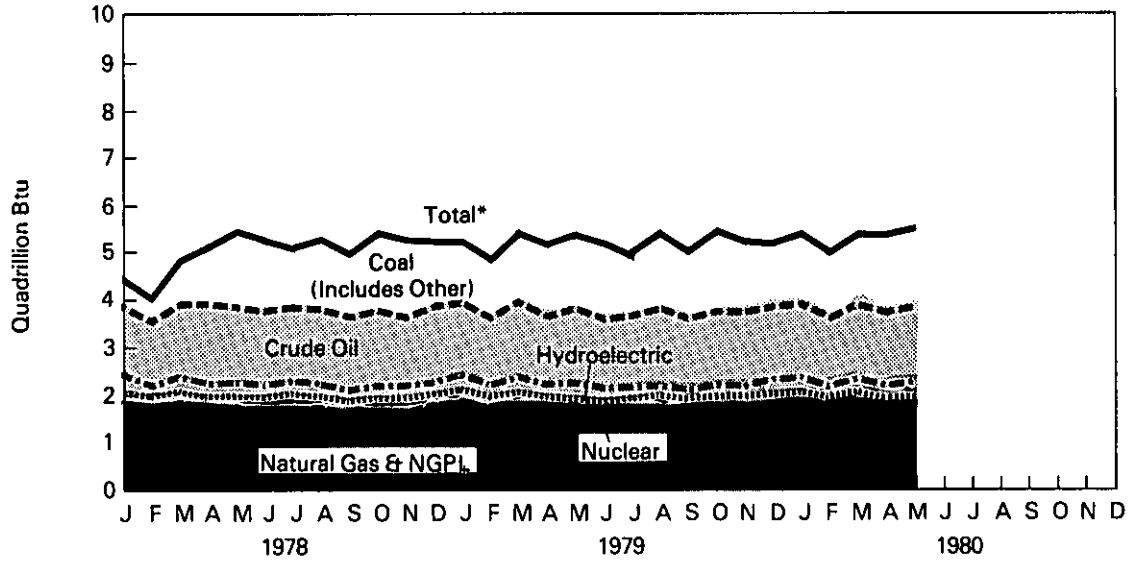
Executive Summary

Production of Energy by Type

Yearly



Monthly



*Btu equivalents for all fuels are cumulated to create total.

Executive Summary

Consumption of Energy by Type

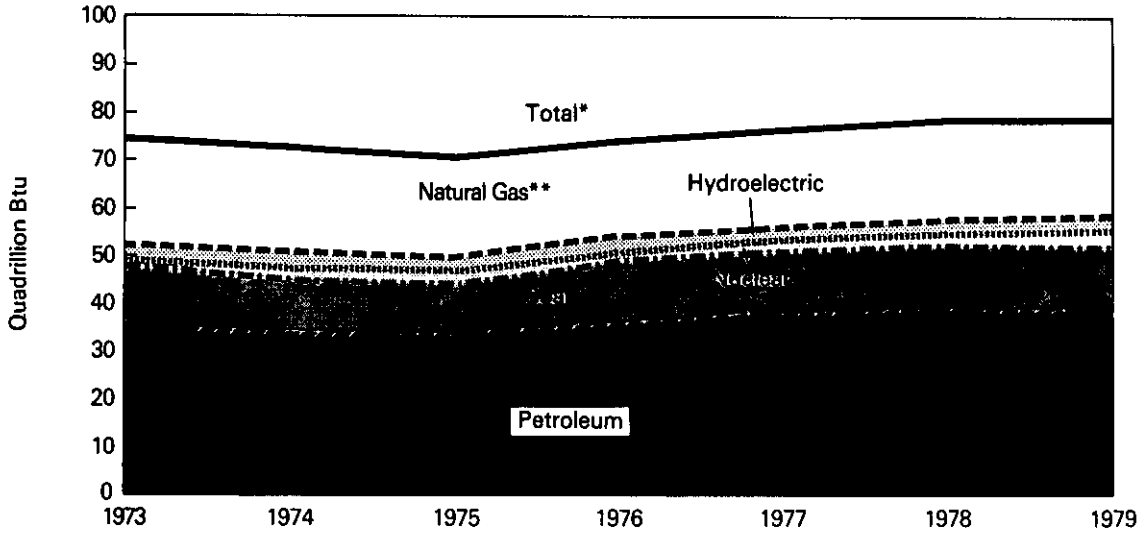
		Coal[1]	Natural Gas (Dry)	Petroleum	Hydroelectric Power[2]	Nuclear Electric Power	Net Imports of Coal Coke[3]	Other[4]	Total Energy Consumed	Yearly Cumulative Energy Consumed
					Quadrillion (10^{15}) Btu					
1973	**TOTAL**	**13.300**	**22.512**	**34.840**	**3.010**	**0.910**	**(0.008)**	**0.046**	**74.609**	
1974	**TOTAL**	**12.876**	**21.732**	**33.455**	**3.309**	**1.272**	**0.059**	**0.056**	**72.759**	
1975	**TOTAL**	**12.823**	**19.948**	**32.731**	**3.219**	**1.900**	**0.014**	**0.072**	**70.707**	
1976	**TOTAL**	**13.732**	**20.345**	**35.175**	**3.066**	**2.111**	**0.000**	**0.081**	**74.509**	
1977	**TOTAL**	**13.965**	**19.931**	**37.176**	**2.519**	**2.702**	**0.015**	**0.082**	**76.390**	
1978	January	1.203	2.427	3.379	0.282	0.278	0.001	0.007	7.579	7.579
	February	1.007	2.180	3.230	0.251	0.235	0.001	0.006	6.910	14.488
	March	0.959	1.954	3.362	0.278	0.242	0.005	0.005	6.806	21.294
	April	1.025	1.568	2.938	0.284	0.189	0.012	0.004	6.022	27.316
	May	1.094	1.406	3.119	0.321	0.220	0.025	0.004	6.189	33.505
	June	1.169	1.273	3.023	0.282	0.239	0.009	0.005	6.000	39.505
	July	1.245	1.358	3.017	0.275	0.269	0.015	0.005	6.184	45.689
	August	1.286	1.309	3.189	0.251	0.276	0.013	0.006	6.331	52.020
	September	1.218	1.258	2.973	0.241	0.239	0.012	0.007	5.947	57.968
	October	1.174	1.467	3.151	0.223	0.248	0.015	0.005	6.283	64.251
	November	1.177	1.690	3.172	0.228	0.268	0.013	0.006	6.552	70.804
	December	1.289	2.108	3.412	0.251	0.274	0.009	0.007	7.350	78.154
	TOTAL	**13.846**	**20.000**	**37.965**	**3.168**	**2.977**	**0.131**	**0.068**	**78.154**	
1979	January	1.357	2.463	3.534	0.281	0.299	0.004	0.007	7.946	7.946
	February	1.207	2.237	3.268	0.241	0.279	0.003	0.006	7.240	15.186
	March	1.216	1.912	3.282	0.291	0.262	0.002	0.008	6.972	22.157
	April	1.144	1.616	2.867	0.285	0.198	0.005	0.007	6.123	28.280
	May	1.197	1.454	3.031	0.323	0.162	0.011	0.007	6.186	34.466
	June	1.242	1.339	2.926	0.281	0.173	0.010	0.007	5.978	40.444
	July	1.339	1.348	2.918	0.258	0.224	0.008	0.007	6.103	46.547
	August	1.347	1.362	3.111	0.242	0.261	0.009	0.008	6.340	52.887
	September	1.202	1.347	2.859	0.218	0.235	0.008	0.007	5.877	58.764
	October	1.229	1.579	3.101	0.231	0.225	0.004	0.008	6.377	65.141
	November	1.228	1.792	3.024	0.253	0.207	0.000	0.008	6.512	71.654
	December	1.333	2.096	3.214	0.258	0.222	0.002	0.009	7.133	78.787
	TOTAL	**15.040**	**20.546**	**37.135**	**3.163**	**2.748**	**0.066**	**0.089**	**78.787**	
1980	January	1.429	2.323	3.167	0.284	0.213	0.003	0.008	7.427	7.427
	February	1.339	2.235	2.996	0.242	0.208	(0.001)	0.008	7.026	14.453
	March	1.321	2.220	R2.956	0.275	0.216	(0.003)	0.008	R6.993	R21.446
	April	1.180	R1.599	2.854	0.289	0.202	(0.005)	0.008	R6.128	R27.574
	May	1.187	1.447	2.827	0.322	0.198	(0.006)	0.010	5.985	33.559
	TOTAL (Year-to-date)	**6.454**	**9.824**	**14.801**	**1.412**	**1.036**	**(0.011)**	**0.042**	**33.559**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Includes bituminous coal, lignite, and anthracite.
[2]Includes industrial and utility production, and net imports of electricity.
[3]Parentheses indicate exports are greater than imports.
[4]Includes geothermal power and electricity produced from wood and waste.
R = Revised data.
Source: •Energy Information Administration calculations based on data reported elsewhere in this publication.

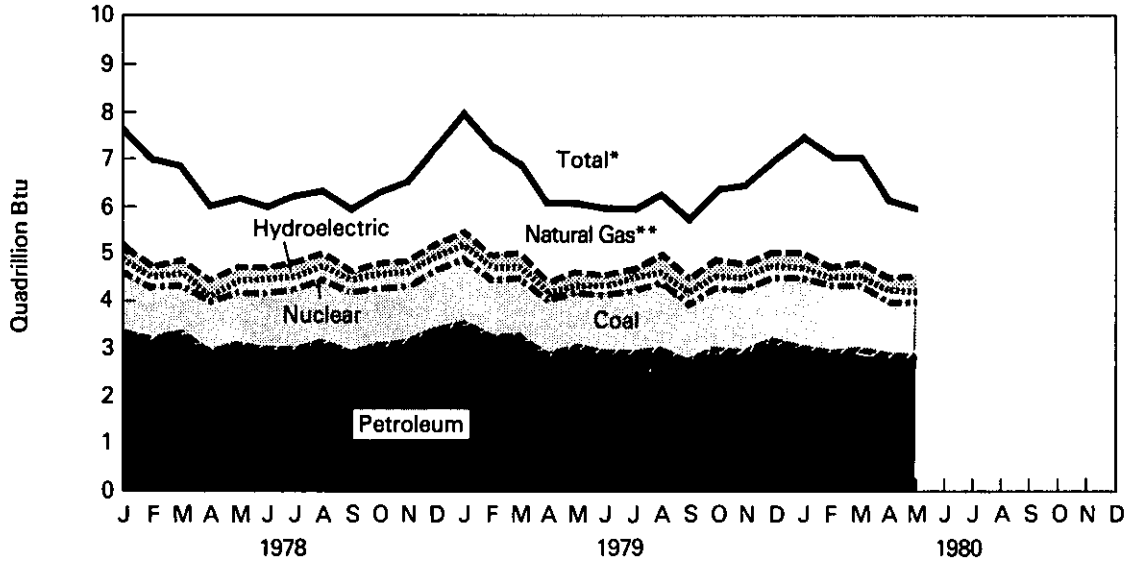
Executive Summary

Consumption of Energy by Type

Yearly



Monthly



*Btu equivalents for all fuels were cumulated to create total.
**Includes net imports of coal coke and other.

Executive Summary

Net Imports of Energy by Type[1]

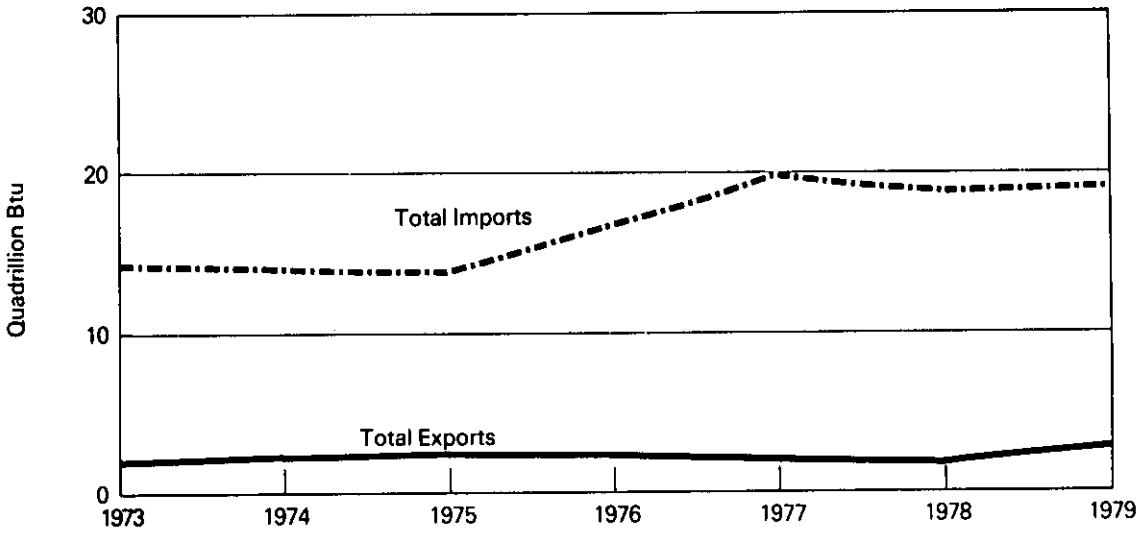
		Coal[2]	Crude Oil[3]	Refined Petroleum Products[4]	Natural Gas (Dry)	Electricity[5]	Coal Coke	Net Imports	Yearly Cumulative Net Imports of Energy
					Quadrillion (10^{15}) Btu				
1973	**TOTAL**	**(1.442)**	**6.883**	**6.097**	**0.981**	**0.148**	**(0.008)**	**12.659**	
1974	**TOTAL**	**(1.586)**	**7.389**	**5.273**	**0.907**	**0.133**	**0.059**	**12.174**	
1975	**TOTAL**	**(1.766)**	**8.708**	**3.800**	**0.904**	**0.064**	**0.014**	**11.725**	
1976	**TOTAL**	**(1.590)**	**11.221**	**3.982**	**0.922**	**0.089**	**0.000**	**14.625**	
1977	**TOTAL**	**(1.424)**	**13.921**	**4.321**	**0.981**	**0.182**	**0.015**	**17.995**	
1978	January	(0.021)	1.105	0.358	0.084	0.017	0.001	1.544	1.544
	February	(0.012)	0.935	0.360	0.074	0.016	0.001	1.374	2.918
	March	(0.004)	1.098	0.394	0.084	0.017	0.005	1.594	4.512
	April	(0.060)	0.963	0.335	0.077	0.017	0.012	1.345	5.857
	May	(0.113)	1.008	0.299	0.071	0.017	0.025	1.308	7.165
	June	(0.139)	1.092	0.257	0.066	0.017	0.009	1.302	8.467
	July	(0.089)	1.114	0.325	0.069	0.017	0.015	1.451	9.918
	August	(0.092)	1.125	0.302	0.071	0.017	0.013	1.436	11.354
	September	(0.088)	1.184	0.315	0.069	0.017	0.012	1.508	12.863
	October	(0.127)	1.137	0.282	0.079	0.017	0.015	1.404	14.267
	November	(0.160)	1.151	0.328	0.091	0.017	0.013	1.439	15.706
	December	(0.118)	1.213	0.378	0.106	0.017	0.009	1.605	17.311
	TOTAL	**(1.023)**	**13.125**	**3.932**	**0.941**	**0.206**	**0.131**	**17.311**	
1979	January	(0.093)	1.202	0.372	0.099	0.017	0.004	1.602	1.602
	February	(0.067)	1.013	0.311	0.095	0.016	0.003	1.371	2.973
	March	(0.122)	1.078	0.398	0.111	0.017	0.002	1.485	4.457
	April	(0.138)	1.036	0.258	0.104	0.017	0.005	1.282	5.739
	May	(0.165)	1.095	0.287	0.102	0.017	0.011	1.349	7.088
	June	(0.156)	1.111	0.260	0.099	0.017	0.010	1.341	8.429
	July	(0.168)	1.105	0.310	0.101	0.017	0.008	1.374	9.803
	August	(0.160)	1.181	0.290	0.096	0.017	0.009	1.434	11.237
	September	(0.134)	1.085	0.243	0.096	0.017	0.008	1.315	12.552
	October	(0.197)	1.201	0.283	0.107	0.017	0.004	1.415	13.967
	November	(0.163)	1.025	0.305	0.114	0.017	0.000	1.298	15.265
	December	(0.166)	1.090	0.378	0.109	0.017	0.002	1.432	16.696
	TOTAL	**(1.729)**	**13.223**	**3.697**	**1.234**	**0.206**	**0.066**	**16.696**	
1980	January	(0.117)	1.088	0.325	0.118	0.017	0.003	1.434	1.434
	February	(0.104)	0.947	0.292	0.111	0.016	(0.001)	1.261	2.696
	March	(0.150)	R0.982	R0.274	0.106	0.017	(0.003)	R1.228	R3.923
	April	(0.202)	0.921	0.215	R0.088	0.017	(0.005)	R1.034	R4.957
	May	(0.227)	0.844	0.211	0.071	0.017	(0.006)	0.912	5.869
	TOTAL (Year-to-date)	**(0.800)**	**4.783**	**1.317**	**0.494**	**0.086**	**(0.011)**	**5.869**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Net imports = imports minus exports. Parentheses indicate exports are greater than imports.
[2]Includes bituminous coal, lignite, and anthracite.
[3]Includes crude oil, lease condensate, and imports of crude oil for the Strategic Petroleum Reserve.
[4]Includes refined petroleum products, unfinished oils, natural gasoline, and plant condensate.
[5]Only yearly totals are available for electricity imports and exports of data. Figures shown are estimates derived by dividing the yearly net import total by the number of days in the year and multiplying by the number of days in the month. Annual data for 1978 are used in estimating 1979 and 1980 data until actual annual data become available for those years.
R = Revised data.
Source: •Energy Information Administration calculations based on data reported elsewhere in this publication.

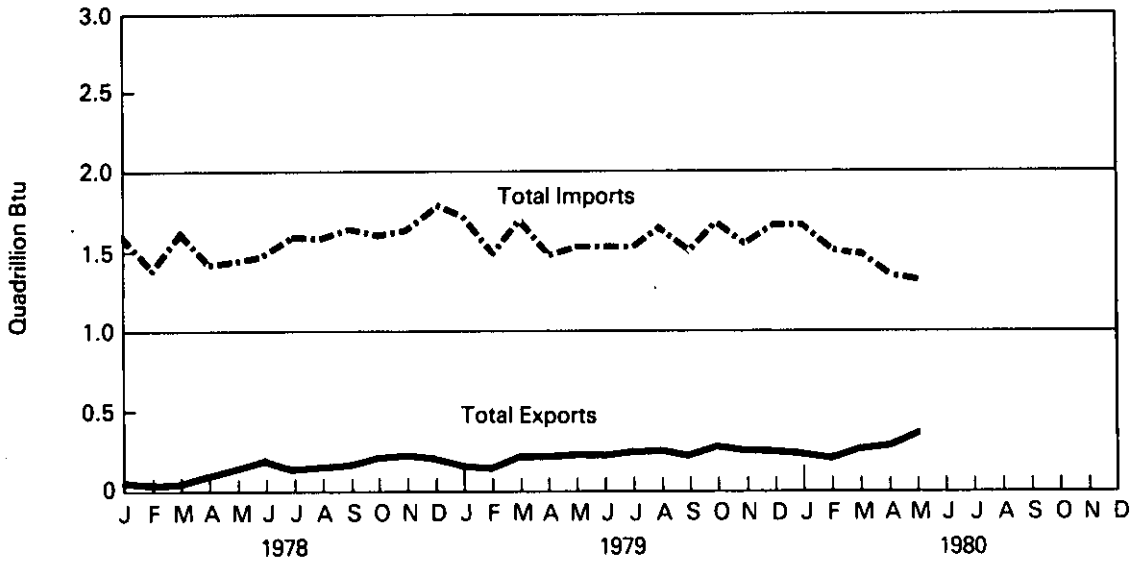
Executive Summary

Energy Imports and Exports

Yearly



Monthly



Executive Summary

Merchandise Trade Value[1]

		Exports				Imports			
		Energy	Manufactured Products	Agricultural, Chemical, and Other	Total	Energy	Manufactured Products	Agricultural, Chemical, and Other	Total
		Million dollars							
1973	**TOTAL**	**1,671**	**38,982**	**29,643**	**70,296**	**8,173**	**42,537**	**19,122**	**69,832**
1974	**TOTAL**	**3,444**	**54,704**	**39,085**	**97,233**	**25,454**	**51,205**	**23,989**	**100,648**
1975	**TOTAL**	**4,470**	**62,260**	**39,832**	**106,562**	**26,476**	**47,384**	**22,714**	**96,574**
1976	**TOTAL**	**4,226**	**67,282**	**42,159**	**113,667**	**33,996**	**60,004**	**27,010**	**121,010**
1977	**TOTAL**	**4,184**	**69,339**	**45,484**	**119,007**	**44,537**	**71,583**	**31,550**	**147,670**
1978	January	189	5,346	3,670	9,205	3,422	6,604	2,692	12,718
	February	141	5,472	3,719	9,332	3,502	7,027	2,722	13,252
	March	165	7,082	4,578	11,826	3,431	7,896	3,221	14,548
	April	285	6,938	4,632	11,854	3,514	7,908	3,065	14,486
	May	364	7,130	4,741	12,234	3,234	7,840	3,126	14,199
	June	426	7,016	4,821	12,264	3,472	8,086	2,957	14,514
	July	322	6,198	4,251	10,770	3,377	8,311	3,014	14,702
	August	335	6,471	4,612	11,418	3,675	7,553	2,793	14,022
	September	348	7,165	4,992	12,505	3,699	7,800	2,919	14,418
	October	422	7,659	4,843	12,924	3,492	8,466	3,161	15,118
	November	466	7,554	5,391	13,411	3,536	8,405	3,107	15,049
	December	418	7,819	5,061	13,298	3,743	7,990	3,220	14,952
	TOTAL	**3,881**	**81,850**	**55,310**	**141,041**	**42,096**	**93,887**	**35,996**	**171,979**
1979	January	350	7,035	4,965	12,349	4,228	8,391	3,227	15,846
	February	292	7,446	4,966	12,705	3,525	7,480	2,771	13,776
	March	436	8,842	6,020	15,298	3,948	8,432	3,385	15,765
	April	467	8,038	5,506	14,011	4,241	8,550	3,381	16,172
	May	471	8,474	5,584	14,529	4,166	8,690	3,655	16,512
	June	500	8,527	6,054	15,081	4,528	9,247	3,661	17,436
	July	534	7,879	6,077	14,490	5,075	8,778	3,262	17,115
	August	496	7,981	6,237	14,714	5,460	8,988	3,482	17,931
	September	438	8,086	6,142	14,666	6,084	8,539	3,452	18,076
	October	567	9,072	7,352	16,991	6,559	9,255	3,430	19,243
	November	522	8,849	7,577	16,948	5,411	9,363	3,884	18,658
	December	543	9,030	7,039	16,612	6,836	9,037	3,924	19,797
	TOTAL	**5,616**	**99,259**	**73,519**	**178,394**	**60,061**	**104,750**	**41,514**	**206,327**
1980	January	481	8,837	6,696	16,015	6,559	9,779	3,801	20,139
	February	436	9,684	6,556	16,675	7,742	9,226	3,671	20,639
	March	567	10,870	7,865	19,302	7,392	9,821	3,848	21,060
	April	631	10,481	6,691	17,803	6,346	9,597	3,737	19,681
	May	737	10,574	7,079	18,390	6,895	9,881	3,818	20,593
	June	730	10,570	7,000	18,300	6,938	9,745	3,837	20,520
	TOTAL (Year-to-date)	**3,582**	**61,016**	**41,887**	**106,485**	**41,872**	**58,049**	**22,712**	**122,632**

Note: The U.S. trade statistics include the 50 States, the District of Columbia, and Puerto Rico, except data on shipments between the United States, Puerto Rico, and U.S. possessions, between U.S. possessions and foreign countries, shipments to U.S. Armed Forces and diplomatic missions abroad for their own use and American goods returned to the United States by its Armed Forces, intransit shipments, etc.

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

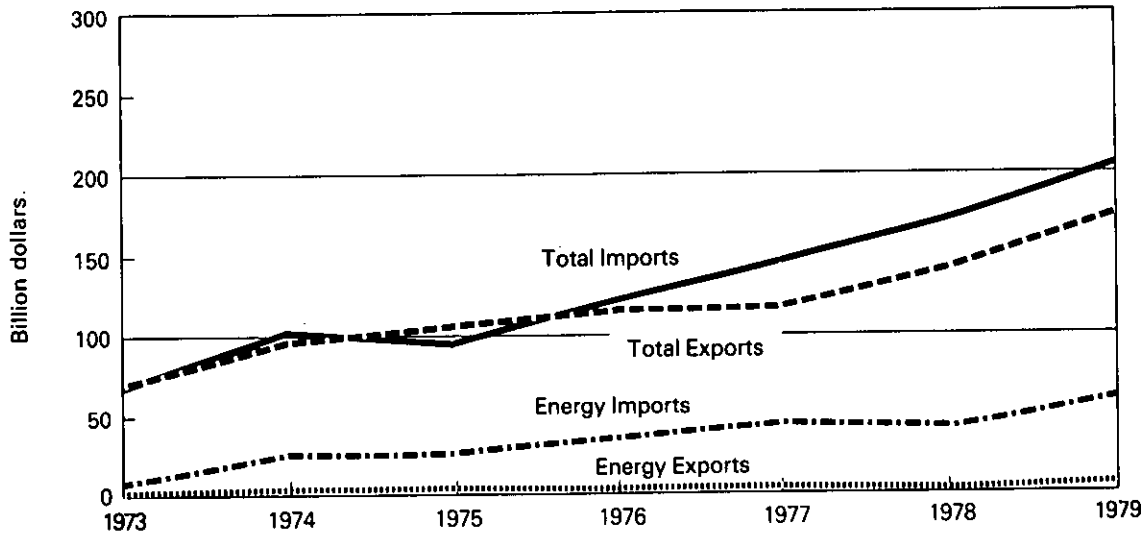
[1]Data presented are free alongside ship (f.a.s.) basis and are unadjusted for seasonality and working days. Beginning January 1979, the data excludes U.S. Department of Defense Military Assistance Program Grant-Aid Shipments. Commodity categories shown above include groups of BOC sections as follows: Energy—BOC section 3. (Mineral fuels, lubricants, and related materials). Manufactured products—BOC sections 6. (Manufactured goods classified chiefly by material), 7. (Machinery and transport equipment), and 8. (Miscellaneous manufactured articles, not elsewhere classified). Agricultural, chemical, and other—BOC sections 0. (Food and live animals), 1. (Beverages and tobacco), 2. (Crude material inedible, except fuels), 4. (Animal and vegetable fats and oils), 5. (Chemicals), and 9. (Commodities and transactions not classified according to kind).

Source: • U.S. Department of Commerce, Bureau of the Census (BOC) publication FT 900, *Summary of U.S. Export and Import Merchandise Trade.*

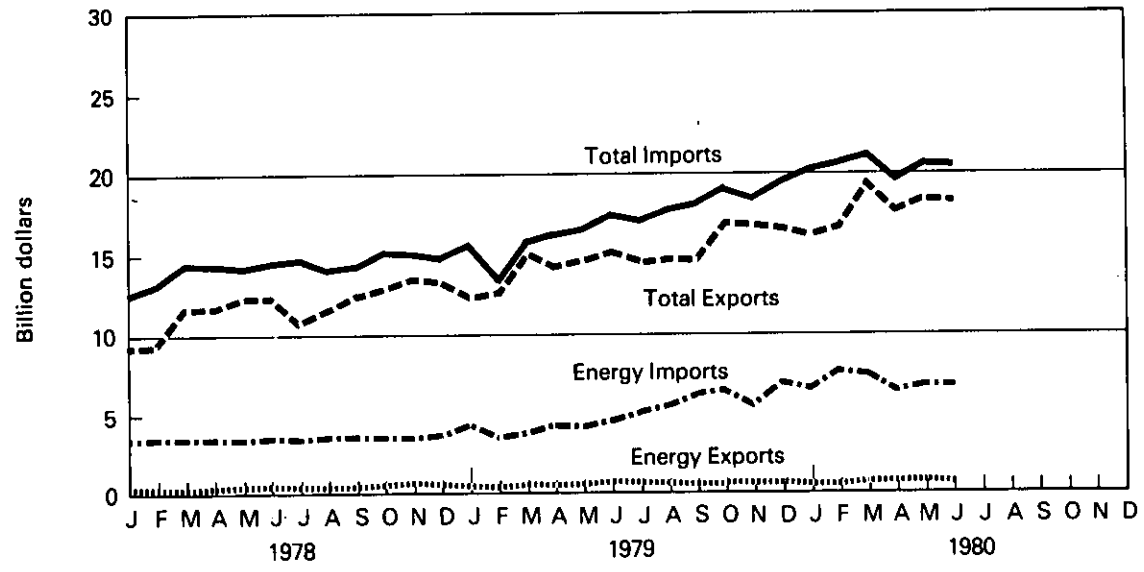
Executive Summary

Merchandise Trade Value

Yearly



Monthly



Executive Summary

Cooling Degree-Days[1]

Petroleum Administration For Defense (PAD) Districts	June 30 through August 3					January 1 through August 3				
	1980	1979[2]		Normal (1941–70)[2]		1979–80	1978–79		Normal (1941–70[2])	
PAD District I	470	416	(12.9)	388	(21.0)	846	760	(11.3)	776	(9.1)
New England	337	343	(−1.8)	261	(29.1)	453	482	(−6.1)	374	(21.1)
Conn., Maine, Mass., N.H., R.I., Vt.										
Middle Atlantic	426	379	(12.3)	354	(20.3)	642	569	(12.8)	579	(10.9)
Del., Md., N.J., N.Y., Pa.										
Lower Atlantic	594	504	(17.9)	496	(19.9)	1,326	1,170	(13.4)	1,248	(6.2)
Fla., Ga., N.C., S.C., Va., W. Va.										
PAD District II	432	315	(37.2)	331	(30.2)	690	564	(22.3)	600	(15.0)
Ill., Ind., Iowa, Kans., Ky., Mich., Minn., Mo., Nebr., N. Dak., Ohio, Okla., S. Dak., Tenn., Wisc.										
PAD District III	766	608	(26.0)	614	(24.8)	1,661	1,374	(20.8)	1,484	(11.9)
Ala., Ark., La., Miss., N. Mex., Tex.										
PAD District IV	367	345	(6.3)	310	(19.8)	528	493	(6.9)	427	(23.5)
Colo., Idaho, Mont., Utah, Wyo.										
PAD District V	267	256	(4.4)	237	(12.7)	449	533	(−15.7)	441	(2.0)
Ariz., Calif., Nev., Oreg., Wash.										
U.S. AVERAGE[3]	**461**	**382**	**(20.9)**	**373**	**(23.6)**	**828**	**731**	**(13.3)**	**747**	**(10.9)**

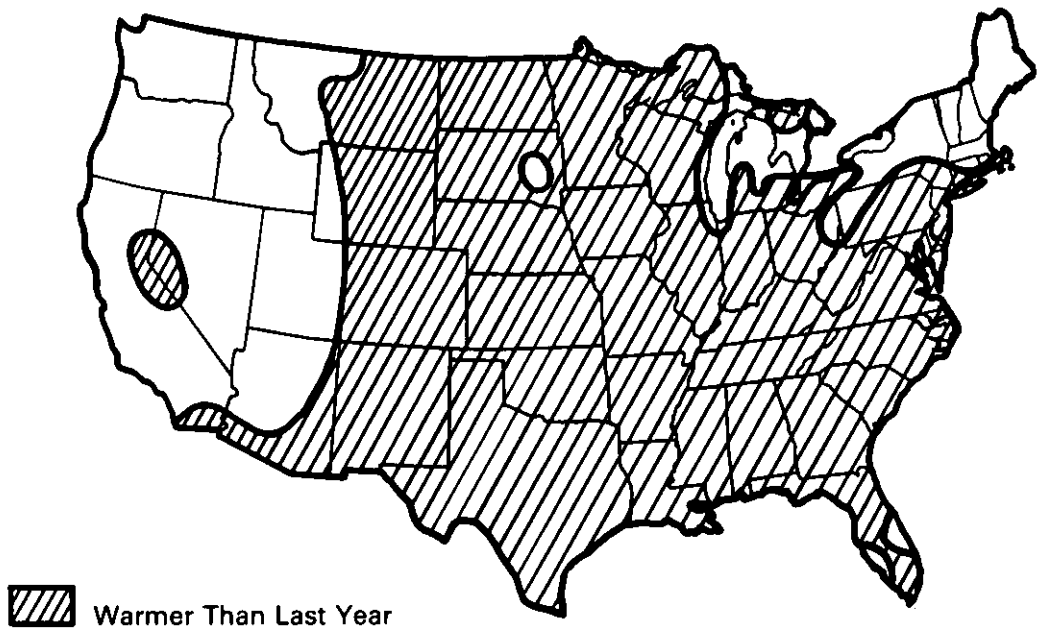
[1]See Explanatory Note 6 for explanation of degree-days.
[2]Percentage change in parentheses.
[3]Excludes Alaska and Hawaii.

Executive Summary

Cooling Degree-Days

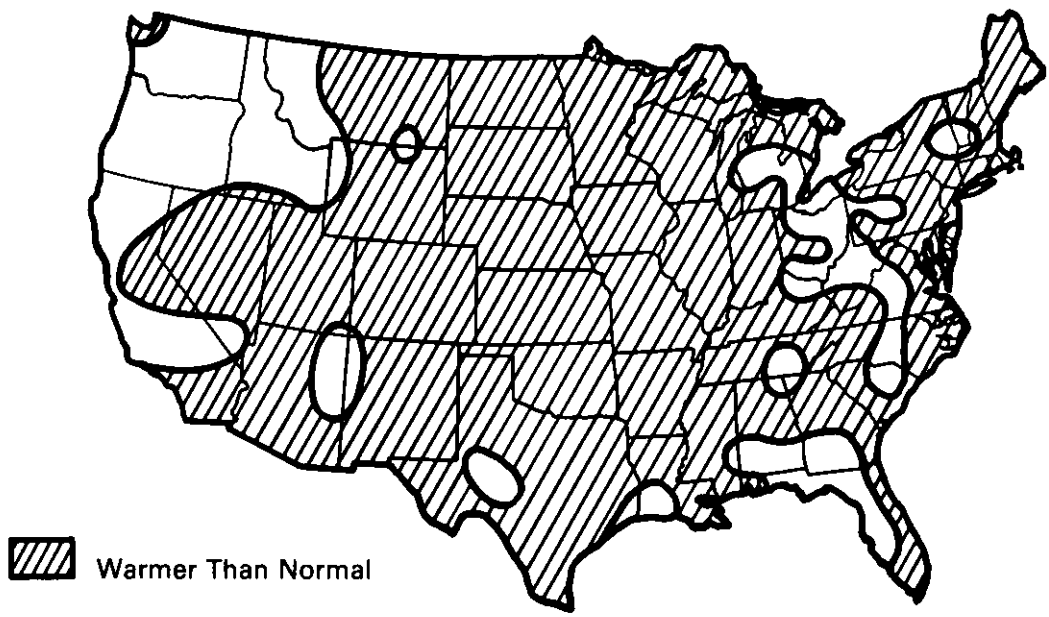
Cooling Degree-Days Accumulated from January 1 through August 3

Departure from Last Year



Warmer Than Last Year

Departure from Normal



Warmer Than Normal

Source: • Department of Commerce — NOAA.

Executive Summary

Energy Indicators—

		Energy Consumption per GNP Dollar				U.S. Dependence on Petroleum Imports[3]			
				Gross National Product (Annual rate)		Direct Imports			
		Energy Consumption per GNP Dollar[1]	Yearly Rate of Energy Consumption	Current Dollars	1972 Dollars[2]	From Arab/OPEC Countries	From OPEC Countries	Total All Countries	Domestic Petroleum Products Supplied
ANNUAL RATE			Quadrillion Btu	Trillion dollars		Million barrels per day			
1973	**AVERAGE**	**60.4**	**74.609**	**1.307**	**1.235**	**0.91**	**2.99**	**6.26**	**17.31**
1974	**AVERAGE**	**59.7**	**72.759**	**1.413**	**1.218**	**0.75**	**3.28**	**6.11**	**16.65**
1975	**AVERAGE**	**58.8**	**70.707**	**1.529**	**1.202**	**1.38**	**3.60**	**6.06**	**16.32**
1976	**AVERAGE**	**58.5**	**74.509**	**1.702**	**1.273**	**2.42**	**5.07**	**7.31**	**17.46**
1977	**AVERAGE**	**57.0**	**76.390**	**1.900**	**1.341**	**3.18**	**6.19**	**8.81**	**18.43**
1978	1st Qtr	63.1	86.359	2.011	1.368	2.90	5.75	8.32	20.08
	2nd Qtr	52.4	73.044	2.104	1.395	2.76	5.31	7.79	18.08
	3rd Qtr	52.1	73.250	2.160	1.407	2.98	5.82	8.53	18.08
	4th Qtr	56.1	80.086	2.235	1.427	3.21	6.12	8.80	19.17
	AVERAGE	**55.9**	**78.154**	**2.128**	**1.399**	**2.96**	**5.75**	**8.36**	**18.85**
1979	1st Qtr	62.8	89.859	2.292	1.431	3.24	5.87	8.81	20.30
	2nd Qtr	51.6	73.349	2.330	1.422	3.16	5.44	8.09	17.57
	3rd Qtr	50.7	72.683	2.397	1.433	2.95	5.68	8.31	17.51
	4th Qtr	55.2	79.439	2.457	1.440	2.80	5.46	8.44	18.39
	AVERAGE	**55.0**	**78.787**	**2.369**	**1.432**	**3.04**	**5.61**	**8.41**	**18.43**
1980	1st Qtr	59.3	85.640	2.520	1.444	2.96	4.89	7.79	18.12

Geographic coverage: the 50 United States and District of Columbia.
[1]Thousand Btu per 1972 constant dollar.
[2]Current dollars converted to 1972 constant dollars by the formula:

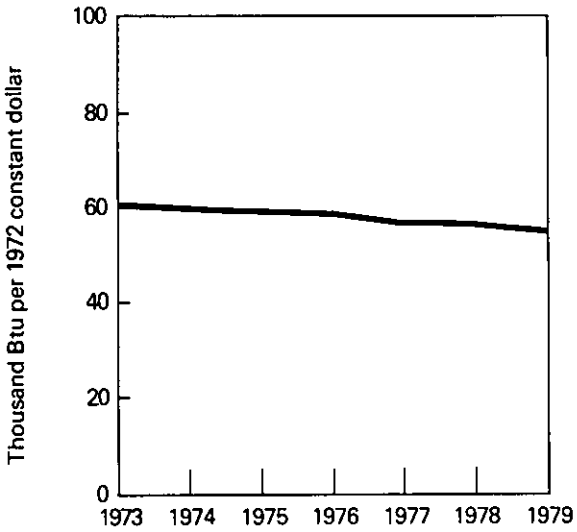
$$\text{Constant 1972 dollars} = \frac{\text{Current dollars in year N}}{\text{Gross National Product implicit price deflator in year N}} \times 100$$

The Gross National Product deflators (1972 = 100) were determined by the Department of Commerce, Bureau of Economic Analysis. GNP rates are from the Business Conditions Digest published by the Bureau of Economic Analysis.
[3]Beginning in October 1977 Strategic Petroleum Reserve imports are included.
Note: This page is updated every quarter, during the months of March, June, September, and December. In other months, data appearing elsewhere in this publication are more current.

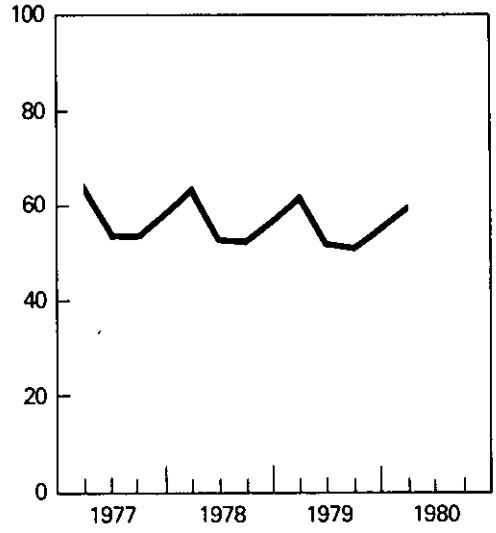
Executive Summary

Energy Consumption per GNP Dollar

Yearly

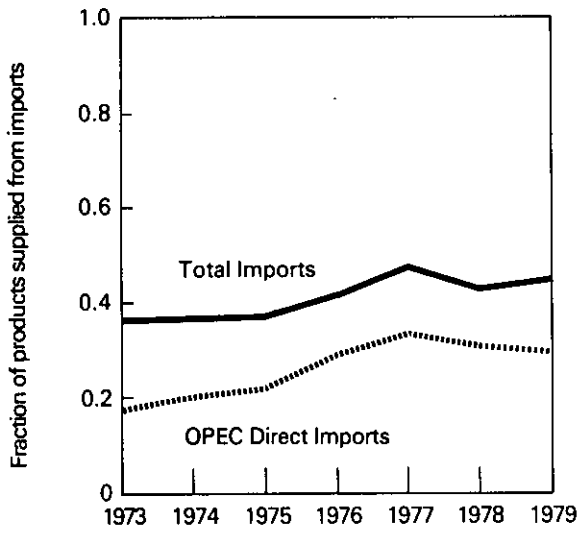


Quarterly

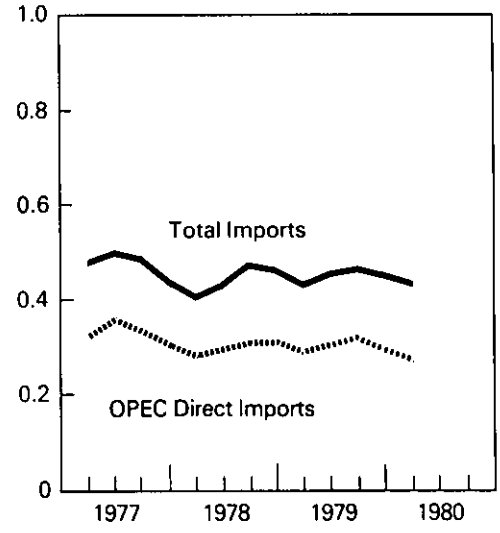


U.S. Dependence on Petroleum Imports

Yearly



Quarterly

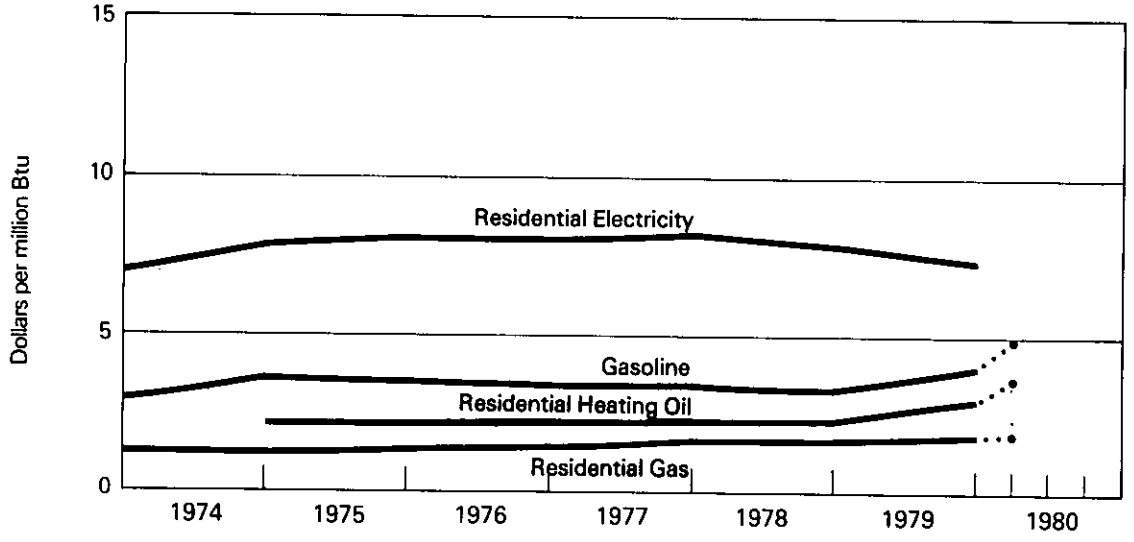


Executive Summary

Energy Indicator—Cost of Fuels to End Users (1972 Dollars)

		Leaded Regular Motor Gasoline		Residential Heating Oil		Residential Natural Gas		Residential Electricity	
		cent/gal	$/MMBtu	cent/gal	$/MMBtu	cent/Mcf	$/MMBtu	cent/kWh	$/MMBtu
1973	**AVERAGE**	**36.5**	**2.92**	**NA**	**NA**	**121.2**	**1.19**	**2.39**	**7.00**
1974	**AVERAGE**	**44.8**	**3.59**	**29.4**	**2.12**	**121.4**	**1.19**	**2.63**	**7.71**
1975	**AVERAGE**	**43.7**	**3.50**	**29.3**	**2.11**	**132.8**	**1.30**	**2.73**	**8.00**
1976	**AVERAGE**	**43.1**	**3.46**	**30.2**	**2.18**	**145.4**	**1.43**	**2.74**	**8.03**
1977	**AVERAGE**	**43.2**	**3.46**	**31.2**	**2.25**	**162.2**	**1.59**	**2.80**	**8.20**
1978	1st Qtr	41.0	3.28	32.3	2.33	155.0	1.58	2.65	7.76
	2nd Qtr	40.6	3.25	31.4	2.26	169.7	1.73	2.88	8.44
	3rd Qtr	41.3	3.31	30.7	2.21	196.3	2.00	2.85	8.35
	4th Qtr	41.3	3.31	32.1	2.31	164.5	1.68	2.70	7.91
	AVERAGE	**41.0**	**3.28**	**31.7**	**2.29**	**164.4**	**1.62**	**2.76**	**8.10**
1979	1st Qtr	42.6	3.41	33.8	2.44	179.4	1.77	2.51	7.36
	2nd Qtr	47.5	3.80	37.2	2.68	181.3	1.79	2.74	8.03
	3rd Qtr	54.9	4.39	44.0	3.17	189.0	1.86	2.79	8.17
	4th Qtr	55.6	4.44	46.4	3.35	193.1	1.90	2.64	7.74
	AVERAGE	**49.8**	**3.98**	**40.8**	**2.94**	**185.3**	**1.88**	**2.66**	**7.79**
1980	1st Qtr	61.5	4.92	49.8	3.59	190.8	1.88	NA	NA

Average Cost of Fuels to End Users (1972 constant dollars)



Geographic coverage: the 50 United States and District of Columbia.
NA = Not available.
Note: This page is updated every quarter, during the months of March, June, September, and December. In other months, data appearing elsewhere in this publication are more current.
Sources: • Motor Gasoline—1973 through 1977, Lundberg Survey Inc.; 1978 and forward, U.S. Department of Energy Forms EIA-8 and EIA-79, "Retail Motor Fuels Service Station Survey".
- Heating Oil—1974 and 1975, Form CLC-92, "No. 2 Heating Oil Monthly Price Adjustment Report," and 1976 forward, FEA Form P112-M-1, and EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report."
- Natural Gas—1973 through 1978 annual numbers, Bureau of Mines and Energy Information Administration Form 1340-A, "Supply and Disposition of Natural Gas to Non-Producing Distributors;" and Form 1341-A, "Supply and Disposition of Natural Gas to Producers and Pipelines;" 1978 quarterly numbers, the American Gas Association, "Quarterly Report of Gas Industry Operations." 1979 and 1980 quarterly numbers, Bureau of Labor Statistics.
- Electricity—FPC Form 5, "Reports of Classes A and B Privately Owned Electric Utilities."
- Deflator—The Consumer Price Index.

Energy Consumption

Energy consumption in the 50 United States and the District of Columbia in May 1980 was 6.0 quadrillion Btu, 2.3 percent lower than during a month earlier. This figure was 3.2 percent lower than the May 1979 consumption level.

The Residential and Commercial Sector consumption was 2.0 quadrillion Btu in May 1980, 11.1 percent lower than in April 1980 and 4.0 percent lower than the amount consumed during May 1979. The Residential and Commercial Sector consumed 33.4 ercent of the total consumption for May 1980, down from the sector's 33.6 percent share in May 1979.

The Industrial Sector consumption was 2.5 quadrillion Btu in May 1980, up 5.0 percent from April 1980, and up 0.4 percent from the consumption level in May 1979. The Industrial Sector consumed 41.0 percent of the May 1980 total, as compared to the 39.5 percent share of May 1979.

The Transportation Sector consumption was 1.5 quadrillion Btu in May 1980, down 0.6 percent from April 1980 and down 7.7 percent from the consumption level in May 1979. This sector consumed 25.6 percent of the May 1980 total, as compared to a 26.9 percent share in May 1979.

The Electric Utilities consumption was an estimated 2.0 quadrillion Btu of energy in May 1980, 3.1 percent higher than in the previous month, and 0.7 percent higher than the energy consumed in May 1979. Coal contributed 45.6 percent of the energy consumed by Electric Utilities in May 1980, while hydroelectric power contributed 16.4 percent, natural gas 14.9 percent, petroleum 12.5 percent, nuclear power 10.2 percent, and geothermal, wood and waste 0.5 percent.

> In this issue of the *Monthly Energy Review*, revisions have been made to the natural gas end-use consumption data to reflect improvements in methods of estimating end-use. See page 24, item 3, for details of the new end-use estimates.

Consumption

Energy Consumption Summary for May 1980
Quadrillion (10^{15}) Btu

Primary Energy Source	Sector: Residential and Commercial	Industrial	Transportation	Electric Utilities	TOTAL
Coal	0.014	0.282	0.000	0.890	1.187
Natural Gas (dry)	0.450	0.669	0.037	0.291	1.447
Petroleum	0.473	0.616	1.496	0.243	2.827
Hydroelectric	0.000	0.003	0.000	0.319	0.322
Nuclear	0.000	0.000	0.000	0.198	0.198
Net Coke Imports	0.000	(0.006)	0.000	0.000	(0.006)
Other	0.000	0.000	0.000	0.010	0.010
TOTAL PRIMARY ENERGY	**0.936**	**1.565**	**1.533**	**1.951**	**5.985**
Electricity Sales	0.298	0.249	0.001	(0.548)	
Net Energy Consumption	1.235	1.814	1.534		4.583
Electrical Energy Losses	0.763	0.638	0.002	(1.402)	1.402
TOTAL ENERGY CONSUMED	**1.997**	**2.452**	**1.535**		**5.985**

Totals may not equal sum of components due to independent rounding.
Notes and sources for this table and all other tables in this section are provided on the last page of this section.

Consumption

Consumption of Energy by the End-Use Sector[1]

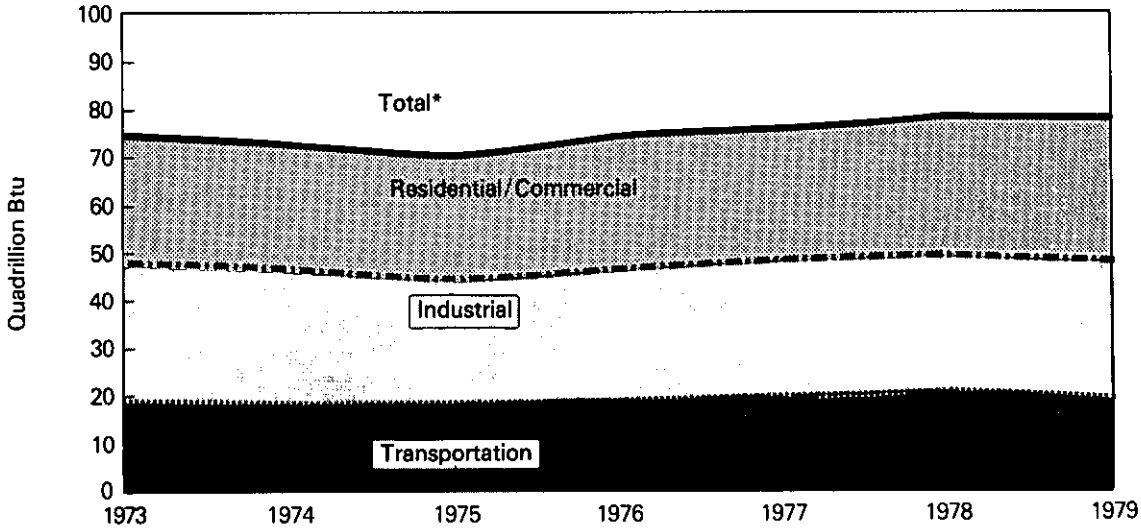
		Residential and Commercial	Industrial	Transportation	Total Energy Consumed
			Quadrillion (10^{15}) Btu		
1973	**TOTAL**	**R27.396**	**R28.685**	**R18.525**	**74.609**
1974	**TOTAL**	**R26.699**	**R27.998**	**R18.057**	**72.759**
1975	**TOTAL**	**R26.635**	**R25.881**	**18.186**	**70.707**
1976	**TOTAL**	**R27.831**	**R27.603**	**19.071**	**74.509**
1977	**TOTAL**	**R28.193**	**R28.442**	**19.751**	**76.390**
1978	January	R3.183	R2.677	R1.718	7.579
	February	R3.060	R2.213	R1.636	6.910
	March	R2.796	R2.209	R1.800	6.806
	April	R2.195	R2.193	R1.633	6.022
	May	R2.083	R2.353	R1.753	6.189
	June	R2.018	R2.268	R1.714	6.000
	July	R2.136	R2.352	R1.696	6.184
	August	R2.174	R2.370	R1.787	6.331
	September	R2.016	R2.302	R1.629	5.947
	October	R2.051	R2.511	R1.721	6.283
	November	R2.262	R2.565	R1.725	6.552
	December	R2.832	R2.703	R1.814	7.350
	TOTAL	**R28.807**	**R28.716**	**R20.626**	**78.154**
1979	January	R3.429	R2.736	R1.780	7.946
	February	R3.234	R2.322	R1.684	7.240
	March	R2.816	R2.402	R1.753	6.972
	April	R2.304	R2.235	R1.584	6.123
	May	R2.081	R2.442	R1.663	6.186
	June	R1.994	R2.389	R1.595	5.978
	July	R2.101	R2.415	R1.587	6.103
	August	R2.203	R2.455	R1.682	6.340
	September	R1.999	R2.326	R1.552	5.877
	October	R2.104	R2.621	R1.651	6.377
	November	R2.326	R2.597	R1.589	6.512
	December	R2.778	R2.688	R1.667	7.133
	TOTAL	**R29.369**	**R29.627**	**R19.786**	**78.787**
1980	January	R3.093	R2.716	R1.618	7.427
	February	R3.026	R2.445	R1.555	7.026
	March	R2.793	R2.614	1.586	R6.993
	April	R2.247	R2.336	R1.544	R6.128
	May	1.997	2.452	1.535	5.985
	TOTAL (Year-to-date)	**13.157**	**12.562**	**7.838**	**33.559**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]See Explanatory Note 5 for definitions of the Residential and Commercial, Industrial, and Transportation Sectors. The methodology used for sector calculations is provided in the Notes and Sources on the last page of this section.
R = Revised data.
Source: •See Notes and Sources on the last page of this section.

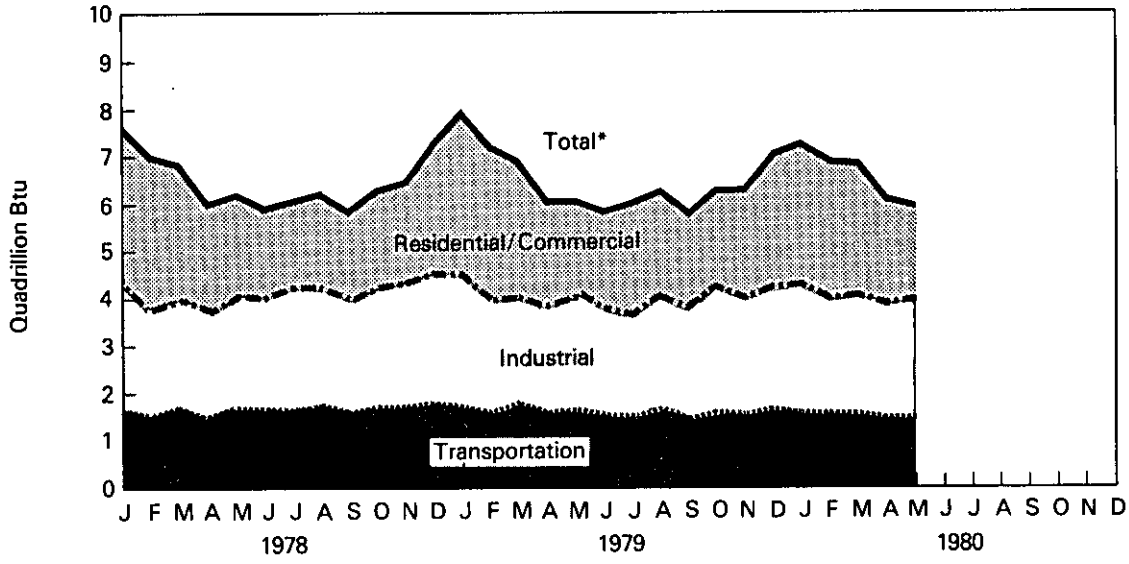
Consumption

Consumption of Energy by End-Use Sector

Yearly



Monthly



*Btu consumption for all sectors was cumulated to create total.

Consumption

Consumption of Energy by the Residential and Commercial Sector[1]

		Coal	Natural Gas (Dry)	Petroleum	Electricity Sales	Electrical Energy Losses[2]	Total Energy Consumed	Yearly Cumulative Energy Consumed
					Quadrillion (10^{15}) Btu			
1973	**TOTAL**	**0.291**	**R7.626**	**7.524**	**3.495**	**8.460**	**R27.396**	
1974	**TOTAL**	**0.293**	**R7.518**	**6.865**	**3.475**	**8.548**	**R26.699**	
1975	**TOTAL**	**0.239**	**R7.581**	**6.413**	**3.588**	**8.814**	**R26.635**	
1976	**TOTAL**	**0.227**	**R7.866**	**6.919**	**3.729**	**9.089**	**R27.831**	
1977	**TOTAL**	**0.225**	**R7.461**	**6.869**	**3.936**	**9.702**	**R28.193**	
1978	January	0.032	R1.222	0.662	0.375	0.892	R3.183	R3.183
	February	0.033	R1.247	0.637	0.367	0.776	R3.060	R6.244
	March	0.023	R1.029	0.611	0.343	0.790	R2.796	R9.040
	April	0.017	R0.677	0.492	0.293	0.716	R2.195	R11.236
	May	0.015	R0.478	0.536	0.284	0.770	R2.083	R13.318
	June	0.015	R0.310	0.528	0.325	0.840	R2.018	R15.336
	July	0.014	R0.261	0.524	0.376	0.961	R2.136	R17.472
	August	0.014	R0.243	0.572	0.386	0.959	R2.174	R19.646
	September	0.016	R0.249	0.537	0.378	0.836	R2.016	R21.662
	October	0.022	R0.354	0.598	0.325	0.752	R2.051	R23.713
	November	0.023	R0.597	0.581	0.304	0.756	R2.262	R25.975
	December	0.026	R0.957	0.637	0.344	0.870	R2.832	R28.807
	TOTAL	**0.250**	**R7.624**	**6.916**	**4.100**	**9.918**	**R28.807**	
1979	January	0.033	R1.294	0.706	0.399	0.997	R3.429	R3.429
	February	0.021	R1.316	0.643	0.388	0.866	R3.234	R6.662
	March	0.016	R0.982	0.579	0.350	0.889	R2.816	R9.478
	April	0.015	R0.740	0.496	0.310	0.744	R2.304	R11.783
	May	0.014	R0.457	0.540	0.297	0.773	R2.081	R13.863
	June	0.014	R0.316	0.527	0.321	0.815	R1.994	R15.857
	July	0.013	R0.270	0.531	0.363	0.924	R2.101	R17.958
	August	0.012	R0.249	0.582	0.390	0.971	R2.203	R20.161
	September	0.015	R0.260	0.528	0.368	0.828	R1.999	R22.160
	October	0.021	R0.359	0.597	0.321	0.806	R2.104	R24.265
	November	0.025	R0.626	0.572	0.314	0.788	R2.326	R26.591
	December	0.027	R0.902	0.606	0.349	0.894	R2.778	R29.369
	TOTAL	**0.226**	**R7.770**	**6.908**	**4.169**	**10.296**	**R29.369**	
1980	January	0.031	R1.113	0.597	0.381	0.970	R3.093	R3.093
	February	0.022	R1.191	0.552	0.375	0.886	R3.026	R6.119
	March	0.018	R1.053	R0.513	0.341	R0.868	R2.793	R8.912
	April	0.016	R0.716	R0.457	0.307	R0.751	R2.247	R11.159
	May	0.014	0.450	0.473	0.298	0.763	1.997	13.157
	TOTAL (Year-to-date)	**0.101**	**4.523**	**2.591**	**1.702**	**4.238**	**13.157**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]The Residential and Commercial Sector consists of housing units, non-manufacturing business establishments (e.g., wholesale and retail businesses), health and educational institutions, and government office buildings. Notes on the methodology used for sector calculations are provided in the Notes and Sources on the last page of this section.
[2]Proportion of total electrical energy losses incurred in the generation and transmission of electricity plus plant use and unaccounted for that are attributed to this sector.
R = Revised data.
Source: • See Notes and Sources on the last page of this section.

Consumption

Consumption of Energy by the Industrial Sector[1]

		Coal	Natural Gas (Dry)	Petroleum	Hydroelectric	Net Coke Imports[2]	Electricity Sales	Electrical Energy Losses[3]	Total Energy Consumed	Yearly Cumulative Energy Consumed
						Quadrillion (10^{15}) Btu				
1973	**TOTAL**	**4.350**	**R10.397**	**5.893**	**0.035**	**(0.008)**	**2.341**	**5.676**	**R28.685**	
1974	**TOTAL**	**4.057**	**R10.012**	**5.750**	**0.033**	**0.059**	**2.337**	**5.751**	**R27.998**	
1975	**TOTAL**	**3.801**	**R8.531**	**5.530**	**0.032**	**0.014**	**2.304**	**5.669**	**R25.881**	
1976	**TOTAL**	**3.791**	**R8.768**	**6.325**	**0.033**	**0.000**	**2.525**	**6.162**	**R27.603**	
1977	**TOTAL**	**3.494**	**R8.642**	**7.106**	**0.037**	**0.015**	**2.635**	**6.513**	**R28.442**	
1978	January	0.337	R0.904	0.685	0.003	0.001	0.221	0.526	R2.677	R2.677
	February	0.279	R0.656	0.628	0.003	0.001	0.208	0.438	R2.213	R4.891
	March	0.249	R0.633	0.625	0.003	0.005	0.210	0.483	R2.209	R7.099
	April	0.269	R0.617	0.550	0.003	0.012	0.215	0.526	R2.193	R9.292
	May	0.277	R0.620	0.583	0.003	0.025	0.227	0.617	R2.353	R11.645
	June	0.273	R0.596	0.547	0.003	0.009	0.234	0.605	R2.268	R13.914
	July	0.288	R0.686	0.547	0.003	0.015	0.229	0.585	R2.352	R16.265
	August	0.289	R0.679	0.561	0.002	0.013	0.237	0.589	R2.370	R18.635
	September	0.287	R0.667	0.564	0.003	0.012	0.239	0.529	R2.302	R20.937
	October	0.292	R0.802	0.593	0.003	0.015	0.243	0.562	R2.511	R23.448
	November	0.294	R0.811	0.616	0.003	0.013	0.238	0.591	R2.565	R26.013
	December	0.326	R0.868	0.681	0.003	0.009	0.231	0.585	R2.703	R28.716
	TOTAL	**3.462**	**R8.540**	**7.179**	**0.036**	**0.131**	**2.732**	**6.637**	**R28.716**	
1979	January	0.315	R0.869	0.729	0.003	0.004	0.233	0.583	R2.736	R2.736
	February	0.295	R0.629	0.646	0.003	0.003	0.231	0.515	R2.322	R5.058
	March	0.300	R0.610	0.656	0.003	0.002	0.235	0.596	R2.402	R7.460
	April	0.289	R0.565	0.574	0.003	0.005	0.235	0.564	R2.235	R9.695
	May	0.289	R0.674	0.598	0.003	0.011	0.240	0.625	R2.442	R12.137
	June	0.282	R0.657	0.579	0.003	0.010	0.242	0.615	R2.389	R14.525
	July	0.318	R0.662	0.577	0.003	0.008	0.239	0.608	R2.415	R16.940
	August	0.298	R0.689	0.611	0.003	0.009	0.242	0.604	R2.455	R19.396
	September	0.286	R0.703	0.549	0.003	0.008	0.239	0.538	R2.326	R21.721
	October	0.290	R0.846	0.622	0.003	0.004	0.244	0.613	R2.621	R24.343
	November	0.287	R0.850	0.621	0.003	0.000	0.238	0.597	R2.597	R26.940
	December	0.306	R0.883	0.677	0.003	0.002	0.230	0.588	R2.688	R29.627
	TOTAL	**3.556**	**R8.636**	**7.439**	**0.037**	**0.066**	**2.847**	**7.046**	**R29.627**	
1980	January	0.325	R0.864	0.703	0.003	0.003	0.231	0.587	R2.716	R2.716
	February	0.306	R0.714	0.639	0.003	(0.001)	0.233	0.551	R2.445	R5.161
	March	R0.311	R0.816	R0.634	0.003	(0.003)	0.240	R0.612	R2.614	R7.774
	April	R0.290	R0.577	R0.639	0.003	(0.005)	0.241	R0.591	R2.336	R10.110
	May	0.282	0.669	0.616	0.003	(0.006)	0.249	0.638	2.452	12.562
	TOTAL (Year-to-date)	**1.514**	**3.640**	**3.232**	**0.016**	**(0.011)**	**1.194**	**2.978**	**12.562**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]The Industrial Sector is made up of construction, manufacturing, agriculture, and mining establishments. Notes on the methodology used for sector calculations are provided in the Notes and Sources on the last page of this section.
[2]Net Imports = imports minus exports. Parentheses indicate exports are greater than imports.
[3]Proportion of total electrical energy losses incurred in the generation and transmission of electricity plus plant use and unaccounted for that are attributed to this sector.
R = Revised data.
Source: •See Notes and Sources on the last page of this section.

Consumption

Consumption of Energy by the Transportation Sector[1]

		Coal	Natural Gas (Dry)	Petroleum	Electricity Sales	Electrical Energy Losses[2]	Total Energy Consumed	Yearly Cumulative Energy Consumed
				Quadrillion (10^{15}) Btu				
1973	**TOTAL**	**0.003**	**0.743**	**17.751**	**0.009**	**0.020**	**R18.525**	
1974	**TOTAL**	**0.002**	**0.685**	**17.341**	**0.009**	**0.021**	**R18.057**	
1975	**TOTAL**	**0.001**	**R0.595**	**17.557**	**0.010**	**0.024**	**18.186**	
1976	**TOTAL**	**(3)**	**0.559**	**18.477**	**0.010**	**0.025**	**19.071**	
1977	**TOTAL**	**(3)**	**0.543**	**19.173**	**0.010**	**0.024**	**19.751**	
1978	January	(3)	R0.065	1.650	0.001	0.002	R1.718	R1.718
	February	(3)	R0.059	1.575	0.001	0.002	R1.636	R3.353
	March	(3)	R0.053	1.745	0.001	0.002	R1.800	R5.153
	April	(3)	R0.042	1.588	0.001	0.001	R1.633	R6.786
	May	(3)	R0.038	1.713	0.001	0.002	R1.753	R8.539
	June	(3)	R0.034	1.677	0.001	0.002	R1.714	R10.253
	July	(3)	R0.037	1.656	0.001	0.002	R1.696	R11.949
	August	(3)	R0.035	1.749	0.001	0.002	R1.787	R13.736
	September	(3)	R0.034	1.593	0.001	0.002	R1.629	R15.365
	October	(3)	R0.040	1.679	0.001	0.002	R1.721	R17.086
	November	(3)	R0.046	1.677	0.001	0.002	R1.725	R18.811
	December	(3)	R0.057	1.755	0.001	0.002	R1.814	R20.626
	TOTAL	**(3)**	**0.539**	**20.057**	**0.009**	**0.020**	**R20.626**	
1979	January	(3)	R0.064	1.714	0.001	0.002	R1.780	R1.780
	February	(3)	R0.058	1.624	0.001	0.002	R1.684	R3.464
	March	(3)	R0.049	1.701	0.001	0.002	R1.753	R5.217
	April	(3)	R0.042	1.540	0.001	0.002	R1.584	R6.801
	May	(3)	R0.038	1.623	0.001	0.002	R1.663	R8.464
	June	(3)	R0.035	1.558	0.001	0.002	R1.595	R10.059
	July	(3)	R0.035	1.549	0.001	0.002	R1.587	R11.645
	August	(3)	R0.035	1.644	0.001	0.002	R1.682	R13.327
	September	(3)	R0.035	1.514	0.001	0.002	R1.552	R14.878
	October	(3)	R0.041	1.607	0.001	0.002	R1.651	R16.529
	November	(3)	R0.046	1.541	0.001	0.002	R1.589	R18.118
	December	(3)	R0.054	1.610	0.001	0.002	R1.667	R19.786
	TOTAL	**(3)**	**0.530**	**19.225**	**0.009**	**0.021**	**R19.786**	
1980	January	(3)	R0.060	1.555	0.001	0.002	R1.618	R1.618
	February	(3)	R0.058	1.495	0.001	0.002	R1.555	R3.173
	March	(3)	R0.057	R1.526	0.001	0.002	1.586	R4.758
	April	(3)	R0.041	R1.501	0.001	0.002	R1.544	R6.303
	May	(3)	0.037	1.496	0.001	0.002	1.535	7.838
	TOTAL (Year-to-date)	**(3)**	**0.254**	**7.572**	**0.004**	**0.009**	**7.838**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]The Transportation Sector consists of both private and public passenger and freight transportation, as well as government transportation, including military operations. Notes on the methodology used for sector calculations are provided in the Notes and Sources on the last page of this section.
[2]Proportion of total electrical energy losses incurred in the generation and transmission of electricity plus plant use and unaccounted for that are attributed to this sector.
[3]Since 1976 the amount of coal consumed by the Transportaion Sector has been negligible.
R=Revised data.
Source: •See Notes and Sources on the last page of this section.

Consumption

Consumption of Energy by the Electric Utilities

		Coal[1]	Natural Gas (Dry)	Petro-leum	Hydro-electric power[2]	Nuclear Electric Power	Other[3]	Total Energy Consumed	Yearly Cumulative Energy Consumed
					Quadrillion (10^{15}) Btu				
1973	**TOTAL**	**8.655**	**3.746**	**3.671**	**2.975**	**0.910**	**0.046**	**20.004**	
1974	**TOTAL**	**8.524**	**3.518**	**3.499**	**3.276**	**1.272**	**0.056**	**20.144**	
1975	**TOTAL**	**8.783**	**3.241**	**3.231**	**3.187**	**1.900**	**0.072**	**20.414**	
1976	**TOTAL**	**9.714**	**3.153**	**3.454**	**3.032**	**2.111**	**0.081**	**21.544**	
1977	**TOTAL**	**10.245**	**3.285**	**4.028**	**2.482**	**2.702**	**0.082**	**22.825**	
1978	January	0.834	0.236	0.383	0.279	0.278	0.007	2.017	2.017
	February	0.695	0.218	0.390	0.248	0.235	0.006	1.792	3.809
	March	0.686	0.240	0.382	0.275	0.242	0.005	1.829	5.637
	April	0.739	0.231	0.308	0.281	0.189	0.004	1.752	7.390
	May	0.802	0.270	0.288	0.318	0.220	0.004	1.901	9.291
	June	0.882	0.332	0.271	0.279	0.239	0.005	2.007	11.299
	July	0.942	0.375	0.290	0.273	0.269	0.005	2.154	13.453
	August	0.983	0.353	0.307	0.249	0.276	0.006	2.174	15.627
	September	0.915	0.308	0.278	0.238	0.239	0.007	1.985	17.611
	October	0.859	0.272	0.280	0.221	0.248	0.005	1.885	19.496
	November	0.860	0.236	0.297	0.225	0.268	0.006	1.892	21.388
	December	0.937	0.227	0.340	0.248	0.274	0.007	2.033	23.421
	TOTAL	**10.134**	**3.297**	**3.813**	**3.132**	**2.977**	**0.068**	**23.421**	
1979	January	1.009	0.236	0.386	0.279	0.299	0.007	2.215	2.215
	February	0.892	0.235	0.354	0.238	0.279	0.006	2.003	4.218
	March	0.900	0.270	0.345	0.288	0.262	0.008	2.073	6.291
	April	0.840	0.270	0.258	0.282	0.198	0.007	1.855	8.146
	May	0.894	0.286	0.270	0.319	0.162	0.007	1.938	10.084
	June	0.946	0.331	0.262	0.278	0.173	0.007	1.996	12.080
	July	1.007	0.382	0.261	0.255	0.224	0.007	2.136	14.217
	August	1.037	0.390	0.275	0.239	0.261	0.008	2.210	16.427
	September	0.901	0.350	0.268	0.215	0.235	0.007	1.976	18.403
	October	0.917	0.334	0.274	0.228	0.225	0.008	1.987	20.390
	November	0.916	0.270	0.289	0.250	0.207	0.008	1.940	22.330
	December	1.000	0.257	0.320	0.255	0.222	0.009	2.064	24.394
	TOTAL	**11.258**	**3.610**	**3.563**	**3.125**	**2.748**	**0.089**	**24.394**	
1980	January	1.073	0.286	0.312	0.281	0.213	0.008	2.172	2.172
	February	1.010	0.272	0.311	0.239	0.208	0.008	2.048	4.221
	March	R0.992	0.293	R0.283	0.271	0.216	0.008	R2.064	R6.284
	April	R0.874	0.265	0.257	0.286	0.202	0.008	R1.892	R8.177
	May	0.890	0.291	0.243	0.319	0.198	0.010	1.951	10.127
	TOTAL (Year-to-date)	**4.839**	**1.408**	**1.406**	**1.397**	**1.036**	**0.042**	**10.127**	

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Includes bituminous coal, lignite, and anthracite.
[2]Includes net imports of electricity.
[3]Includes geothermal power and electricity produced from wood and waste.
R = Revised data.
Source: •See Notes and Sources on the last page of this section.

Notes and Sources for the Consumption Section

1. See Explanatory Note 5 for definitions of the Residential and Commercial, Industrial, Transportation, and Electric Utilities Sectors.
2. **Coal**: Coal is bituminous coal, anthracite, and lignite. *Sources:* • Anthracite—1973 through 1976: U.S. Department of the Interior (DOI), Bureau of Mines (BOM), *Minerals Yearbook*, "Coal—Pennsylvania Anthracite, Annual."
• 1977 through 1980, U.S. Department of Energy (DOE), Energy Information Administration, (EIA) *Energy Data Reports*, "Weekly Coal Report."
• Bituminous coal and lignite—1973 through 1975, U.S. DOI, BOM, *Minerals Yearbook*, "Bituminous Coal and Lignite, Annual," Federal Power Commission (FPC), Form 4, "Monthly Power Plant Report," 1976 through 1980, DOE, EIA, *Energy Data Reports*, "Weekly Coal Report."
• Electric Utility consumption of coal sources: same as Note 6 below.
3. **Natural Gas**: Total natural gas consumption is estimated monthly based on a supply/disposition balance calculation. Residential and Commercial Sector monthly consumption is estimated by allocating the EIA annual Residential and Commercial Sector consumption to the months in proportion to the American Gas Association (AGA) monthly sales to the Residential and Commercial Sectors. For incomplete years, the AGA monthly sales data are used temporarily. Monthly Transportation Sector consumption (which is natural gas for pipeline use) for complete years is estimated by allocating the EIA annual Transportation total to the months based on each month's total natural gas consumption as a share of the annual total natural gas consumption. For incomplete years, each month's Transportation total is estimated by applying the percentage of total natural gas accounted for by the Transportation Sector in the same month a year ago to the current month's total natural gas consumption. The Electric Utility consumption of natural gas is available monthly from Form 4, "Monthly Power Plant Report." Each month's Industrial Sector consumption is estimated by subtracting the Residential and Commercial, Transportation, and Electric Utilities Sectors consumption from the total natural gas consumption.
Sources: • 1973 through 1975: DOI, BOM, *Minerals Yearbook*, "Natural Gas" chapter.
• 1976 through 1980, DOE, *Energy Data Reports*, "Natural Gas Monthly Production and Consumption."
• Electric Utilities consumption: 1973 through 1976, FPC, Form 4, "Monthly Power Plant Report."
• 1977 through 1980, DOE, EIA, FPC, Form 4, "Monthly Power Plant Report."
• American Gas Association, "Monthly Gas Utility Statistical Report."
4. **Petroleum**: Petroleum consumption by end-use is the sum of all individual petroleum products consumed in each end-use. First, total consumption by product is determined. Petroleum consumption in this section of the *Monthly Energy Review* uses the series called "products supplied" in the Petroleum Section.
Sources for petroleum products supplied by individual products are:
• 1973 through 1975: DOI, BOM, *Mineral Industry Surveys*, "Petroleum Statement, Annual."
• 1976 through 1978: DOE, EIA, *Energy Data Reports*, "Petroleum Statement, Annual."
• 1979 and 1980: DOE, EIA, *Energy Data Reports*, "Petroleum Statement, Monthly." DOE, EIA, Monthly Petroleum Statistics Report. DOE, EIA, estimates based on EIA weekly data.
DOE, EIA estimates for current and previous month data for several minor petroleum products' total consumption.
Each product's total is allocated to end-use sectors as follows:
• Aviation gasoline—Transportation.
• Asphalt and road oil—Commercial.
• Distillate fuel, residual fuel, kerosene end-uses are proportioned according to sales by end-use reported for 1973 through 1976 in the DOI, BOM, *Mineral Industry Surveys*, "Fuel Oil Sales, Annual," and for 1976 through 1978 in the DOE, EIA, *Energy Data Reports*, "Fuel Oil Sales, Annual." The proportions from 1978 are applied to 1979 and 1980 data.
• Jet fuel—small amounts in 1975 through 1977 are used in industrial and small amounts in all months are consumed by the electric utilities. All remaining jet fuel is allocated to the Transportation Sector.
• Liquefied petroleum gases—end-uses are proportioned according to sales by end-use reported for 1973 through 1975 in the DOI, BOM, *Mineral Industry Surveys*, "Liquefied Petroleum Gas Sales, Annual," and for 1976 through 1978 in the DOE, EIA, *Energy Data Reports*, "Liquefied Petroleum Gas Sales, Annual." The proportions from 1978 are applied to 1979 and 1980 data.
• Lubricants—allocated to Industrial and Transportation Sectors for all months according to proportions of sales to those sectors from U.S. Department of Commerce, Bureau of the Census, *Current Industrial Reports*, "Sales of Lubricating and Industrial Oils and Greases, 1977."
• Motor gasoline—the DOE motor gasoline consumption data are allocated to end-use according to shares derived from the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics*, Tables MF-21, MF-24 and MF-25. The proportions from 1978 are applied to 1979 and 1980 data.
• Petroleum coke consumed by the Electric Utilities—FPC, Form 4, "Monthly Power Plant Report."
• All other products are allocated to the Industrial Sector.
Sources: • 1973 through 1975: DOI, BOM, *Mineral Industry Surveys*, "Petroleum Statement, Annual."
• 1976 through 1978: DOE, EIA, *Energy Data Reports*, "Petroleum Statement, Annual."
• 1979 and 1980: DOE, EIA, *Energy Data Reports*, "Petroleum Statement, Monthly" and "Monthly Petroleum Statistics Report," and EIA estimates based on data from the American Petroleum Institute, "Weekly Statistical Bulletin."
• Electric Utility consumption of petroleum sources: 1973 through 1976: FPC, Form 4, "Monthly Power Plant Report."
• 1977 through 1980: DOE, EIA, FPC, Form 4, "Monthly Power Plant Report."
5. **Hydroelectric**: Industrial and electric utility generation of hydropower. *Sources:* • 1973 through 1976, FPC, Form 4, "Monthly Power Plant Report."
• 1977 through 1980: DOE, EIA, FPC, Form 4, "Monthly Power Plant Report."
• Imports and exports of electricity—*Sources:* DOE, Economic Regulatory Administration, "Report on Electric Energy Exchanges with Canada and Mexico." Monthly estimates are derived from annual data by dividing by the number of days in the year and multiplying by the number of days in the month. 1978 data are temporarily used for 1979 and 1980.
6. **Nuclear**: *Sources:* • 1973 through 1976: FPC, Form 4, "Monthly Power Plant Report."
• 1977 through 1980: DOE, EIA, FPC, Form 4, "Monthly Power Plant Report."
7. **Net Coke Imports**: Net coke imports is coke made from coal. *Sources:* • 1973 through 1975, DOI, BOM, *Minerals Yearbook*, "Coke and Coal Chemicals, Annual."
• 1976 through 1980: DOE, EIA, *Energy Data Reports*, "Coke and Coal Chemicals, Monthly."
8. **Other Energy**: "Other" is electricity produced from geothermal power and from wood and waste. *Sources:* same as Note 6 above.
9. **Electricity Sales**: Energy consumed by electric utilities to produce electricity is distributed to the major end-use sectors using EIA data in kilowatt-hour sales to ultimate customers. "Other" sales, largely for use in government buildings, are distributed to the Residential and Commercial Sector and a small portion to the Transportation Sector. *Source:* • Sales data—FPC, Form 5, "Monthly Statement of Electric Operating Revenue and Income."
10. **Electrical Energy Losses**: In generating electricity with nuclear or fossil fuels, approximately 65 percent of the energy is lost in the form of heat. Transmission and distribution losses consume about an additional 3 percent of the energy inputs of the utility industry. In order to fully account for all energy consumed both directly and indirectly (i.e., utilities energy disposition), the electricity losses are allocated to the final end-use sectors in proportion to their direct kilowatt-hour usage.

Crude Oil and Refined Petroleum Products*

Domestic crude oil production during June 1980 averaged 8.7 million barrels per day. This production rate was 3.3 percent higher than in June 1979 and 0.3 percent lower than in May 1980.

Total petroleum imports averaged 6.3 million barrels per day in June 1980, 23.3 percent less than the June 1979 rate and 1.7 percent lower than in May 1980.

In June 1980, 16.3 million barrels per day of petroleum products were supplied for domestic use. Motor gasoline accounted for 41.4 percent of the total, distillate fuel oil 15.9 percent, and residual fuel oil 14.4 percent.

The average for motor gasoline supplied during June 1980 was 6.8 million barrels per day, 5.9 percent lower than the amount supplied in June 1979 and 1.0 percent higher than in May 1980.

In June 1980, 2.6 million barrels of distillate fuel oil were supplied per day, 4.3 percent lower than the amount supplied a year ago and 2.8 percent higher than in May 1980. Distillate fuel oil stocks were 193.1 million barrels at the end of June 1980, 36.6 percent above the stock level 1 year ago, and 5.5 percent higher than during the previous month.

Residual fuel oil supplied in June 1980 averaged 2.4 million barrels per day, 7.9 percent lower than in June 1979. Residual fuel oil stocks measured 83.2 million barrels at the end of June 1980, 2.8 percent above the level a year ago and 5.0 percent lower than in the previous month.

*Estimates for the most recent month are based on EIA weekly data (except crude production) and will be revised to conform with data from the EIA Petroleum Reporting System as available. For the most recent month, crude production figures are EIA estimates.

Petroleum

Crude Oil

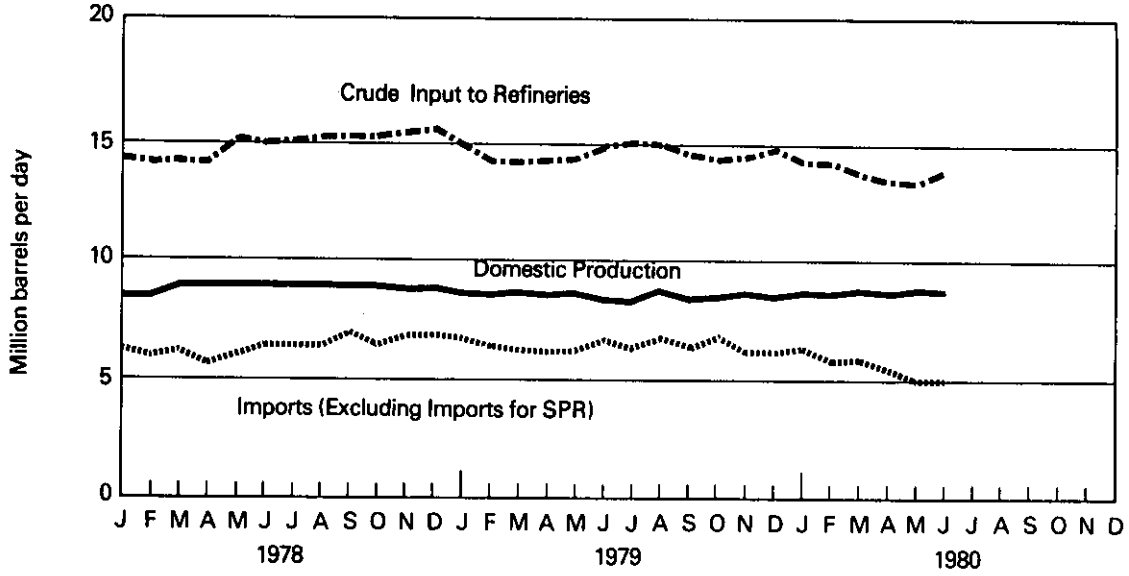
		Crude Input to Refineries	Total Domestic Production[1,3]	Alaskan Production	Crude Oil Imports[1,2]	Strategic Petroleum Reserve (SPR) Imports	Crude Oil Exports	Primary Crude Oil Stocks[1,3]	Strategic Petroleum Reserve (SPR) Stocks[3]
		Thousand barrels per day						Thousand barrels	
1973	**AVERAGE**	**12,431**	**9,208**	**198**	**3,244**		**2**	**‡242,478**	
1974	**AVERAGE**	**12,133**	**8,774**	**193**	**3,477**		**3**	**‡265,020**	
1975	**AVERAGE**	**12,442**	**8,375**	**191**	**4,105**		**6**	**‡271,354**	
1976	**AVERAGE**	**13,416**	**8,132**	**173**	**5,287**		**8**	**‡285,471**	
1977	**AVERAGE**	**14,602**	**8,245**	**464**	**6,594**	**21**	**50**	**‡339,857**	**‡7,626**
1978	January	14,150	8,360	869	6,126	114	98	341,371	11,106
	February	13,969	8,377	854	5,655	109	8	335,890	14,276
	March	14,148	8,720	1,151	6,031	132	60	345,482	18,437
	April	13,886	8,818	1,289	5,519	108	92	343,363	21,825
	May	14,996	8,825	1,281	5,594	133	124	329,101	25,629
	June	14,693	8,832	1,306	6,322	146	195	333,340	30,140
	July	14,911	8,756	1,295	6,175	154	138	332,909	35,248
	August	15,196	8,758	1,316	6,251	184	182	316,866	40,968
	September	15,085	8,800	1,322	6,829	225	251	321,172	47,090
	October	15,005	8,820	1,342	6,400	195	272	325,081	53,113
	November	15,336	8,741	1,351	6,643	188	218	322,045	59,312
	December	15,421	8,662	1,347	6,751	245	251	309,421	66,860
	AVERAGE	**14,739**	**8,707**	**1,229**	**6,195**	**161**	**158**		
1979	January	14,658	8,457	1,351	6,656	204	177	302,728	73,142
	February	14,121	8,498	1,267	6,344	179	288	302,981	78,166
	March	14,062	8,585	1,355	6,240	122	370	317,432	82,501
	April	14,346	8,533	1,347	6,145	66	260	319,759	83,867
	May	14,273	8,585	1,350	6,163	97	171	316,355	86,880
	June	14,655	8,409	1,247	6,554	65	235	325,893	88,567
	July	14,977	8,355	1,405	6,349	41	244	312,852	90,101
	August	14,827	8,699	1,434	6,774	35	242	320,745	91,189
	September	14,461	8,466	1,436	6,410	0	175	323,854	91,189
	October	14,330	8,568	1,481	6,854	0	179	344,679	[4]91,191
	November	14,397	8,649	1,614	6,154	0	264	347,367	91,191
	December	14,817	8,587	1,520	6,273	0	210	339,080	91,191
	AVERAGE	**14,497**	**8,533**	**1,401**	**6,411**	**67**	**234**		
1980	January	14,147	8,648	1,634	6,359	0	311	353,611	91,191
	February	14,094	8,696	1,630	5,936	0	310	361,648	91,191
	March	R13,603	R8,712	R1,647	R5,785	0	R323	R361,742	91,191
	April†	13,424	*8,670*	*1,650*	5,486	0	192	375,750	91,191
	May†	R13,322	*8,720*	*1,615*	R5,020	0	326	R378,842	91,191
	June†	*13,804*	*8,690*	*1,618*	*5,031*	0	NA	*369,249*	91,191
	AVERAGE	**13,730**	**8,689**	**1,632**	**5,603**	**0**	**NA**		

Geographic coverage: the 50 United States and District of Columbia.
[1]See Definitions.
[2]Includes Alaskan production.
[3]Excludes SPR. Strategic Petroleum Reserve storage began in October 1977.
[4]Indicates an adjustment in reported barrels in storage.
Estimated data in italics. These are likely to be revised next month.
‡Total as of December 31.
†Preliminary data. R=Revised data. NA=Not available.
Sources: •See Sources on the last page of this section.

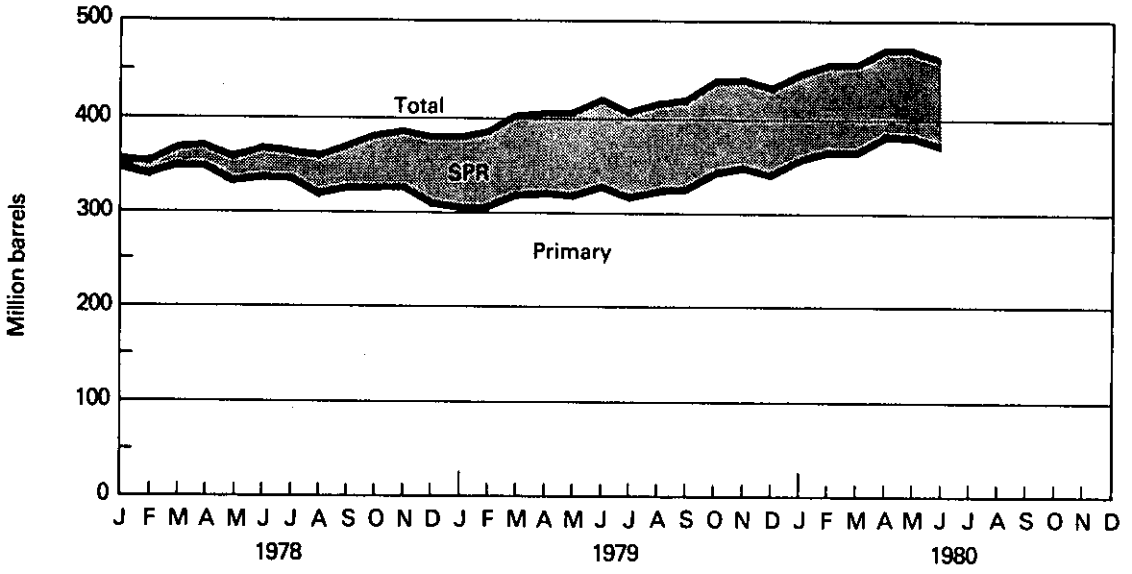
Petroleum

Crude Oil

Production, Refinery Input and Imports



Stocks



Petroleum

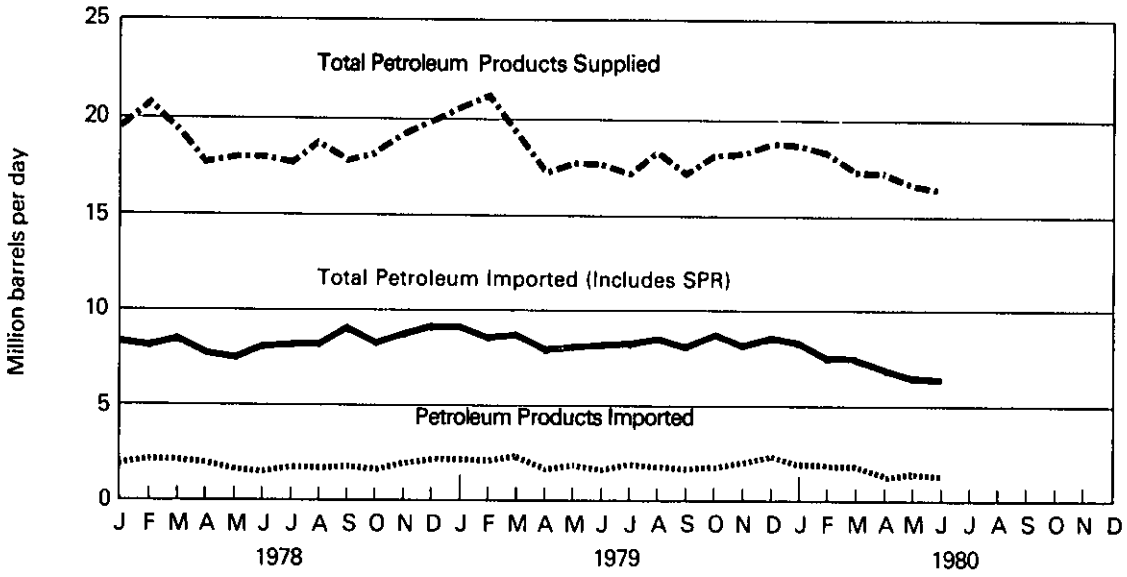
		Total Petroleum Products[1]			Total Crude Oil and Petroleum Products Trade				
		Products Supplied[1]	Product Imports[2]	Product Exports	Total Imports (Excluding SPR)	SPR Imports[3]	Total Imports (Including SPR)[3]	Total Exports	Net Imports
		Thousand barrels per day			Thousand barrels per day				
1973	**AVERAGE**	**17,308**	**3,012**	**229**	**6,256**			**231**	**6,025**
1974	**AVERAGE**	**16,653**	**2,635**	**218**	**6,112**			**221**	**5,892**
1975	**AVERAGE**	**16,322**	**1,951**	**204**	**6,056**			**209**	**5,846**
1976	**AVERAGE**	**17,461**	**2,026**	**215**	**7,313**			**223**	**7,090**
1977	**AVERAGE**	**18,431**	**2,193**	**193**	**8,787**	**21**	**8,807**	**243**	**8,565**
1978	January	19,752	2,092	158	8,218	114	8,332	257	8,076
	February	20,900	2,355	200	8,010	109	8,119	208	7,911
	March	19,652	2,338	209	8,369	132	8,501	269	8,232
	April	17,747	2,115	245	7,634	108	7,743	337	7,406
	May	18,230	1,804	189	7,398	133	7,531	313	7,218
	June	18,260	1,640	204	7,962	146	8,108	399	7,709
	July	17,633	1,948	192	8,123	154	8,277	330	7,947
	August	18,639	1,858	229	8,109	184	8,292	411	7,881
	September	17,954	1,983	226	8,811	225	9,036	477	8,559
	October	18,417	1,718	197	8,119	195	8,313	469	7,845
	November	19,156	2,021	191	8,664	188	8,852	409	8,443
	December	19,944	2,245	205	8,996	245	9,241	455	8,786
	AVERAGE	**18,847**	**2,008**	**204**	**8,202**	**161**	**8,363**	**362**	**8,002**
1979	January	20,657	2,222	212	8,878	204	9,082	388	8,694
	February	21,145	2,062	200	8,406	179	8,585	488	8,096
	March	19,180	2,385	234	8,625	122	8,747	604	8,144
	April	17,319	1,673	235	7,820	66	7,885	495	7,390
	May	17,718	1,826	278	7,989	97	8,087	449	7,638
	June	17,675	1,672	220	8,226	65	8,291	455	7,836
	July	17,055	1,932	258	8,280	41	8,322	502	7,819
	August	18,184	1,778	210	8,552	35	8,587	451	8,136
	September	17,270	1,596	241	8,006	0	8,006	416	7,590
	October	18,124	1,785	258	8,639	0	8,639	437	8,202
	November	18,262	1,946	246	8,099	0	8,099	510	7,590
	December	18,783	2,305	262	8,577	0	8,577	472	8,105
	AVERAGE	**18,434**	**1,933**	**238**	**8,344**	**67**	**8,411**	**472**	**7,939**
1980	January	18,509	1,983	228	8,342	0	8,342	539	7,803
	February	18,721	1,911	227	7,847	0	7,847	536	7,311
	March	R17,279	R1,724	243	R7,509	0	R7,509	R566	R6,943
	April†	17,240	1,440	241	6,926	0	6,926	433	6,493
	May†	R16,525	R1,402	266	R6,422	0	R6,422	592	5,830
	June†	*16,315*	*1,279*	NA	*6,310*	0	*6,310*	NA	NA
	AVERAGE	**17,425**	**1,623**	**NA**	**7,226**	**0**	**7,226**	**NA**	**NA**

Geographic coverage: the 50 United States and the District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]See Definitions.
[2]Includes plant condensate, natural gasoline and unfinished oils.
[3]Strategic Petroleum Reserve storage began in October 1977.
Estimated data in italics. These are likely to be revised next month.
†Preliminary data. R=Revised data. NA=Not available.
Sources: •See Sources on the last page of this section.

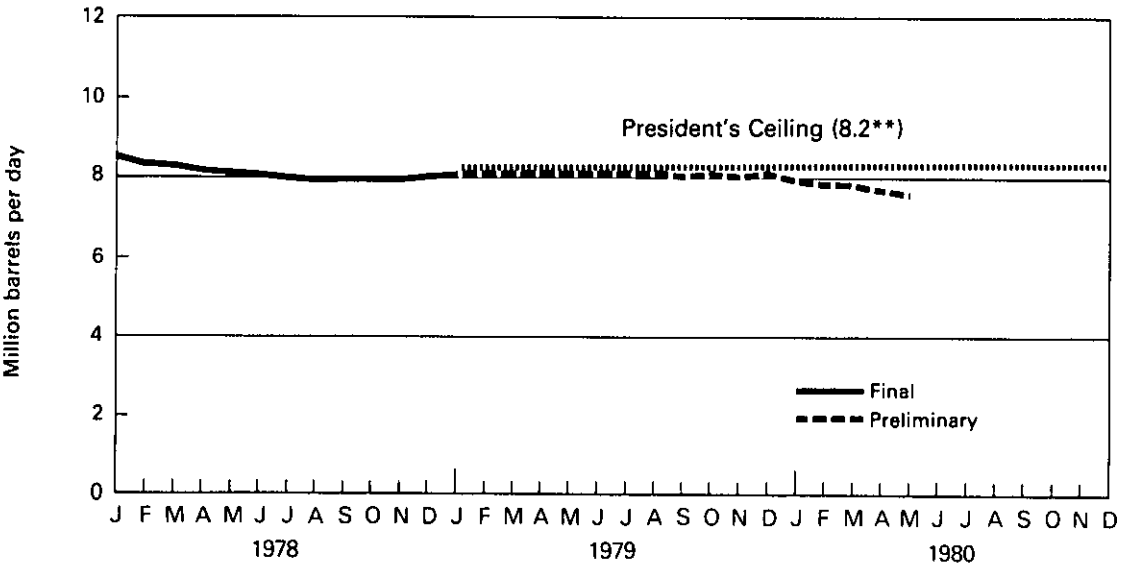
Petroleum

Products Supplied and Imports

Products Supplied and Imports



Net Imports* of Crude Oil and Refined Products (Average of the Preceding Twelve Months)



* Includes SPR.
** In his January 1980 State of the Union address, the President announced his revised net import ceiling of 8.2 million barrels per day for 1980. The figure was previously 8.5 million barrels per day.

Petroleum

Petroleum Imports from OPEC Sources

	Algeria	Indonesia	Iran	Libya	Nigeria	Saudi Arabia	United Arab Emirates	Venezuela	Other OPEC[1]	Total OPEC	Arab Members of OPEC[2]
	Thousand barrels per day										
1973 AVERAGE	**136.0**	**213.3**	**222.8**	**164.4**	**458.8**	**485.7**	**70.6**	**1,134.9**	**106.4**	**2,992.9**	**914.7**
1974 AVERAGE	**190.1**	**300.4**	**468.8**	**4.4**	**713.4**	**461.3**	**73.9**	**979.1**	**88.4**	**3,279.8**	**752.5**
1975 AVERAGE	**282.4**	**389.6**	**280.4**	**231.8**	**761.8**	**714.6**	**116.7**	**702.5**	**121.5**	**3,601.3**	**1,382.6**
1976 AVERAGE	**432.2**	**538.8**	**298.5**	**453.3**	**1,024.7**	**1,229.8**	**254.4**	**700.1**	**134.0**	**5,065.8**	**2,424.1**
1977 AVERAGE	**558.6**	**541.0**	**535.0**	**722.6**	**1,143.0**	**1,380.4**	**335.3**	**690.4**	**286.7**	**6,193.1**	**3,185.1**
1978											
January	707.5	527.9	689.6	570.9	834.6	1,206.3	348.8	643.2	227.8	5,756.5	2,969.4
February	658.2	405.7	539.2	594.4	793.0	971.4	486.1	798.1	251.5	5,497.5	2,822.4
March	715.9	603.7	535.2	583.7	960.3	1,131.7	296.2	894.6	254.0	5,975.3	2,903.7
April	597.5	532.1	441.9	612.0	584.2	1,020.5	480.5	658.7	228.2	5,155.6	2,829.7
May	701.1	549.6	746.3	498.7	779.8	786.3	418.7	556.6	84.5	5,121.7	2,445.0
June	776.1	666.1	536.0	648.7	858.0	1,107.8	345.0	494.1	219.3	5,651.3	3,029.0
July	659.0	648.0	532.5	629.3	1,003.2	1,053.2	293.8	538.3	301.3	5,658.6	2,831.4
August	464.2	575.3	574.2	798.6	942.6	1,127.6	415.9	514.0	206.6	5,619.0	2,926.0
September	615.9	634.0	590.6	762.4	1,029.6	1,247.5	389.2	650.3	261.9	6,181.5	3,184.5
October	709.7	571.5	608.2	712.6	927.7	1,173.1	397.2	524.5	112.6	5,737.2	3,034.7
November	619.2	548.6	494.7	758.4	1,188.1	1,365.2	408.6	635.1	222.1	6,240.0	3,292.5
December	561.5	604.1	368.8	676.3	1,119.6	1,524.8	356.8	841.6	345.6	6,399.1	3,292.4
AVERAGE	**648.7**	**573.3**	**555.3**	**653.9**	**919.5**	**1,143.9**	**385.4**	**644.9**	**226.0**	**5,750.9**	**2,963.2**
1979											
January	669.2	502.8	187.1	734.9	1,158.6	1,562.9	341.4	661.0	240.4	6,058.4	3,405.9
February	746.3	521.3	85.8	613.7	984.3	1,628.2	309.8	745.9	170.8	5,806.0	3,403.8
March	579.0	418.9	22.2	598.3	1,403.0	1,298.4	298.4	851.4	272.5	5,742.0	2,938.3
April	686.8	376.1	51.6	770.8	988.9	1,483.5	285.2	619.3	129.6	5,391.8	3,311.0
May	755.5	342.5	196.5	650.5	1,117.9	1,273.4	291.9	671.2	147.5	5,447.0	3,023.7
June	559.9	390.5	318.3	764.2	932.0	1,258.3	281.9	609.4	363.8	5,478.4	3,156.6
July	591.4	416.1	410.7	654.2	981.4	1,359.9	252.6	675.8	170.6	5,509.1	2,956.0
August	669.3	499.1	516.0	657.2	1,183.0	1,332.4	247.1	731.0	261.5	6,096.6	3,051.7
September	510.2	358.7	372.9	610.5	1,103.3	1,281.1	269.9	726.2	199.8	5,432.6	2,833.1
October	601.5	452.2	495.6	761.6	973.7	1,262.1	234.0	616.7	304.4	5,701.9	3,064.2
November	614.2	332.9	548.6	469.5	1,007.1	1,162.9	307.1	713.0	151.4	5,306.7	2,602.6
December	589.2	394.5	413.8	559.2	1,079.9	1,279.4	241.5	677.6	130.5	5,365.6	2,729.7
AVERAGE	**630.5**	**416.9**	**303.2**	**654.0**	**1,077.6**	**1,346.8**	**279.7**	**691.1**	**212.2**	**5,612.0**	**3,037.4**
1980											
January	484.2	433.0	80.5	616.8	1,054.4	1,562.1	201.6	583.3	179.1	5,195.1	3,000.7
February	638.7	317.1	9.2	603.3	1,012.6	1,398.9	304.0	543.0	140.3	4,967.1	3,016.7
March	R472.0	R405.4	0.0	R654.1	R924.2	R1,389.5	R370.1	R352.3	R174.8	R4,742.3	R2,978.6
April†	555.9	373.4	0.0	667.0	711.5	1,261.8	150.1	319.7	227.9	4,267.4	2,818.1
May†	441.0	344.8	0.0	464.4	964.4	1,115.1	162.2	403.7	132.4	4,027.9	2,266.3
AVERAGE	**516.5**	**375.5**	**18.2**	**600.7**	**933.8**	**1,345.3**	**237.3**	**439.8**	**170.9**	**4,638.1**	**2,813.4**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
Beginning in October 1977 Strategic Petroleum Reserve imports are included.
[1]Includes Ecuador, Gabon, Iraq, Kuwait and Qatar.
[2]Includes Algeria, Libya, Saudi Arabia, United Arab Emirates, Iraq, Kuwait and Qatar.
†Preliminary data. R = Revised data.
Sources: • See Sources on the last page of this section.

Petroleum

Petroleum Imports from Non-OPEC Sources

	Bahamas	Canada	Mexico	Netherlands Antilles	Puerto Rico	Trinidad and Tobago	Virgin Islands	Other[1]	Total
	Thousand barrels per day								
1973									
AVERAGE	**174.0**	**1,324.8**	**15.7**	**584.7**	**99.5**	**254.8**	**329.4**	**480.3**	**3,263.2**
1974									
AVERAGE	**163.8**	**1,069.5**	**8.5**	**511.0**	**90.4**	**250.8**	**391.0**	**347.4**	**2,832.4**
1975									
AVERAGE	**152.4**	**846.4**	**71.4**	**331.8**	**89.7**	**242.4**	**406.4**	**313.9**	**2,454.4**
1976									
AVERAGE	**118.5**	**599.3**	**87.2**	**275.4**	**88.1**	**274.3**	**422.3**	**381.7**	**2,246.8**
1977									
AVERAGE	**170.5**	**516.9**	**179.4**	**210.9**	**105.1**	**289.3**	**466.2**	**675.8**	**2,614.1**
1978									
January	167.5	474.4	236.4	215.2	111.7	295.0	466.0	609.7	2,575.8
February	217.6	498.7	211.2	211.4	103.1	296.1	490.6	592.9	2,621.6
March	211.5	434.7	230.9	238.1	63.6	281.3	505.5	559.9	2,525.7
April	140.9	394.6	231.4	258.3	99.8	304.5	371.9	785.9	2,587.1
May	194.3	389.6	257.6	230.6	104.3	189.0	310.2	733.8	2,409.3
June	144.6	469.2	287.1	221.3	117.6	199.3	324.5	693.3	2,456.7
July	166.0	532.5	309.3	201.6	93.8	281.8	402.2	631.4	2,618.6
August	187.7	422.4	392.6	291.0	82.3	247.6	431.0	618.6	2,673.2
September	120.1	427.2	460.6	217.1	95.2	262.1	431.7	840.7	2,854.6
October	105.9	425.9	392.1	175.5	88.5	203.8	476.3	708.1	2,576.3
November	153.7	481.4	401.8	223.4	71.3	230.6	489.1	560.8	2,612.1
December	111.9	650.7	396.0	265.0	96.3	249.6	448.3	624.4	2,842.2
AVERAGE	**159.9**	**466.8**	**317.8**	**229.2**	**93.8**	**253.1**	**428.7**	**663.2**	**2,612.5**
1979									
January	159.5	564.1	584.1	237.9	109.1	116.0	477.0	776.3	3,023.9
February	103.6	560.3	415.4	254.8	68.2	191.4	421.1	763.6	2,778.5
March	93.6	614.5	397.5	314.1	63.8	214.7	561.6	745.5	3,005.4
April	129.4	577.0	301.6	178.7	64.9	154.3	474.7	612.4	2,492.9
May	134.8	554.8	402.9	191.1	101.7	216.6	382.0	655.7	2,639.7
June	138.1	468.4	457.7	171.4	105.7	169.5	413.7	888.2	2,812.6
July	193.2	488.6	370.3	208.7	117.2	169.1	451.2	814.2	2,812.4
August	156.6	463.1	439.4	246.5	92.5	237.9	357.1	497.4	2,490.4
September	149.1	463.4	431.3	275.8	86.2	166.2	285.7	715.9	2,573.5
October	150.5	486.3	531.1	242.4	60.2	199.7	403.0	863.6	2,936.7
November	181.7	554.5	417.7	195.8	109.7	161.1	438.4	733.8	2,792.7
December	178.1	595.8	453.9	257.4	120.3	236.7	507.5	862.1	3,211.9
AVERAGE	**147.7**	**532.5**	**434.1**	**231.3**	**91.8**	**186.3**	**431.5**	**744.0**	**2,799.1**
1980									
January	175.1	568.9	545.2	289.0	55.9	239.4	467.2	809.1	3,146.8
February	111.5	539.6	462.6	205.2	95.3	191.8	521.6	752.5	2,880.1
March	R124.0	R459.7	R459.6	R184.0	81.3	R188.7	R443.2	R826.6	R2,767.1
April†	55.7	433.3	529.4	221.9	63.1	143.4	418.2	793.4	2,658.6
May†	77.1	407.7	556.7	172.0	70.1	222.1	303.4	584.9	2,394.1
AVERAGE	**109.0**	**481.4**	**511.1**	**214.5**	**72.9**	**197.5**	**429.6**	**752.4**	**2,768.6**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
Beginning in October 1977 Strategic Petroleum Reserve imports are included.
[1]Includes Non-OPEC Arab, Western Europe, Angola, U.S.S.R., Rumania, other Western Hemisphere and other Eastern Hemisphere.
†Preliminary data. R=Revised data.
Sources: •See Sources on the last page of this section.

Petroleum

Motor Gasoline

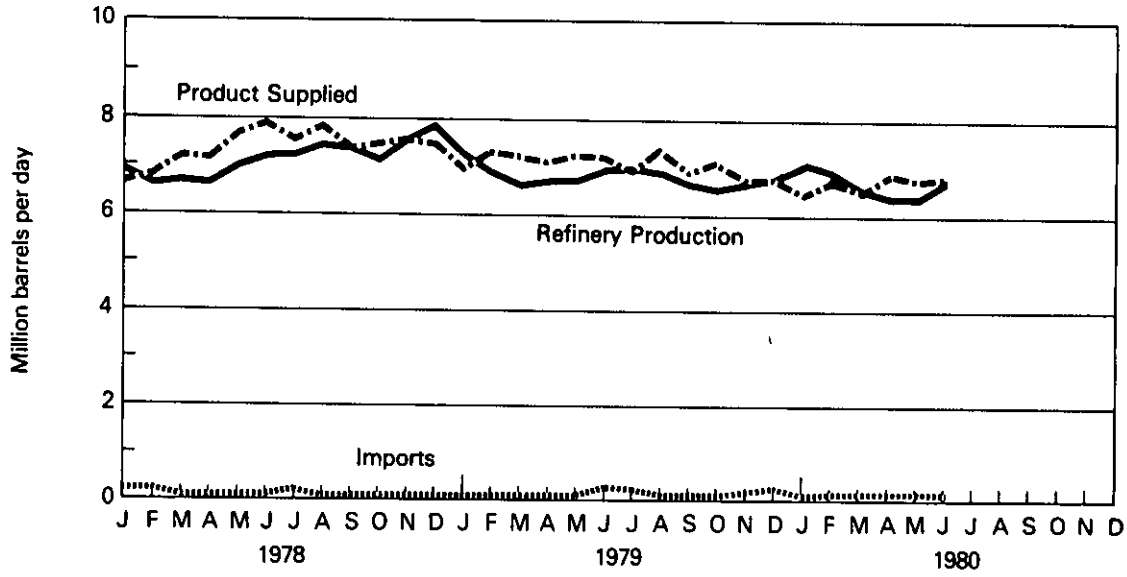
		Product Supplied						
		Total	Unleaded	Unleaded Percent of Total	Refinery Production[1]	Imports	Exports	Stocks[1]
		Thousand barrels per day						Thousand barrels
1973	**AVERAGE**	**6,674**	**NA**	**NA**	**6,527**	**134**	**4**	**‡209,395**
1974	**AVERAGE**	**6,537**	**NA**	**NA**	**6,358**	**204**	**2**	**‡218,346**
1975	**AVERAGE**	**6,675**	**NA**	**NA**	**6,518**	**184**	**2**	**‡234,925**
1976	**AVERAGE**	**6,978**	**NA**	**NA**	**6,838**	**131**	**3**	**‡231,387**
1977	**AVERAGE**	**7,177**	**1,976**	**27.5**	**7,031**	**217**	**2**	**‡257,578**
1978	January	6,681	2,097	31.4	6,933	214	1	272,064
	February	6,876	2,162	31.4	6,631	200	1	270,832
	March	7,255	2,425	33.4	6,750	141	1	259,556
	April	7,202	2,391	33.2	6,668	177	1	248,876
	May	7,724	2,343	30.3	7,059	169	2	233,471
	June	7,913	2,697	34.1	7,210	234	1	219,441
	July	7,576	2,629	34.7	7,264	212	2	216,368
	August	7,872	2,834	36.0	7,454	179	1	208,975
	September	7,399	2,607	35.2	7,399	251	2	216,500
	October	7,448	2,576	34.6	7,176	180	2	213,666
	November	7,503	2,713	36.2	7,583	147	1	220,523
	December	7,451	2,751	36.9	7,831	182	1	237,956
	AVERAGE	**7,412**	**2,521**	**34.0**	**7,167**	**190**	**1**	
1979	January	6,893	2,609	37.8	7,272	179	2	255,664
	February	7,267	2,715	37.4	6,941	160	2	251,346
	March	7,221	2,733	37.8	6,654	168	1	239,162
	April	7,068	2,786	39.4	6,765	156	1	235,192
	May	7,203	2,751	38.2	6,786	145	2	227,193
	June	7,187	2,787	38.8	6,987	261	1	229,349
	July	6,850	2,789	40.7	7,006	222	1	241,536
	August	7,332	2,970	40.5	6,882	147	1	232,742
	September	6,878	2,815	40.9	6,626	135	1	229,608
	October	7,022	2,802	39.9	6,483	150	1	218,066
	November	6,771	2,928	43.2	6,654	182	1	220,486
	December	6,690	2,890	43.2	6,962	263	1	237,503
	AVERAGE	**7,030**	**2,798**	**39.8**	**6,835**	**181**	**1**	
1980	January	6,335	2,718	42.9	6,977	141	1	262,134
	February	6,594	2,969	45.0	6,851	153	(s)	274,422
	March	R6,411	3,032	R47.3	R6,512	154	(s)	R282,688
	April†	6,796	3,021	44.5	6,270	147	1	271,294
	May†	R6,695	2,980	44.5	R6,294	R132	1	R262,959
	June†	*6,762*	NA	NA	*6,637*	*103*	NA	*268,465*
	AVERAGE	**6,597**	**NA**	**NA**	**6,589**	**138**	**NA**	

Geographic coverage: the 50 United States and District of Columbia.
[1]See Definitions.
Estimated data in italics. These are likely to be revised next month.
‡Total as of December 31.
†Preliminary data. R=Revised data. NA=Not available.
(s)=Less than 500 barrels per day.
Note: Bureau of Mines' stock coverage was expanded at the end of 1974 to include an additional 100 bulk terminal operators; the new coverage begins here with 1975.
Sources: •See Sources on the last page of this section.

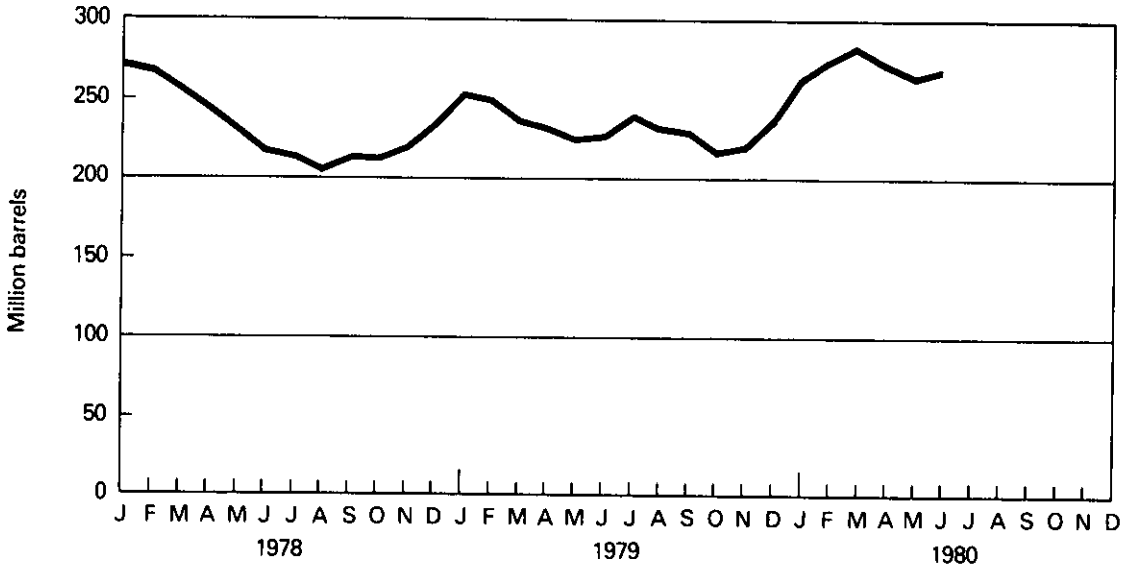
Petroleum

Motor Gasoline

Product Supplied, Refinery Production and Imports



Stocks



Petroleum

Jet Fuel

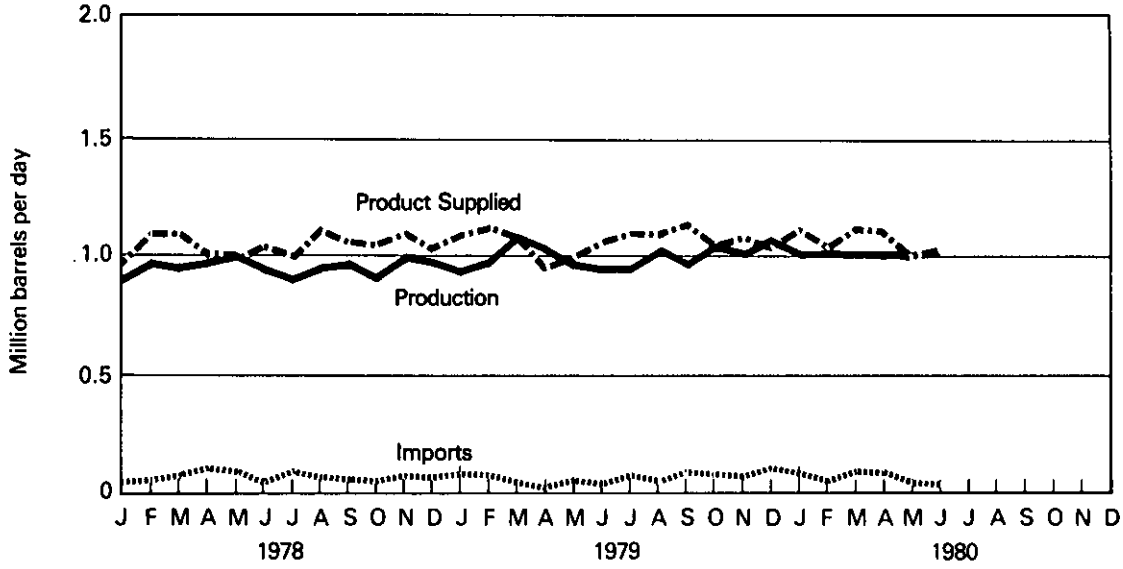
		Product Supplied	Refinery Production	Imports	Exports	Stocks
		Thousand barrels per day				Thousand barrels
1973	**AVERAGE**	**1,059**	**859**	**212**	**4**	**‡28,544**
1974	**AVERAGE**	**993**	**836**	**163**	**3**	**‡29,435**
1975	**AVERAGE**	**1,001**	**871**	**133**	**2**	**‡30,380**
1976	**AVERAGE**	**987**	**918**	**76**	**2**	**‡32,085**
1977	**AVERAGE**	**1,039**	**973**	**75**	**2**	**‡34,548**
1978	January	980	921	60	1	34,535
	February	1,108	989	76	2	33,297
	March	1,107	967	98	2	31,950
	April	1,011	980	122	1	34,631
	May	997	1,011	108	2	38,372
	June	1,044	963	59	2	37,654
	July	1,014	923	105	2	38,050
	August	1,126	966	86	1	35,747
	September	1,077	989	75	1	35,328
	October	1,067	932	65	2	33,104
	November	1,107	1,011	89	2	32,829
	December	1,046	989	86	2	33,665
	AVERAGE	**1,057**	**970**	**86**	**1**	
1979	January	1,100	950	97	1	31,993
	February	1,137	996	88	2	30,449
	March	1,088	1,097	61	1	32,607
	April	961	1,040	43	1	36,217
	May	1,008	976	75	1	37,547
	June	1,073	956	57	1	35,741
	July	1,105	964	90	1	34,152
	August	1,088	1,040	49	1	34,156
	September	1,105	958	84	1	32,251
	October	1,050	1,046	90	(s)	34,891
	November	1,070	1,027	83	1	36,058
	December	1,095	1,068	108	2	38,520
	AVERAGE	**1,073**	**1,011**	**77**	**1**	
1980	January	1,101	1,004	95	1	38,412
	February	1,072	1,026	43	2	38,258
	March	R1,116	1,031	99	2	R38,661
	April†	1,096	1,023	97	3	39,341
	May†	R991	R1,002	R54	2	R41,299
	June†	*1,041*	*1,018*	*46*	NA	*42,229*
	AVERAGE	**1,069**	**1,017**	**73**	**NA**	

Geographic coverage: the 50 United States and District of Columbia.
Estimated data in italics. These are likely to be revised next month.
‡Total as of December 31.
†Preliminary data. R=Revised data. NA=Not available.
(s)=Less than 500 barrels per day.
Note: Bureau of Mines' stock coverage was expanded at the end of 1974 to include an additional 100 bulk terminal operators; the new coverage begins here with 1975.
Sources: •See Sources on the last page of this section.

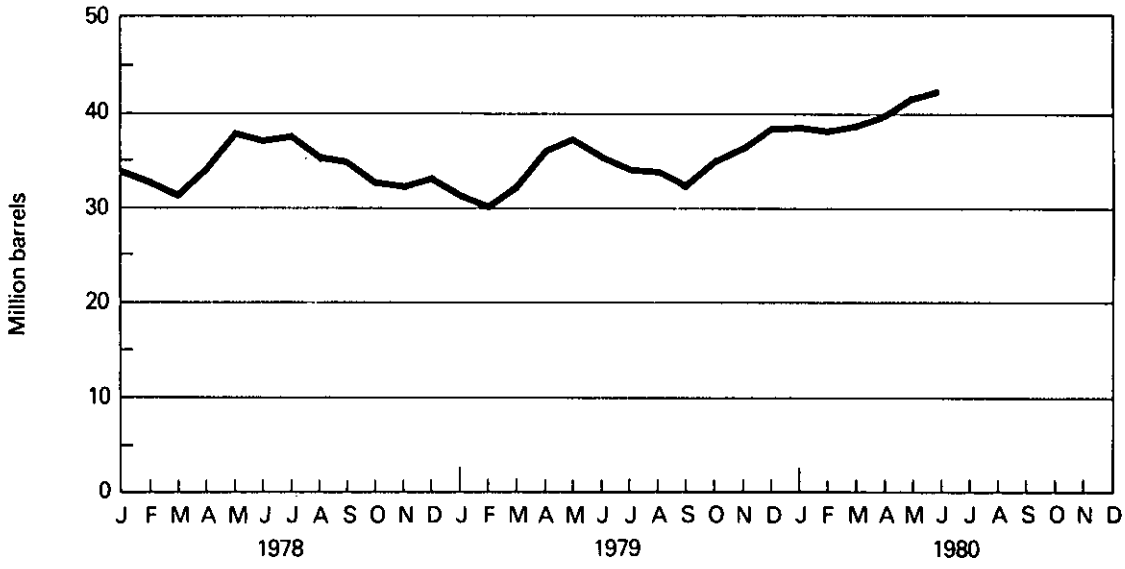
Petroleum

Jet Fuel

Product Supplied, Refinery Production and Imports



Stocks



Petroleum

Distillate Fuel Oil

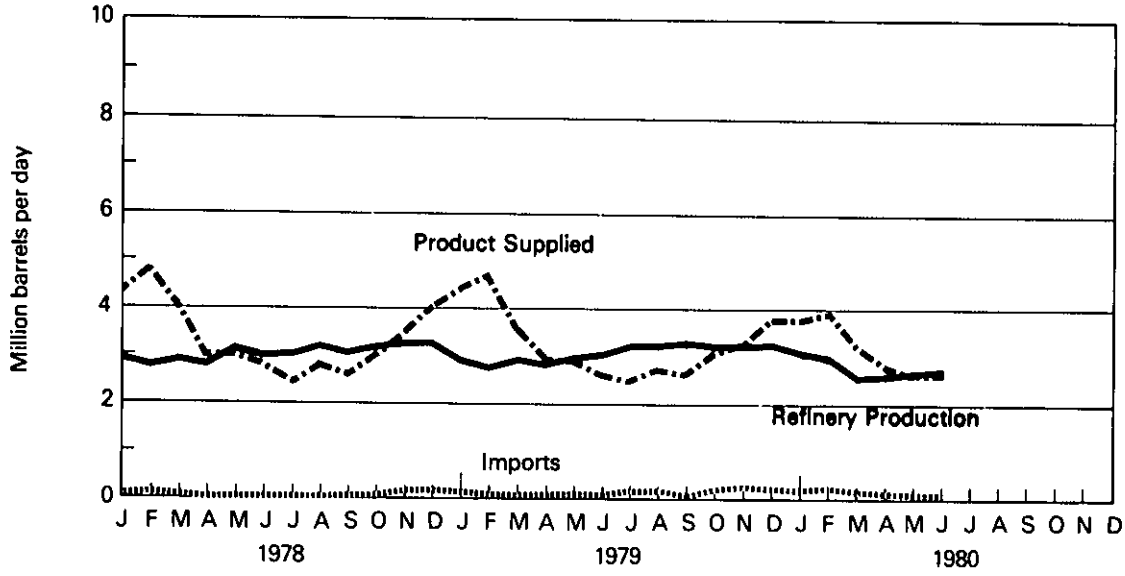
		Product Supplied	Refinery Production[1]	Imports	Exports	Stocks[1]
		Thousand barrels per day				Thousand barrels
1973	**AVERAGE**	**3,092**	**2,820**	**392**	**9**	**‡196,421**
1974	**AVERAGE**	**2,948**	**2,668**	**289**	**2**	**‡200,029**
1975	**AVERAGE**	**2,851**	**2,653**	**155**	**1**	**‡208,787**
1976	**AVERAGE**	**3,133**	**2,924**	**146**	**1**	**‡185,948**
1977	**AVERAGE**	**3,352**	**3,277**	**250**	**1**	**‡250,260**
1978	January	4,458	3,067	196	1	213,245
	February	4,848	2,952	212	16	165,697
	March	4,108	3,014	193	(s)	137,826
	April	3,111	2,959	100	6	136,143
	May	3,103	3,250	125	1	144,619
	June	2,837	3,109	146	(s)	157,237
	July	2,522	3,123	149	4	180,420
	August	2,800	3,296	143	4	200,157
	September	2,664	3,185	163	2	220,687
	October	3,077	3,299	178	2	233,082
	November	3,583	3,366	223	3	233,231
	December	4,156	3,360	254	2	216,439
	AVERAGE	**3,432**	**3,167**	**173**	**3**	
1979	January	4,543	3,005	226	1	175,695
	February	4,792	2,863	196	7	127,034
	March	3,627	2,992	176	5	112,728
	April	3,006	2,935	149	4	114,989
	May	2,989	3,064	185	2	123,059
	June	2,707	3,137	180	1	141,365
	July	2,552	3,305	219	9	171,243
	August	2,772	3,332	217	2	195,339
	September	2,659	3,368	126	3	220,328
	October	3,104	3,248	211	10	231,083
	November	3,311	3,257	235	(s)	236,554
	December	3,722	3,238	229	1	228,706
	AVERAGE	**3,308**	**3,147**	**196**	**4**	
1980	January	3,732	3,023	179	7	212,126
	February	3,706	2,778	221	8	191,464
	March	R3,171	R2,564	R179	19	R177,659
	April†	2,736	2,561	158	2	176,882
	May†	R2,519	R2,619	R105	1	R182,979
	June†	*2,590*	*2,752*	*97*	NA	*193,087*
	AVERAGE	**3,073**	**2,716**	**156**	**NA**	

Geographic coverage: the 50 United States and District of Columbia.
[1]See Definitions.
Estimated data in italics. These are likely to be revised next month.
‡Total as of December 31.
†Preliminary data. R=Revised data. NA=Not available.
(s)=Less than 500 barrels per day.
Note: Bureau of Mines' stock coverage was expanded at the end of 1974 to include an additional 100 bulk terminal operators; the new coverage begins here with 1975.
Sources: •See Sources on the last page of this section.

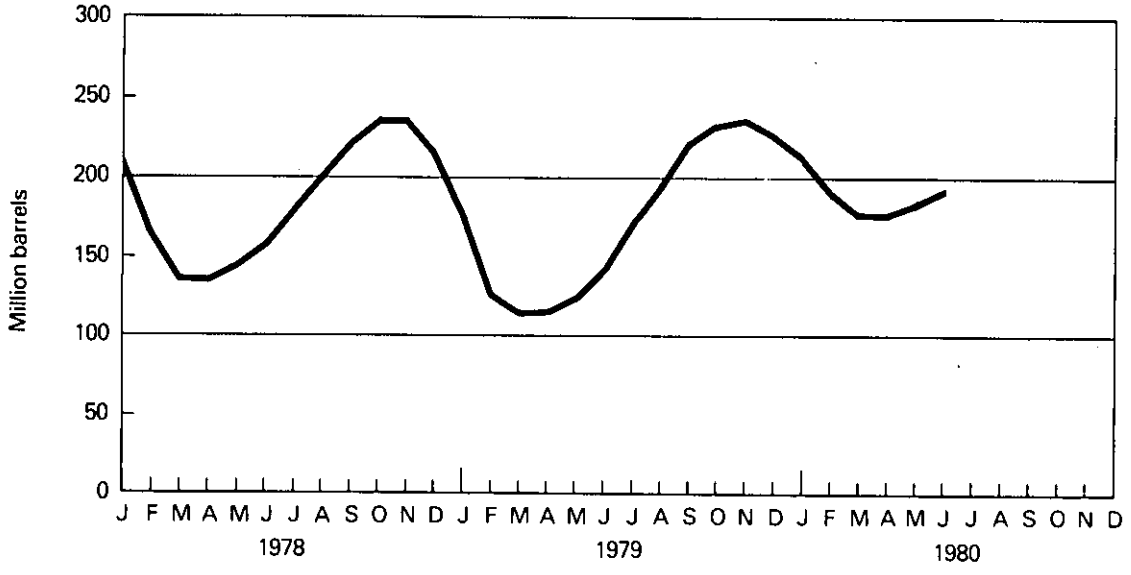
Petroleum

Distillate Fuel Oil

Product Supplied, Refinery Production and Imports



Stocks



Petroleum

Residual Fuel Oil

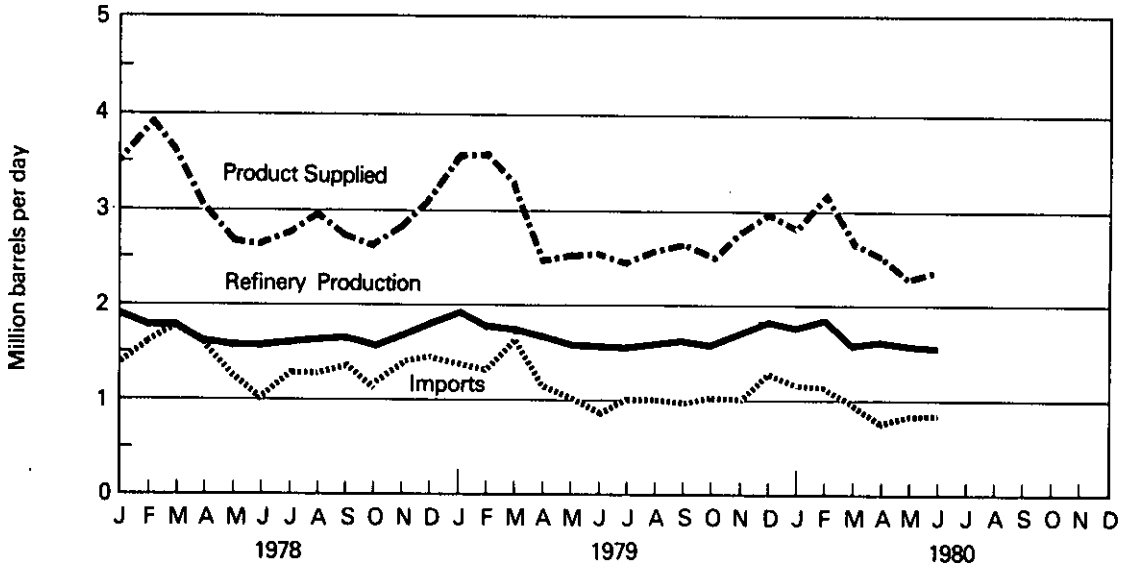
		Product Supplied	Refinery Production	Imports	Exports	Stocks
		Thousand barrels per day				Thousand barrels
1973	**AVERAGE**	**2,822**	**971**	**1,853**	**23**	**‡53,480**
1974	**AVERAGE**	**2,639**	**1,070**	**1,587**	**14**	**‡59,694**
1975	**AVERAGE**	**2,462**	**1,235**	**1,223**	**15**	**‡74,126**
1976	**AVERAGE**	**2,801**	**1,377**	**1,413**	**12**	**‡72,344**
1977	**AVERAGE**	**3,071**	**1,754**	**1,359**	**6**	**‡89,993**
1978	January	3,518	1,868	1,380	13	81,657
	February	3,974	1,795	1,582	10	65,091
	March	3,540	1,751	1,710	22	62,388
	April	3,003	1,548	1,575	7	66,209
	May	2,686	1,653	1,231	16	72,233
	June	2,625	1,572	1,031	4	71,860
	July	2,772	1,586	1,295	10	75,320
	August	2,929	1,630	1,275	25	74,166
	September	2,716	1,636	1,318	12	81,314
	October	2,621	1,564	1,120	8	83,435
	November	2,845	1,662	1,352	6	88,729
	December	3,107	1,750	1,410	19	90,194
	AVERAGE	**3,023**	**1,667**	**1,355**	**13**	
1979	January	3,550	1,907	1,371	6	81,997
	February	3,589	1,792	1,300	10	68,229
	March	3,238	1,718	1,642	14	71,968
	April	2,487	1,643	1,134	2	81,002
	May	2,519	1,588	1,051	8	84,855
	June	2,552	1,534	880	8	80,893
	July	2,451	1,576	1,065	18	86,631
	August	2,582	1,590	1,023	14	87,542
	September	2,617	1,638	979	2	87,775
	October	2,553	1,611	1,042	8	90,896
	November	2,793	1,742	1,037	5	90,636
	December	2,976	1,879	1,272	16	95,859
	AVEAGE	**2,822**	**1,684**	**1,150**	**9**	
1980	January	2,865	1,766	1,132	5	97,153
	February	3,099	1,770	1,119	17	90,959
	March	R2,650	R1,581	R971	2	R88,269
	April†	2,514	1,633	773	[1]40	84,977
	May†	R2,289	R1,577	R813	20	R87,596
	June†	*2,350*	*1,536*	*824*	NA	*83,185*
	AVERAGE	**2,625**	**1,643**	**938**	**NA**	

Geographic coverage: the 50 United States and District of Columbia.
[1]In April 1980, residual fuel oil exports increased due to shipments of high sulfur fuel to a Caribbean refinery to be desulfurized and returned to the United States.
Estimated data in italics. These are likely to be revised next month.
‡Total as of December 31.
†Preliminary data. R = Revised data. NA = Not available.
Note: Bureau of Mines' stock coverage was expanded at the end of 1974 to include an additional 100 bulk terminal operators; the new coverage begins here with 1975.
Sources: •See Sources on the last page of this section.

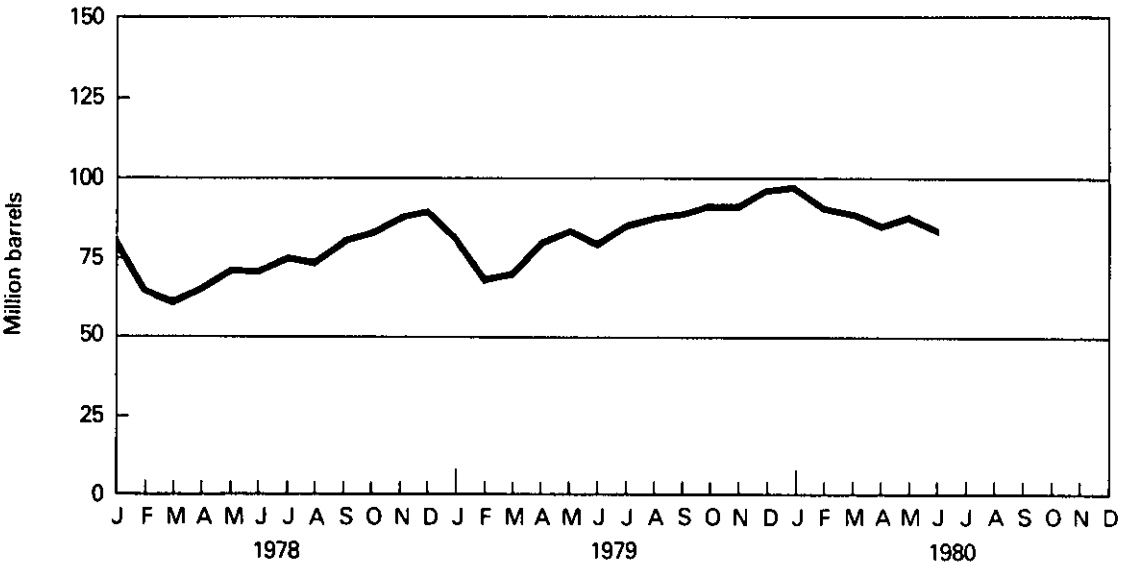
Petroleum

Residual Fuel Oil

Product Supplied, Refinery Production and Imports



Stocks



Petroleum

Natural Gas Plant Liquids, Including Liquefied Refinery Gases

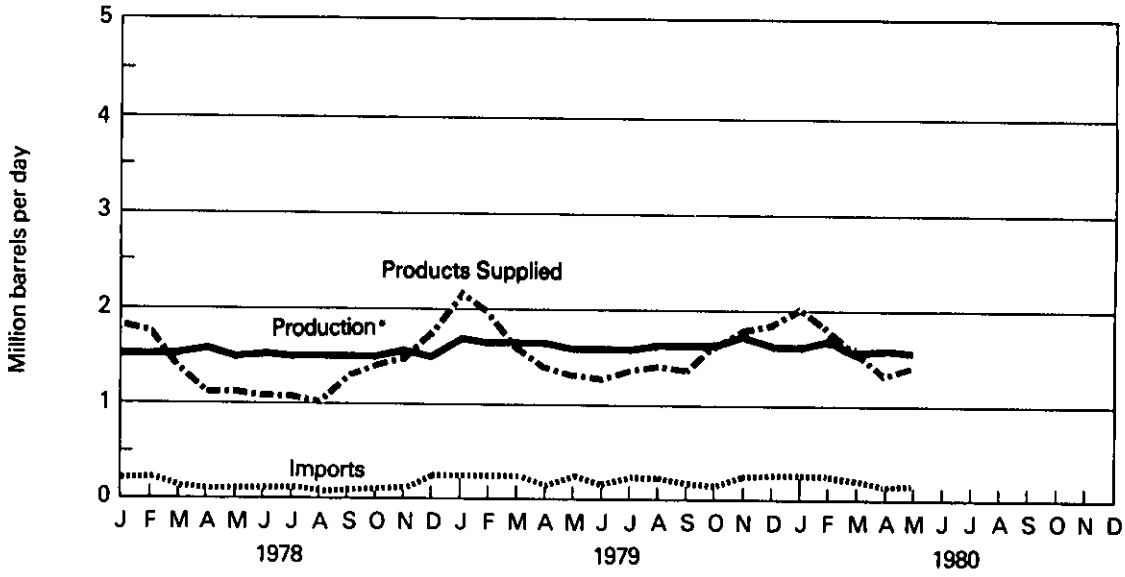
		Products Supplied[1]	Production[1]		Used at Refineries[1]	Imports	Stocks[1]
			At processing plants	At refineries			
		Thousand barrels per day					Thousand barrels
1973	**AVERAGE**	**1,454**	**1,738**	**375**	**815**	**239**	**‡106,659**
1974	**AVERAGE**	**1,422**	**1,688**	**338**	**746**	**212**	**‡120,175**
1975	**AVERAGE**	**1,352**	**1,633**	**311**	**710**	**185**	**‡132,653**
1976	**AVERAGE**	**1,407**	**1,603**	**340**	**725**	**196**	**‡124,518**
1977	**AVERAGE**	**1,427**	**1,618**	**352**	**673**	**203**	**‡144,902**
1978	January	1,875	1,557	326	647	200	130,682
	February	1,803	1,562	338	657	207	120,217
	March	1,429	1,590	361	602	132	121,232
	April	1,164	1,619	352	601	101	129,870
	May	1,171	1,530	363	494	109	139,581
	June	1,125	1,583	367	649	109	147,540
	July	1,124	1,558	348	563	122	157,527
	August	1,090	1,556	351	657	93	164,537
	September	1,338	1,546	379	644	106	165,600
	October	1,481	1,540	352	658	116	161,006
	November	1,588	1,602	357	755	122	152,519
	December	1,832	1,566	363	743	258	[3]140,052
	AVERAGE	**1,416**	**1,567**	**355**	**639**	**139**	
1979	January	2,222	1,748	337	763	256	124,138
	February	1,998	1,703	325	757	252	110,412
	March	1,654	1,728	333	718	257	107,759
	April	1,449	1,708	354	679	160	110,216
	May	1,357	1,647	389	655	255	118,505
	June	1,316	1,641	382	606	175	126,468
	July	1,410	1,643	361	565	240	134,523
	August	1,477	1,614	363	599	236	138,491
	September	1,376	1,612	323	584	194	143,336
	October	1,669	1,663	321	596	193	140,215
	November	1,806	1,738	323	713	268	133,925
	December	1,876	1,643	343	630	273	125,597
	AVERAGE	**1,633**	**1,674**	**346**	**655**	**230**	
1980	January	2,076	1,647	338	698	282	110,378
	February	1,843	1,651	354	572	265	105,389
	March	R1,573	R1,569	R342	R518	R224	R106,070
	April	1,321	1,638	343	621	184	118,000
	May	1,397	1,583	371	584	176	122,000
	AVERAGE	**1,641**	**1,617**	**350**	**599**	**226**	

Geographic coverage: the 50 United States and District of Columbia.
[1]See Explanatory Note 7 and Definitions.
[3]EIA natural gas plant coverage was expanded in January 1979 to include approximately 80 more plants. Calculated on the new basis, December 1978 closing stocks of natural gas plant liquids totaled 144,500 thousand barrels.
‡Total as of December 31. R=Revised data.
Sources: • 1973 through February 1980 are shown on last page of this section.
• April 1980 through May 1980: EIA estimates based on historical analyses.
• Sources for the *Energy Data Reports* are shown on the last page of this section.

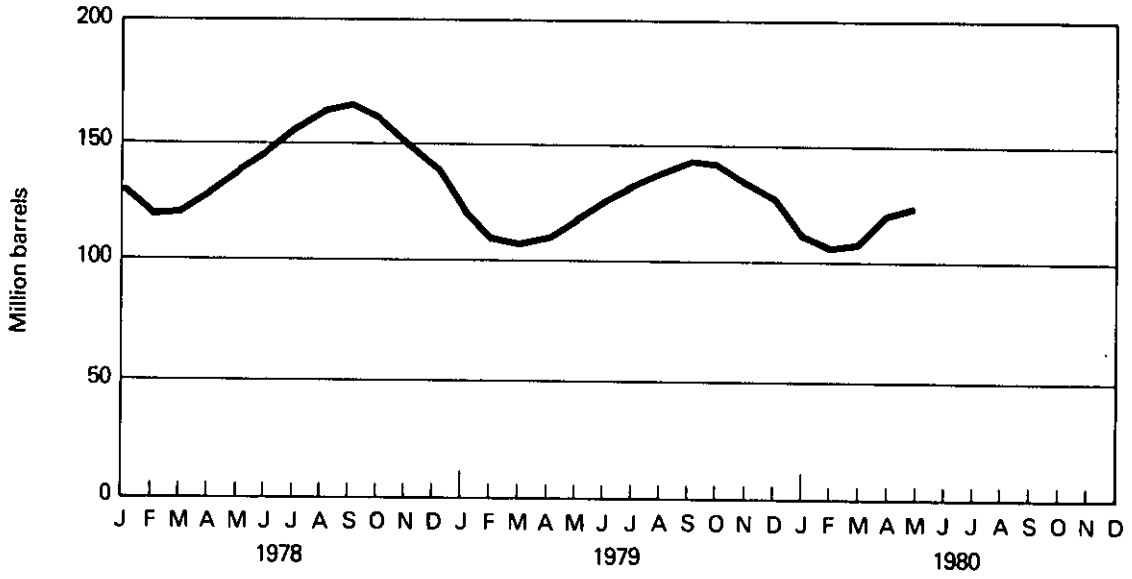
Petroleum

Natural Gas Plant Liquids

Products Supplied, Production and Imports



Stocks



*At processing plants.

Petroleum

Petroleum Primary Supply Balance

	1979				
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year
	Thousand barrels per day				
Primary Supply					
Crude oil and lease condensate production	8,514	8,510	8,507	8,601	8,533
Natural gas plant liquids production	1,727	1,665	1,623	1,681	1,674
Other hydrocarbon supply	32	38	64	70	51
Crude oil imported[1]	6,584	6,362	6,537	6,430	6,478
Petroleum products imported[2]	2,228	1,725	1,771	2,013	1,933
Total new primary supply	19,085	18,300	18,503	18,794	18,669
Processing gain	458	498	567	560	521
Stock change—all oils[3]	−1,512	+707	+1,061	+370	+164
Total net primary supply	21,055	18,091	18,009	18,984	19,026
Unaccounted for crude oil[4]	−246	−38	−30	−105	−104
Disposition					
Crude oil and petroleum products exported	494	466	457	473	472
Crude oil losses	15	15	16	15	15
Total products supplied[5]	20,300	17,572	17,506	18,391	18,434
Total disposition	20,809	18,054	17,978	18,879	18,922

	1980
	1st Qtr.†
Primary Supply	
Crude oil and lease condensate production	8,660
Natural gas plant liquids production	1,639
Other hydrocarbon supply	51
Crude oil imported[1]	5,961
Petroleum products imported[2]	1,830
Total new primary supply	18,141
Processing gain	627
Stock change—all oils[3]	+62
Total net primary supply	18,706
Unaccounted for crude oil[4]	−22
Disposition	
Crude oil and petroleum products exported	552
Crude oil losses	15
Total products supplied[5]	18,117
Total disposition	18,684

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Includes crude oil imported for the Strategic Petroleum Reserve.
[2]Includes plant condensate, natural gasoline and unfinished oils.
[3]Includes petroleum stored in the Strategic Petroleum Reserve.
[4]Balancing item resulting from statistical inconsistencies.
[5]Includes international bunkers.
†Preliminary data.
Sources: • 1979: Energy Information Administration (EIA) *Energy Data Reports,* "Petroleum Statement, Monthly."
- 1st Quarter 1980: EIA, "Monthly Petroleum Statistics Report" and "Petroleum Statement, Monthly" (except domestic production and exports).
- Exports for February 1980 through March 1980 are preliminary data based on the EIA-87 and the Bureau of the Census publications EM 522 and EM 594.
- Domestic production for February 1980 through March 1980 are estimates based on historical data from State Conservation Agencies.
- Sources for the *Energy Data Reports* and the "Monthly Petroleum Statistics Report" are shown on last page of this section.

Sources for the Petroleum Section

- 1973 through 1976: Bureau of Mines *Mineral Industry Surveys,* "Petroleum Statement, Annual" (except unleaded gasoline) and "PAD Districts Supply/Demand, Annual."
- Unleaded gasoline — Energy Information Administration (EIA) "Monthly Petroleum Statistics Report."
- 1977 and 1978: EIA *Energy Data Reports,* "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual."
- January 1979 through March 1980: EIA *Energy Data Reports,* "Petroleum Statement, Monthly" and "PAD Districts Supply/Demand, Monthly."
- Penultimate and preceding month: EIA "Monthly Petroleum Statistics Report"(except domestic production and exports).
- Domestic production for the 3 most recent months are EIA estimates based on historical data from State Conservation Agencies.
- Exports for penultimate and preceding month are preliminary data based on Form EIA-87 and the Bureau of the Census publications EM 522 and EM 594.
- Data for the most recent month are estimates based on EIA weekly data.
- Sources for the *Energy Data Reports* and the "Monthly Petroleum Statistics Report" are: EIA Forms EIA-64 (Natural Gas Liquids Operations Report), EIA-87 (Refinery Report), EIA-88 (Bulk Terminals Report), EIA-89 (Pipeline Report) and EIA-90 (Crude Oil Stock Report); Economic Regulatory Administration (ERA) Forms ERA-60 (Imports) and FEA P133 (Imports from Puerto Rico); Bureau of the Census publications IM 145 (Imports), EM 522 (Exports), and EM 594 (Exports); and State Conservation Agencies (Crude Production).

Part 4 Natural Gas

Natural Gas

Consumption of natural gas in the United States during June 1980 was an estimated 1.3 trillion cubic feet (Tcf). This was 6.3 percent less than in May 1980 and 1.2 percent greater than in June 1979. Estimated consumption during the first 6 months of 1980 totaled 11.0 Tcf, 1.4 percent higher than during the first half of 1979.

Production of dry natural gas in June 1980 was an estimated 1.6 Tcf, 6.0 percent less than in May 1980 and approximately the same as in June 1979. Output during the first half of 1980 totaled 10.0 Tcf, 2.2 percent higher than during the comparable 1979 period.

Imports of natural gas in June 1980 were an estimated 69 billion cubic feet (Bcf), 31.7 percent lower than in the previous June. This resulted from a decrease in pipeline receipts from Canada and the discontinuance of liquefied natural gas (LNG) shipments from Algeria due to an impasse in negotiations on a new pricing formula. Imports of natural gas during the first 6 months of 1980 totaled an estimated 573 Bcf, 8.0 percent lower than receipts during the comparable 1979 period.

Stocks of working gas* in underground natural gas storage reservoirs at the end of June 1980 totaled almost 2.3 Tcf, 17.0 percent above those available a year earlier. Net injections into storage during June 1980 were 303 Bcf, 11.4 percent lower than during the previous June.

*Gas available for withdrawal.

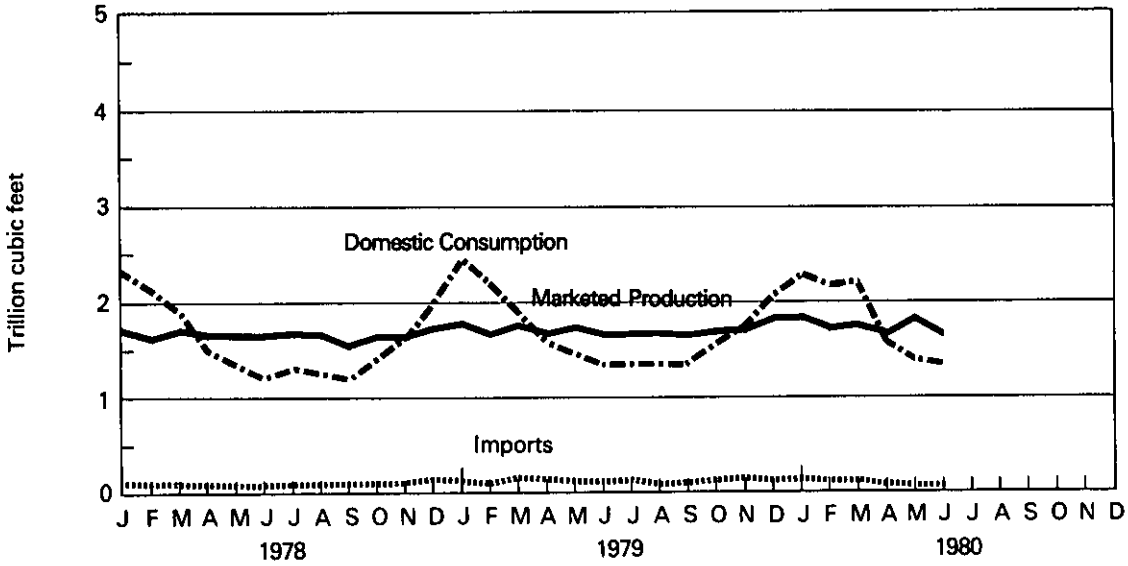
Natural Gas

		Domestic Consumption	Production		Domestic Producer Sales to Major Interstate Pipelines	Imports	Exports
			Marketed	Dry			
		Billion cubic feet					
1973	**TOTAL**	**22,049**	**22,648**	**21,731**	**12,067**	**1,033**	**77**
1974	**TOTAL**	**21,223**	**21,601**	**20,714**	**11,462**	**959**	**77**
1975	**TOTAL**	**19,538**	**20,109**	**19,237**	**10,652**	**953**	**73**
1976	**TOTAL**	**19,946**	**19,952**	**19,098**	**10,140**	**964**	**65**
1977	**TOTAL**	**19,521**	**20,025**	**19,163**	**9,883**	**1,011**	**56**
1978	January	2,382	1,743	1,669	862	86	5
	February	2,139	1,649	1,579	756	77	5
	March	1,918	1,748	1,673	861	86	5
	April	1,539	1,668	1,597	836	78	3
	May	1,380	1,664	1,593	819	74	5
	June	1,249	1,623	1,554	768	68	4
	July	1,333	1,693	1,621	821	72	5
	August	1,285	1,658	1,587	821	74	5
	September	1,235	1,576	1,509	800	73	6
	October	1,440	1,635	1,565	847	80	3
	November	1,658	1,607	1,538	838	91	3
	December	2,069	1,710	1,637	882	107	4
	TOTAL	**19,627**	**19,974**	**19,122**	**9,911**	**966**	**53**
1979	January	2,417	1,761	1,686	890	102	6
	February	2,195	1,646	1,576	819	97	5
	March	1,876	1,749	1,674	907	113	5
	April	1,586	1,682	1,610	871	106	5
	May	1,427	1,712	1,639	877	104	5
	June	1,314	1,646	1,576	812	101	5
	July	1,323	1,654	1,583	851	104	6
	August	1,337	1,682	1,610	880	97	4
	September	1,322	1,626	1,557	820	98	5
	October	1,550	1,696	1,624	888	107	3
	November	1,759	1,713	1,640	921	114	3
	December	2,057	1,806	1,729	960	110	4
	TOTAL	**20,163**	**20,373**	**19,504**	**10,496**	**1,253**	**56**
1980	January	2,280	1,817	1,739	981	119	5
	February	2,193	1,705	1,632	898	111	3
	March	2,179	1,827	1,749	NA	108	5
	April	R1,569	R1,667	R1,596	NA	R91	6
	May	1,420	1,760	1,680	NA	75	6
	June	1,330	1,650	1,580	NA	69	5
	TOTAL (Year-to-date)	**10,971**	**10,426**	**9,976**	**NA**	**573**	**30**

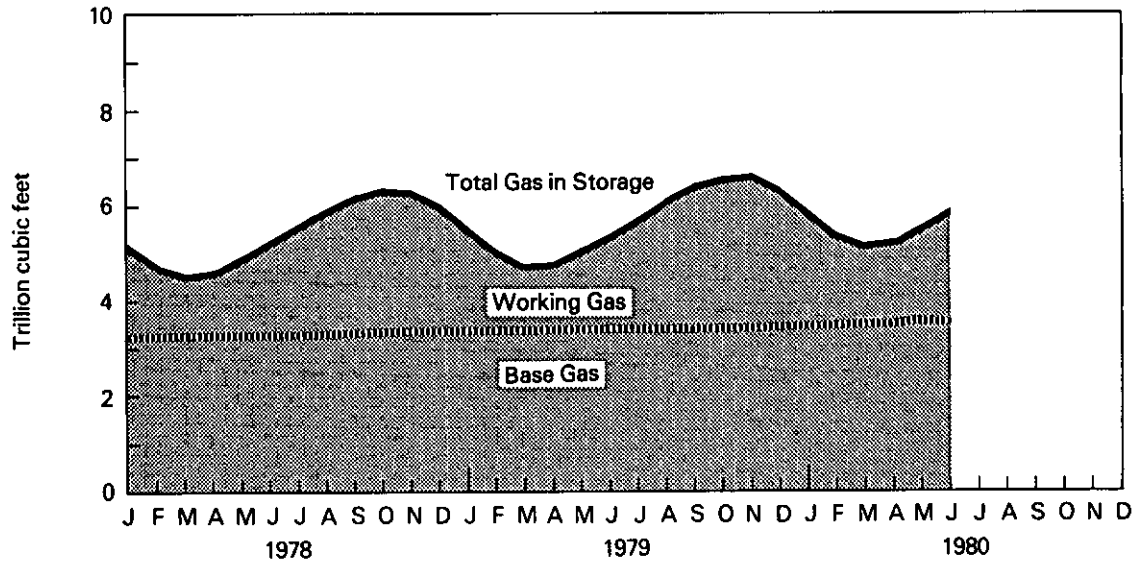
Geographic coverage: the 50 United States and District of Columbia.
R = Revised data. NA = Not available.
Sources: • Domestic Consumption — 1973 through 1976: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook*, "Natural Gas" chapter; January 1977 forward: EIA estimates based on a supply/disposition balance calculation.
- Production — State reports to the Interstate Oil Compact Commission and EIA estimates for states that do not report monthly data on a regular or timely basis.
- Domestic Producer Sales — Federal Power Commission (FPC) Form 11, "Natural Gas Pipeline Company Monthly Statement."
- Imports — 1973 through 1979: FPC Form 14, "Imports and Exports of Natural Gas"; January 1980 forward: EIA estimates based on import data from FPC Form 11.
- Exports — 1973 through 1979: FPC Form 14; January 1980 forward: EIA estimates based primarily on historical data reported on FPC Form 14.

Natural Gas

Domestic Consumption, Marketed Production and Imports



Gas in Storage



Natural Gas

Natural Gas in Underground Storage[1]

		Total Gas in Storage	Base Gas	Working Gas	Storage Injections	Storage Withdrawals	Net Storage Injections[2]
				Billion cubic feet			
1975		**‡5,358**	**‡3,150**	**‡2,208**	**NA**	**NA**	**NA**
1976		**‡5,231**	**‡3,310**	**‡1,921**	**1,952**	**2,074**	**(122)**
1977		**‡5,844**	**‡3,377**	**‡2,467**	**2,390**	**1,767**	**623**
1978	January	5,193	3,374	1,819	21	668	(647)
	February	4,683	3,373	1,310	21	530	(509)
	March	4,497	3,374	1,123	92	278	(186)
	April	4,608	3,377	1,231	179	68	111
	May	4,870	3,379	1,491	291	30	261
	June	5,217	3,381	1,836	365	18	347
	July	5,550	3,386	2,164	349	16	333
	August	5,904	3,403	2,501	359	12	347
	September	6,224	3,411	2,813	329	9	320
	October	6,402	3,444	2,958	209	28	181
	November	6,352	3,425	2,927	82	135	(53)
	December	5,999	3,459	2,540	33	384	(351)
1979	January	5,348	3,458	1,890	21	673	(652)
	February	4,806	3,457	1,349	23	566	(543)
	March	4,695	3,459	1,236	94	205	(111)
	April	4,762	3,427	1,335	182	73	109
	May	5,057	3,438	1,619	308	13	295
	June	5,399	3,449	1,950	350	8	342
	July	5,743	3,459	2,284	361	19	342
	August	6,095	3,467	2,628	362	12	350
	September	6,401	3,481	2,920	326	14	312
	October	6,563	3,484	3,079	196	34	162
	November	6,541	3,496	3,045	108	132	(24)
	December	6,297	3,537	2,760	53	292	(239)
1980	January	5,865	3,535	2,330	21	465	(444)
	February	5,397	3,536	1,861	24	493	(469)
	March	5,131	3,542	1,589	41	307	(266)
	April	5,227	3,547	1,680	174	78	96
	May	5,538	3,553	1,985	319	8	311
	June	5,841	3,560	2,281	316	13	303

Geographic coverage: the 50 United States and District of Columbia.
[1]See Explanatory Note 9.
[2]Net Storage Injections = storage injection minus storage withdrawal. Parentheses indicate withdrawal greater than injection.
‡Total as of December 31.
NA = Not available.
Source: • Energy Information Administration Form 191 and Federal Power Commission Form 8, "Underground Gas Storage Report."

Oil and Gas Resource Development

The rotary rig count increased to 2,850 in June 1980, up from the 2,797 count of the month before. This represents a 42.6 percent increase over the June 1979 count of 1,999 rotary rigs.

Wells completed in June 1980 totaled 4,991. This is a 20.4 percent increase from the number completed during June 1979.

Oil well completions in June 1980 (2,232 well completions) were up 31.6 percent from June 1979 (1,696 completions). In June 1980, 1,296 gas wells were completed, 8.1 percent above the June 1979 level. Dry holes increased 16.9 percent (1,463 as compared to 1,252 during the previous June). Total footage drilled increased 26.2 percent (24.6 million feet as compared to 19.5 million feet the year before).

There were 39 crews engaged in seismic exploratory work offshore in June 1980. This is a 21.9 percent increase from the June 1979 level. June 1980 onshore seismic activity attained a new high of 496 crews, 33.3 percent higher than activity during June 1979.

Oil and Gas Resource Development

		Rotary Rigs in Operation		Exploratory and Development Wells Completed[1,2]				Total Footage of Wells Completed[1]
		Monthly average		Oil	Gas	Dry	Total	Thousand feet
1973	**AVERAGE**	**1,194**	**TOTAL**	**9,902**	**6,385**	**10,305**	**26,592**	**136,391**
1974	**AVERAGE**	**1,475**	**TOTAL**	**12,784**	**7,240**	**11,674**	**31,698**	**150,551**
1975	**AVERAGE**	**1,660**	**TOTAL**	**16,408**	**7,580**	**13,247**	**37,235**	**174,434**
1976	**AVERAGE**	**1,656**	**TOTAL**	**17,059**	**9,085**	**13,621**	**39,765**	**181,780**
1977	**AVERAGE**	**2,001**	**TOTAL**	**18,912**	**11,378**	**14,692**	**44,982**	**210,848**
1978	January	2,128		1,184	783	1,233	3,200	15,394
	February	2,135		1,486	851	1,239	3,576	16,933
	March	2,158		1,499	1,247	1,420	4,166	20,392
	April	2,198		1,369	971	1,112	3,452	17,559
	May	2,249		1,209	1,004	1,166	3,379	17,189
	June	2,286		1,812	1,071	1,489	4,372	21,115
	July	2,307		1,503	985	1,191	3,679	17,258
	August	2,325		1,516	1,085	1,290	3,891	18,440
	September	2,332		1,619	1,227	1,511	4,357	21,234
	October	2,346		1,395	1,102	1,441	3,938	19,109
	November	2,356		1,294	1,027	1,308	3,629	17,805
	December	2,286		1,861	1,588	1,828	5,277	24,108
	AVERAGE	**2,259**	**TOTAL**	**17,775**	**13,064**	**16,218**	**47,057**	**227,110**
1979	January	2,199		1,372	996	1,278	3,646	17,963
	February	2,064		1,463	1,139	1,076	3,678	18,017
	March	1,970		1,544	1,343	1,372	4,259	21,175
	April	1,943		1,135	1,085	926	3,146	16,019
	May	1,960		1,335	1,024	1,166	3,525	17,451
	June	1,999		R1,696	R1,199	R1,252	R4,147	R19,520
	July	2,094		1,526	1,080	1,130	3,736	16,749
	August	2,222		1,523	1,246	1,368	4,137	19,565
	September	2,284		1,819	1,374	1,428	4,621	22,590
	October	2,380		1,623	1,123	1,287	4,033	18,840
	November	2,460		1,867	1,273	1,496	4,636	21,846
	December	2,552		2,383	1,739	1,886	6,008	27,010
	AVERAGE	**2,177**	**TOTAL**	**19,383**	**14,681**	**15,752**	**49,816**	**238,659**
1980	January	2,571		1,440	781	1,243	3,464	16,438
	February	2,613		1,632	1,007	1,311	3,950	18,988
	March	2,658		2,383	1,839	1,547	5,769	27,665
	April	2,682		1,836	1,120	1,168	4,124	18,884
	May	2,797		2,061	1,080	1,202	4,343	20,034
	June	2,850		2,232	1,296	1,463	4,991	24,640
	AVERAGE	**2,695**	**TOTAL**	**11,606**	**7,132**	**7,937**	**26,675**	**126,876**

Geographic coverage: the 50 United States and District of Columbia.
[1]Excludes service wells and stratigraphic and core tests.
[2]Data reported for the first 2 months of each quarter cover 4 weeks of drilling activity, and data for the last month of the quarter cover 5 weeks of drilling activity.
R = Revised data.
Note: Totals reflect subsequent data revisions and therefore may not agree with cumulative monthly data.
Sources: • Rotary Rigs: Hughes Tool Company, "Rotary Rigs Running — By State."
• Wells: American Petroleum Institute (API), "Monthly Drilling Report" and "Quarterly Review of Drilling Statistics for the United States."

Oil and Gas Resource Development

		Crews Engaged in Seismic Exploration			Line-Miles of Seismic Exploration		
		Offshore	Onshore	Total	Offshore[1]	Onshore[1]	Total[1]
		Monthly average			Annual total		
1973	**AVERAGE**	**23**	**227**	**250**	**258,944**	**127,160**	**386,104**
1974	**AVERAGE**	**31**	**274**	**305**	**341,784**	**158,629**	**500,413**
1975	**AVERAGE**	**30**	**254**	**284**	**309,283**	**150,694**	**459,977**
1976	**AVERAGE**	**25**	**237**	**262**	**226,303**	**142,926**	**369,229**
1977	**AVERAGE**	**27**	**281**	**308**	**124,676**	**120,072**	**244,748**
1978	January	26	302	328			
	February	23	305	328			
	March	20	314	334			
	April	21	315	336			
	May	21	330	351			
	June	26	336	362			
	July	26	341	367			
	August	27	338	365			
	September	21	333	354			
	October	29	342	371			
	November	27	342	369			
	December	30	328	358			
	AVERAGE	**25**	**327**	**352**	**174,607**	**135,899**	**310,506**
1979	January	28	327	355			
	February	29	321	350			
	March	32	332	364			
	April	30	330	360			
	May	28	355	383			
	June	32	372	404			
	July	31	376	407			
	August	31	393	424			
	September	30	403	433			
	October	29	407	436			
	November	31	408	439			
	December	31	419	450			
	AVERAGE	**30**	**370**	**400**			
1980	January	29	439	468			
	February	29	440	469			
	March	29	448	477			
	April	31	465	496			
	May	34	468	502			
	June	39	496	535			
	AVERAGE	**32**	**459**	**491**			

Geographic coverage: the 50 United States and District of Columbia.
[1]Monthly data not available.
Sources: • Society of Exploration Geophysicists, "Monthly Seismic Crew Count" and annual reports published in their bulletin, *Geophysics.*

Coal

Coal production in June 1980 was 73.3 million tons, 4.9 percent above the 69.9 million tons produced in June 1979. Production in the first 6 months of 1980 totaled 417.2 million tons, 10.2 percent higher than production in the first 6 months of 1979.

Imports of coal in May 1980 totaled 0.2 million tons, 0.1 million tons above the amount imported during May 1979. Exports of coal in May 1980 totaled 8.6 million tons, 2.4 million tons more than the amount exported during May 1979. During May, coal exports were principally to Canada (26.2 percent) and Japan (21.3 percent).

Electric utility coal consumption in May 1980 totaled 41.5 million tons, 0.07 million tons less than consumption in May 1979. Coke plants, the second largest coal consuming sector, used 6.1 million tons in May 1980, 8.0 percent below the amount consumed in May 1979.

Electric utility stockpiles increased from 133.8 million tons at the end of May 1979 to 174.0 million tons at the end of May 1980. Coal stocks held by coke plants increased from 9.0 million tons at the end of May 1979 to 9.7 million tons at the end of May 1980.

Coal

Bituminous, Lignite, and Anthracite

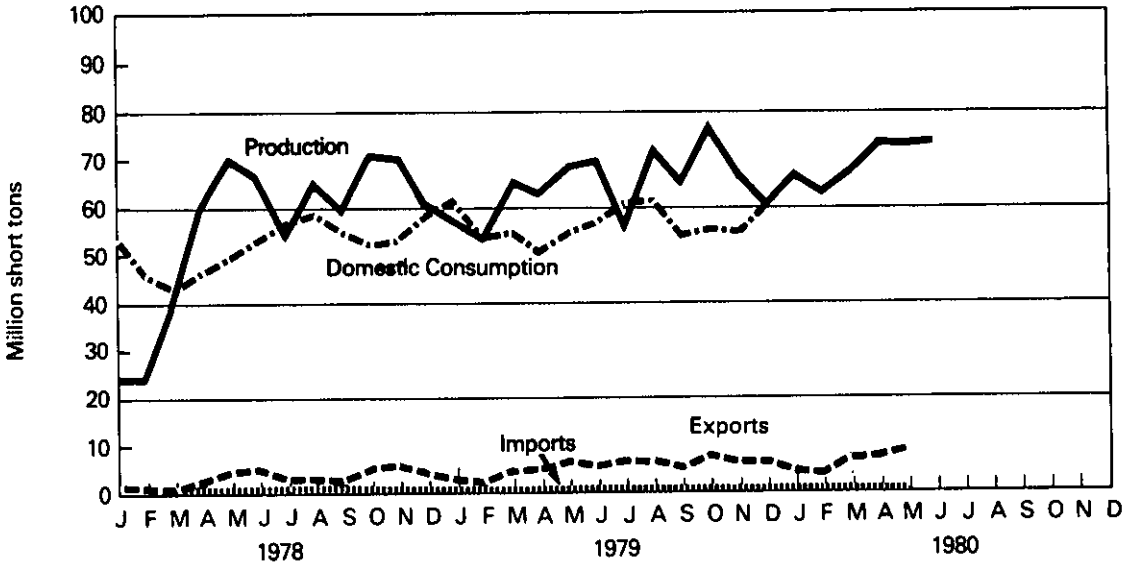
		Production	Domestic Consumption	Imports[1]	Exports[2,3]	Stocks[4]
				Thousand short tons		
1973	**TOTAL**	**598,568**	**562,584**	**127**	**53,587**	**104,335**
1974	**TOTAL**	**610,023**	**558,402**	**2,080**	**60,661**	**96,323**
1975	**TOTAL**	**654,641**	**562,641**	**940**	**66,309**	**128,050**
1976	**TOTAL**	**684,913**	**603,791**	**1,203**	**60,021**	**134,438**
1977	**TOTAL**	**697,205**	**625,290**	**1,647**	**54,312**	**157,098**
1978	January	23,664	54,313	139	894	122,435
	February	24,198	45,488	159	588	97,057
	March	40,001	43,288	231	377	87,403
	April	61,011	46,283	417	2,613	100,378
	May	70,417	49,417	323	4,473	114,530
	June	67,111	52,795	291	5,429	126,694
	July	54,856	56,200	313	3,574	123,327
	August	65,813	58,056	227	3,634	126,343
	September	59,189	55,024	196	3,454	129,407
	October	71,681	53,003	371	5,053	137,279
	November	71,156	53,155	98	6,030	146,816
	December	61,066	58,203	188	4,572	145,551
	TOTAL	**670,164**	**625,225**	**2,953**	**40,691**	
1979	January	56,941	61,278	186	3,605	136,346
	February	53,988	54,510	252	2,726	128,929
	March	65,952	54,894	123	4,642	133,924
	April	63,265	51,653	161	5,268	142,247
	May	68,455	54,047	112	6,215	151,018
	June	69,865	56,082	209	5,975	154,937
	July	54,910	60,464	88	6,297	148,198
	August	72,640	60,815	320	6,248	152,458
	September	64,380	54,290	180	5,146	157,960
	October	76,510	55,483	152	7,446	169,393
	November	68,105	55,447	130	6,170	177,921
	December	60,739	60,189	146	6,278	179,632
	TOTAL	**775,750**	**679,156**	**2,059**	**66,016**	
1980	January	66,350	NA	121	4,460	NA
	February	63,330	NA	193	4,041	NA
	March	67,475	NA	93	5,633	NA
	April	73,645	NA	63	7,563	NA
	May	73,130	NA	207	8,597	NA
	June	73,295	NA	NA	NA	NA
	TOTAL (Year-to-date)	**417,225**	**NA**	**NA**	**NA**	**NA**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
See Explanatory Note 10 for methodology used to calculate domestic consumption from 1978 forward.
[1]Bituminous coal is the only type of coal imported during the years shown above.
[2]Data include bituminous coal and anthracite only from 1973 through 1979. 1980 includes lignite (about 5,000 short tons in May 1980).
[3]Excludes shipments of anthracite to U.S. Armed Forces overseas (300,000 tons in 1979).
[4]Stocks held by electric utilities, coke plants, and the other Industrial Sector at the end of period.
NA = Not available.
Sources: • See Sources on the last page of this section.

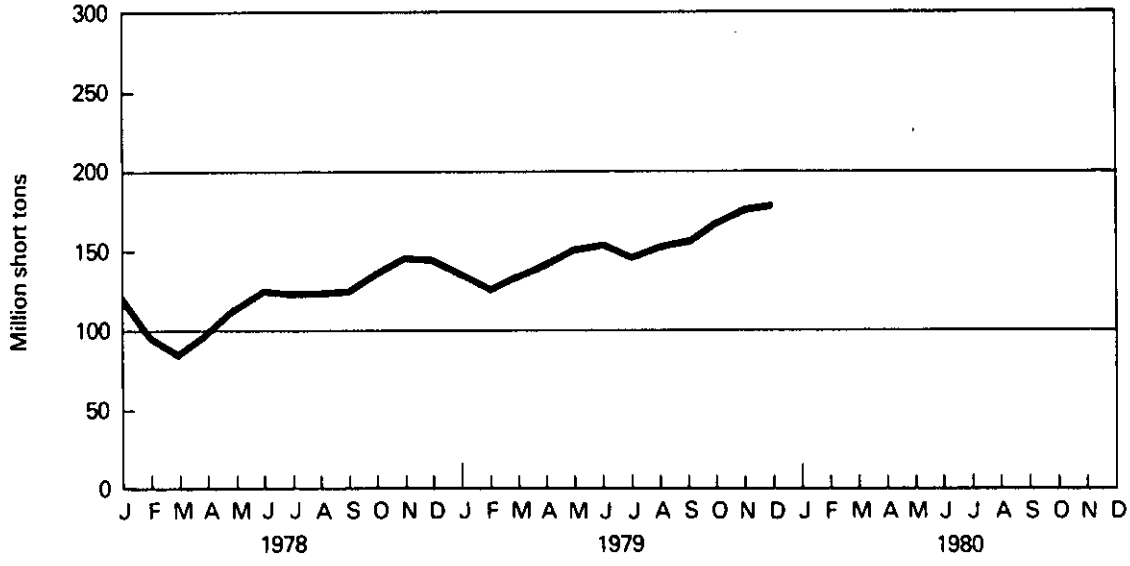
Coal

Bituminous, Lignite, and Anthracite

Domestic Production, Consumption, Imports, and Exports



Stocks



Coal

Consumption — Bituminous, Lignite, and Anthracite

			Industrial			
		Electric Utilities	Coke Plants[1]	Other Industrial[2] Including Transportation	Residential and Commercial	Total
			Thousand short tons			
1973	**TOTAL**	**389,212**	**94,101**	**68,154**	**11,117**	**562,584**
1974	**TOTAL**	**391,811**	**90,191**	**64,983**	**11,417**	**558,402**
1975	**TOTAL**	**405,962**	**83,598**	**63,670**	**9,410**	**562,641**
1976	**TOTAL**	**448,371**	**84,704**	**61,800**	**8,916**	**603,791**
1977	**TOTAL**	**477,126**	**77,739**	**61,472**	**8,954**	**625,290**
1978	January	42,709	5,425	5,155	1,024	54,313
	February	35,833	4,182	4,422	1,051	45,488
	March	34,005	4,014	4,451	818	43,288
	April	34,618	5,529	5,445	692	46,283
	May	37,199	6,424	5,169	624	49,417
	June	40,794	6,399	4,998	604	52,795
	July	44,118	6,552	4,983	547	56,200
	August	46,040	6,460	4,998	558	58,056
	September	42,646	6,417	5,323	638	55,024
	October	39,853	6,706	5,523	921	53,003
	November	39,751	6,523	5,902	979	53,155
	December	43,669	6,763	6,716	1,055	58,203
	TOTAL	**481,235**	**71,394**	**63,085**	**9,511**	**625,225**
1979	January	46,902	6,565	6,455	1,356	61,278
	February	41,891	5,916	5,863	840	54,510
	March	41,781	6,799	5,644	670	54,894
	April	38,979	6,532	5,538	604	51,653
	May	41,532	6,658	5,296	561	54,047
	June	44,008	6,439	5,061	574	56,082
	July	48,216	6,499	5,250	499	60,464
	August	48,549	6,403	5,390	473	60,815
	September	42,167	6,321	5,186	616	54,290
	October	42,970	6,391	5,273	849	55,483
	November	42,980	6,119	5,346	1,002	55,447
	December	47,075	6,426	5,625	1,064	60,189
	TOTAL	**527,051**	**77,070**	**65,927**	**9,108**	**679,156**
1980	January	50,369	6,343	NA	NA	NA
	February	47,513	6,010	NA	NA	NA
	March	46,685	6,428	NA	NA	NA
	April	40,692	6,247	NA	NA	NA
	May	41,464	6,127	NA	NA	NA
	TOTAL (Year-to-date)	**226,722**	**31,157**	**NA**	**NA**	**NA**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Bituminous coal and anthracite only. Lignite is not used at coke plants.
[2]See Explanatory Note 10.
NA = Not available.
Sources: • See Sources on the last page of this section.

Coal

Stocks [1] — Bituminous, Lignite and Anthracite

			Industrial		
		Electric Utilities	Coke Plants[2]	Other Industrial	Total
			Thousand short tons		
1973		**86,967**	**6,998**	**10,370**	**104,335**
1974		**83,509**	**6,209**	**6,605**	**96,323**
1975		**110,724**	**8,797**	**8,529**	**128,050**
1976		**117,436**	**9,902**	**7,100**	**134,438**
1977		**133,219**	**12,816**	**11,063**	**157,098**
1978	January	105,248	8,202	8,985	122,435
	February	84,555	5,144	7,358	97,057
	March	77,016	3,817	6,570	87,403
	April	87,980	5,667	6,731	100,378
	May	100,628	7,207	6,695	114,530
	June	110,752	8,378	7,564	126,694
	July	109,699	6,701	6,927	123,327
	August	112,266	6,406	7,671	126,343
	September	115,162	6,327	7,918	129,407
	October	121,597	7,413	8,269	137,279
	November	129,379	8,633	8,804	146,816
	December	128,225	8,278	9,048	145,551
1979	January	119,948	7,568	8,830	136,346
	February	114,394	6,650	7,885	128,929
	March	118,542	7,441	7,941	133,924
	April	125,776	8,401	8,070	142,247
	May	133,793	8,977	8,248	151,018
	June	136,627	9,582	8,728	154,937
	July	131,095	8,239	8,864	148,198
	August	134,257	8,692	9,509	152,458
	September	139,129	8,980	9,851	157,960
	October	149,949	9,558	9,886	169,393
	November	157,737	9,985	10,199	177,921
	December	159,714	10,155	9,763	179,632
1980	January	158,707	9,634	NA	NA
	February	157,120	9,263	NA	NA
	March	157,625	9,317	NA	NA
	April	164,524	9,579	NA	NA
	May	174,044	9,692	NA	NA

Geographic coverage: the 50 United States and Distict of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Stocks held by utilities, coke plants, and general industry at end of period.
[2]Bituminous coal and anthracite only. Lignite is not used at coke plants.
NA = Not available.
Sources: • See Sources on the last page of this section.

Sources for the Coal Section

- 1973 through September 1977: Bureau of Mines, *Minerals Yearbook* and *Mineral Industry Surveys.*
- October 1977 forward: Production: Association of American Railroads, Statement CS54A; Commonwealth of Pennsylvania, Department of Environmental Resources, "Anthracite Mines—Monthly Tonnage, Manhour and Accident Report" and "Annual Report on Mining, Oil and Gas, and Land Reclamation and Conservation Activities"; Energy Information Administration (EIA) "Weekly Coal Report," "Bituminous Coal and Lignite Quarterly Distribution Report" (Form EIA-6), "Bituminous Coal and Lignite, Production and Mine Operation—Annual Report" (Form EIA-7), and Bureau of Mines Form 6–1385A, "Pennsylvania Anthracite Production, Mines Without Preparation Plants," BOM Form 6–1387A, "Pennsylvania Anthracite Production, Contractor's Report," BOM Form 6–1388A, "Pennsylvania Anthracite Production, River Coal Report"; and Various States, Annual Coal Mining Reports.
- October 1977 forward: Domestic Consumption and Stocks: EIA, "Monthly Power Plant Report" (FPC Form 4), "Monthly Fuel Consumption Report—Manufacturing Plants" (Form EIA-3), "Coke and Coal Chemicals—Monthly/Annual" (Form EIA-5/5A), "Bituminous Coal and Lignite—Quarterly Distribution Report" (Form EIA-6) and "Monthly Coal Report, Retail Dealers and Upper Lakes Docks" (Form EIA-2).
- October 1977 forward: Imports/Exports: Bureau of the Census, Monthly Reports IM 145 (Imports) and EM 552 (Exports).

Part 7 Electric Utilities

Electric Utilities

May 1980 production of electricity by utilities was 175.7 billion kilowatt-hours, 1.3 percent below the May 1979 production level. Natural gas-fired production totaled 26.6 billion kilowatt-hours and nuclear production totaled 18.4 billion kilowatt-hours. These figures reflect increases of 1.7 and 22.4 percent, respectively, above the May 1979 output levels. Coal-fired production totaled 84.9 billion kilowatt-hours, petroleum-fired production totaled 16.6 billion kilowatt-hours, and hydroelectric production totaled 28.9 billion kilowatt-hours, 1.5, 22.9 and 0.3 percent, respectively, below the May 1979 levels.

Electric utility petroleum consumption during May 1980 was 27.9 million barrels, a 25.2 percent drop from the May 1979 level. Coal consumption for May 1980 was 41.5 million tons, 0.2 percent below the May 1979 rate. During May 1980, consumption of natural gas by electric utilities was 281.9 billion cubic feet, 1.6 percent below the May 1979 consumption level.

On May 31, 1980, utility stocks of anthracite, bituminous and lignite totaled 174.0 million tons. Stockpiles were 30.1 percent above the levels of May 1979.

Petroleum stocks (excluding petroleum coke) on May 31, 1980, totaled 142.3 million barrels, 15.7 percent above the levels for the same month of 1979.

Electric Utilities

Net Electricity Production By Primary Energy Source

		Coal[1]	Petroleum[2]	Natural Gas	Nuclear	Hydro	Other[3]	Total
				Million kilowatt-hours				
1973	**TOTAL**	**847,651**	**314,343**	**340,858**	**83,479**	**272,083**	**2,294**	**1,860,710**
1974	**TOTAL**	**828,433**	**300,931**	**320,065**	**113,976**	**301,032**	**2,703**	**1,867,140**
1975	**TOTAL**	**852,786**	**289,095**	**299,778**	**172,505**	**300,047**	**3,437**	**1,917,649**
1976	**TOTAL**	**944,391**	**319,988**	**294,624**	**191,104**	**283,707**	**3,883**	**2,037,696**
1977	**TOTAL**	**985,219**	**358,179**	**305,505**	**250,883**	**220,475**	**4,063**	**2,124,323**
1978	January	85,006	39,264	22,310	25,833	25,066	357	197,835
	February	70,570	38,213	20,370	21,833	22,211	309	173,504
	March	66,623	36,958	22,269	22,449	24,630	264	173,193
	April	70,327	24,978	21,339	17,580	25,306	208	159,738
	May	76,432	24,368	25,076	20,416	28,757	187	175,236
	June	84,033	26,130	30,618	22,185	25,121	225	188,312
	July	89,606	29,117	34,248	25,007	24,453	250	202,682
	August	93,430	32,302	32,583	25,599	22,185	318	206,418
	September	87,041	26,640	28,206	22,189	21,177	318	185,572
	October	82,083	25,753	25,233	22,997	19,479	257	175,802
	November	81,727	27,310	22,000	24,901	19,953	282	176,172
	December	88,863	34,027	21,138	25,415	22,082	341	191,865
	TOTAL	**975,742**	**365,060**	**305,391**	**276,403**	**280,419**	**3,315**	**2,206,331**
1979	January	94,986	39,474	22,093	27,792	25,021	326	209,692
	February	84,748	32,274	21,844	25,911	21,275	285	186,337
	March	85,220	22,076	24,916	24,335	25,921	382	182,849
	April	80,450	20,599	24,763	18,418	25,389	342	169,962
	May	86,149	21,470	26,135	15,025	28,939	350	178,069
	June	90,817	24,367	30,107	16,065	24,979	347	186,682
	July	97,879	25,750	34,676	20,825	22,761	364	202,255
	August	97,910	26,123	34,949	24,204	21,260	405	204,850
	September	85,664	22,509	31,442	21,804	18,978	354	180,751
	October	87,528	20,279	30,419	20,934	20,167	389	179,716
	November	87,456	23,380	24,661	19,255	22,367	387	177,506
	December	96,230	25,223	23,481	20,586	22,727	456	188,703
	TOTAL	**1,075,037**	**303,525**	**329,485**	**255,155**	**279,783**	**4,387**	**2,247,372**
1980	January	103,147	25,099	26,350	19,746	25,297	388	200,027
	February	98,148	24,784	24,748	19,277	21,378	373	188,708
	March	95,387	20,419	26,964	20,039	24,332	401	187,542
	April	83,534	16,064	24,015	18,794	25,745	410	168,562
	May	84,882	16,560	26,573	18,385	28,866	468	175,733
	TOTAL (Year-to-date)	**465,098**	**102,926**	**128,649**	**96,240**	**125,618**	**2,040**	**920,572**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Includes Bituminous, Lignite, and Anthracite.
[2]Includes fuel oil No. 2, No. 4, No. 5, No. 6, crude oil, kerosene, and petroleum coke.
[3]Includes geothermal, wood and waste.
Source: • Federal Power Commission Form 4, "Monthly Power Plant Report".

Electric Utilities

Electricity Sales[1]

		Residential	Commercial	Industrial	Other[2]	Total
				Million kilowatt-hours		
1973	**TOTAL**	**579,231**	**388,266**	**686,085**	**59,326**	**1,712,909**
1974	**TOTAL**	**578,184**	**384,826**	**684,875**	**58,039**	**1,705,924**
1975	**TOTAL**	**584,712**	**401,674**	**675,271**	**68,153**	**1,729,810**
1976	**TOTAL**	**602,863**	**423,639**	**739,965**	**69,557**	**1,836,024**
1977	**TOTAL**	**641,134**	**444,931**	**772,291**	**70,489**	**1,928,845**
1978	January	65,455	38,125	64,765	6,581	174,926
	February	64,140	37,465	60,823	6,274	168,703
	March	58,391	36,282	61,506	6,032	162,212
	April	47,118	33,625	63,103	5,355	149,201
	May	43,748	33,995	66,618	5,586	149,947
	June	50,511	39,080	68,563	5,826	163,981
	July	61,327	42,839	67,081	6,359	177,607
	August	63,434	43,694	69,402	6,136	182,666
	September	61,584	42,935	70,067	6,428	181,015
	October	51,108	38,354	71,259	6,001	166,722
	November	47,220	35,864	69,702	6,340	159,125
	December	57,058	37,650	67,767	6,234	168,709
	TOTAL	**671,094**	**459,908**	**800,656**	**73,152**	**2,004,814**
1979	January	69,939	40,362	68,324	6,762	185,387
	February	67,842	39,865	67,632	6,176	181,515
	March	58,806	37,938	68,770	6,002	171,515
	April	49,647	35,731	68,777	5,589	159,744
	May	45,378	36,259	70,421	5,630	157,688
	June	49,109	39,474	70,968	5,705	165,256
	July	58,054	42,528	69,938	5,975	176,495
	August	64,168	43,915	71,058	6,377	185,519
	September	59,251	42,416	70,075	6,479	178,220
	October	49,430	38,750	71,444	6,098	165,721
	November	49,480	36,656	69,787	6,173	162,096
	December	58,437	37,952	67,283	6,142	169,815
	TOTAL	**679,541**	**471,846**	**834,477**	**73,108**	**2,058,971**
1980	January	65,852	39,516	67,634	6,658	179,660
	February	64,503	39,600	68,384	6,171	178,658
	TOTAL (Year-to-date)	**130,355**	**79,116**	**136,018**	**12,829**	**358,318**

Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Electricity sales to all ultimate consumers.
[2]Includes street lighting and transportation uses.
Note: Data are not available for March 1980. The Federal Power Commission Form 5 has been redesigned and redesignated as Federal Energy Regulatory Commission Form 5. The computer system, redesigned to present electricity sales information in a manner consistent with past practices, is not yet completed.
Source: • Federal Power Commission Form 5, "Monthly Statement of Electric Operating Revenue and Income."

Electric Utilities

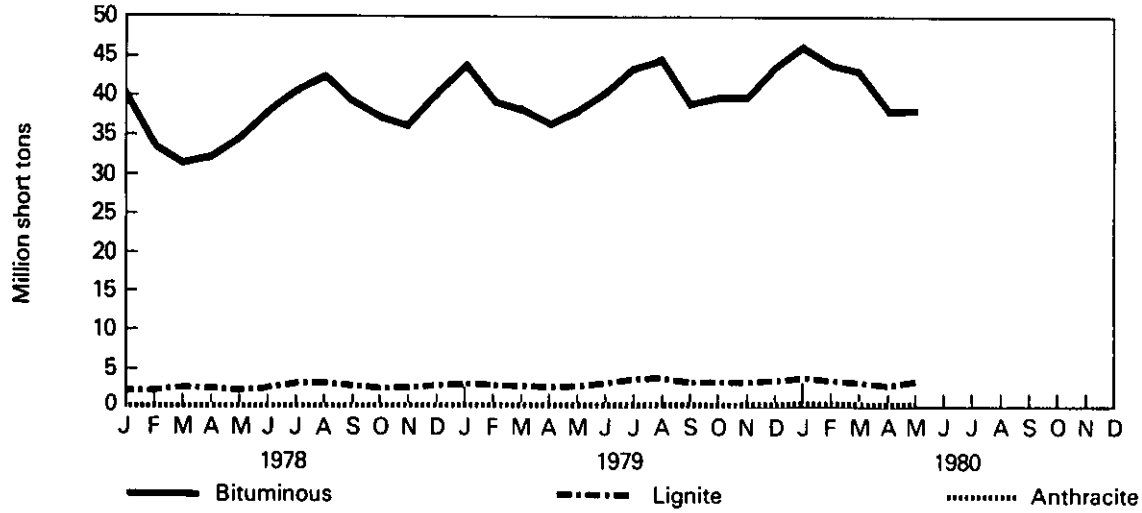
Primary Energy Consumed to Produce Electricity

		Coal				Petroleum			Natural Gas
		Anthracite	Bituminous	Lignite	Total	Steam	Gas Turb./ Int. Comb.	Coke	
			Thousand short tons			Thousand barrels		Thousand short tons	Million cubic feet
1973	**TOTAL**	**1,443**	**376,975**	**10,794**	**389,212**	**513,190**	**47,058**	**507**	**3,660,172**
1974	**TOTAL**	**1,498**	**378,643**	**11,670**	**391,811**	**483,146**	**53,128**	**625**	**3,443,428**
1975	**TOTAL**	**1,480**	**388,523**	**15,960**	**405,962**	**467,221**	**38,907**	**70**	**3,157,669**
1976	**TOTAL**	**1,350**	**425,205**	**21,817**	**448,371**	**514,077**	**41,843**	**68**	**3,080,868**
1977	**TOTAL**	**1,425**	**451,051**	**24,650**	**477,126**	**574,869**	**48,837**	**98**	**3,191,200**
1978	January	101	40,506	2,101	42,709	61,271	8,257	10	229,188
	February	88	33,556	2,189	35,833	59,636	7,709	55	211,170
	March	100	31,276	2,629	34,005	58,724	5,476	64	232,199
	April	83	32,129	2,406	34,618	40,877	2,152	39	223,188
	May	73	34,902	2,224	37,199	40,244	2,294	28	260,802
	June	91	38,250	2,453	40,794	42,729	3,570	31	321,423
	July	85	40,906	3,127	44,118	47,546	3,570	32	362,199
	August	100	42,643	3,297	46,040	52,637	3,564	31	340,299
	September	86	39,835	2,725	42,646	43,114	3,301	28	296,982
	October	82	37,197	2,574	39,853	42,253	1,824	25	262,880
	November	88	36,982	2,681	39,751	44,516	2,161	27	228,027
	December	87	40,581	3,001	43,669	54,771	3,643	30	220,005
	TOTAL	**1,064**	**448,763**	**31,407**	**481,235**	**588,319**	**47,520**	**398**	**3,188,363**
1979	January	89	43,791	3,021	46,902	62,226	6,244	33	228,479
	February	75	39,010	2,806	41,891	51,655	4,959	32	226,896
	March	65	38,865	2,852	41,781	36,371	1,872	22	260,351
	April	66	36,362	2,551	38,979	33,800	1,682	15	260,974
	May	106	38,669	2,757	41,532	35,285	2,053	23	277,318
	June	103	40,882	3,023	44,008	39,258	2,314	25	320,196
	July	96	44,391	3,730	48,216	41,895	2,413	23	369,318
	August	97	44,553	3,899	48,549	42,478	2,416	23	375,370
	September	86	38,920	3,162	42,167	36,768	1,747	17	338,308
	October	75	39,634	3,261	42,970	33,445	1,132	16	323,082
	November	92	39,571	3,317	42,980	37,822	1,954	18	260,982
	December	96	43,480	3,499	47,075	41,601	1,906	20	249,249
	TOTAL	**1,046**	**488,129**	**37,876**	**527,051**	**492,606**	**30,691**	**268**	**3,490,523**
1980	January	74	46,516	3,779	50,369	41,107	2,197	54	276,784
	February	72	43,969	3,471	47,513	40,238	1,920	21	263,709
	March	83	43,244	3,357	46,685	33,413	1,397	13	283,845
	April	71	37,971	2,651	40,692	27,030	673	7	256,606
	May	86	38,116	3,262	41,464	27,090	841	11	281,862
	TOTAL (Year-to-date)	**387**	**209,816**	**16,520**	**226,722**	**168,879**	**7,028**	**107**	**1,362,805**

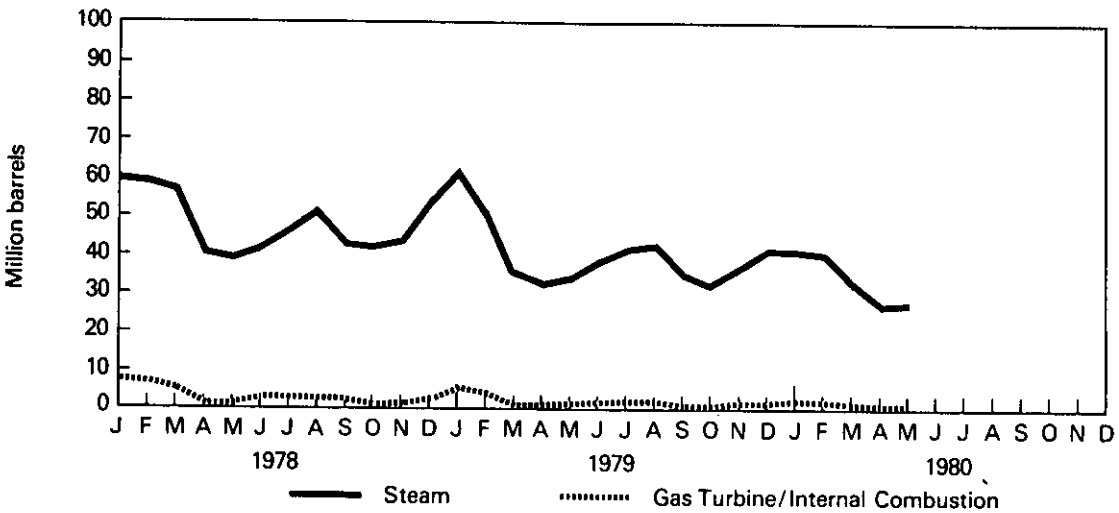
Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
Source: • Federal Power Commission Form 4, "Monthly Power Plant Report."

Electric Utilities

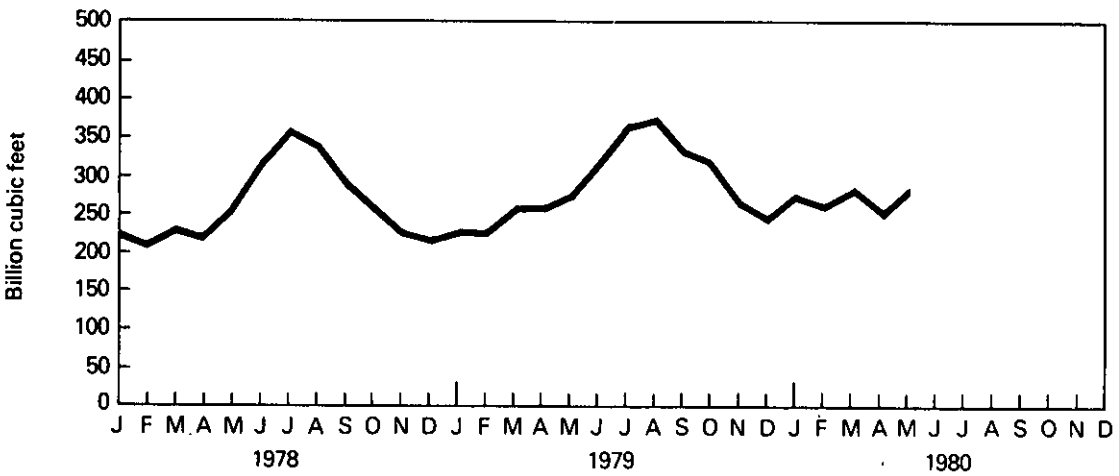
Coal Consumption



Petroleum Consumption



Natural Gas Consumption



Electric Utilities

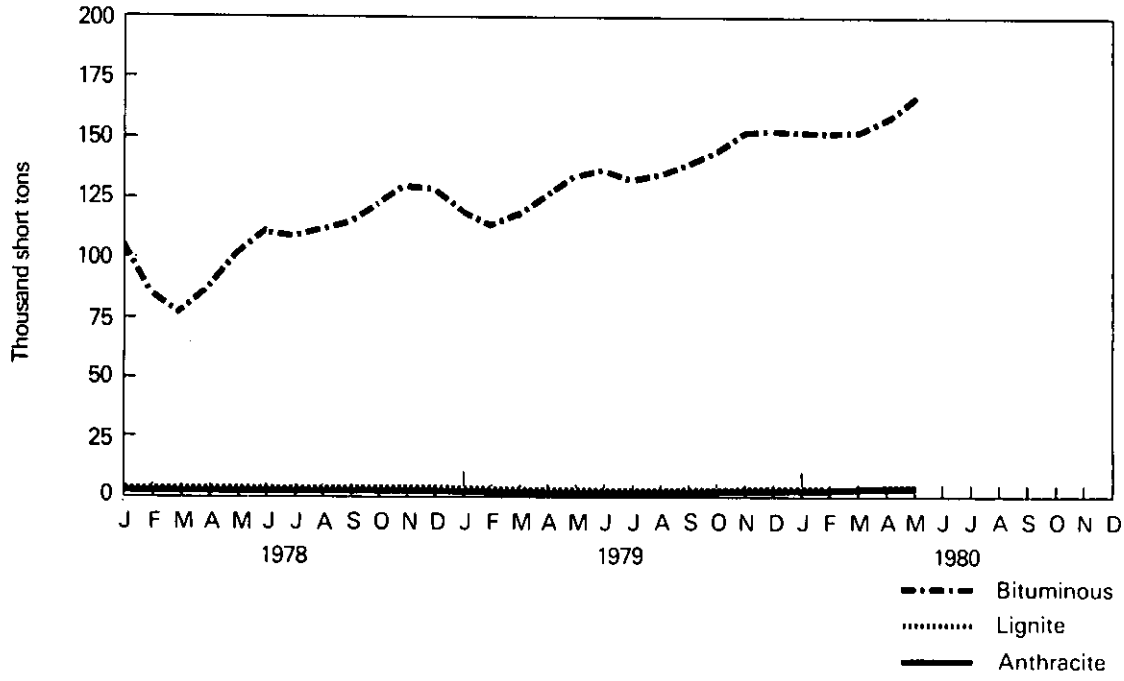
End-of-Month Coal and Petroleum Stocks

		Coal				Petroleum		
		Anthracite	Bituminous	Lignite	Total	Steam	Gas Turb./ Int. Comb.	Coke
		Thousand short tons				Thousand barrels		Thousand short tons
1973		**‡1,066**	**‡84,941**	**‡961**	**‡86,967**	**‡79,121**	**‡10,095**	**‡312**
1974		**‡930**	**‡81,712**	**‡867**	**‡83,509**	**‡97,718**	**‡15,199**	**‡35**
1975		**‡982**	**‡107,927**	**‡1,815**	**‡110,724**	**‡108,825**	**‡16,432**	**‡31**
1976		**‡1,000**	**‡114,130**	**‡2,306**	**‡117,436**	**‡106,993**	**‡14,703**	**‡32**
1977		**‡2,321**	**‡128,210**	**‡2,688**	**‡133,219**	**‡124,750**	**‡19,281**	**‡44**
1978	January	2,280	100,550	2,418	105,248	114,175	16,240	40
	February	2,112	80,094	2,349	84,555	111,158	17,044	197
	March	2,091	72,369	2,556	77,016	112,328	17,270	182
	April	2,083	83,285	2,612	87,980	116,086	17,386	164
	May	2,145	95,701	2,782	100,628	118,941	16,973	167
	June	2,215	105,613	2,923	110,752	120,187	17,581	167
	July	2,241	104,609	2,849	109,699	121,510	17,559	176
	August	2,208	106,918	3,140	112,266	119,359	17,380	173
	September	2,224	109,751	3,187	115,162	121,116	17,538	181
	October	2,220	115,946	3,431	121,597	117,682	17,355	189
	November	2,199	124,061	3,118	129,379	112,220	17,231	199
	December	2,178	123,020	3,027	128,225	102,402	16,386	198
1979	January	2,154	114,980	2,814	119,948	89,583	15,635	181
	February	2,136	109,532	2,726	114,394	82,078	15,541	166
	March	2,170	113,669	2,704	118,542	96,033	16,386	170
	April	2,220	120,876	2,680	125,776	99,500	16,835	170
	May	2,231	128,962	2,600	133,793	106,017	16,974	159
	June	2,233	131,898	2,495	136,627	104,513	17,180	150
	July	2,290	126,328	2,478	131,095	104,170	17,578	160
	August	2,328	128,760	3,170	134,257	103,965	17,910	163
	September	2,385	133,605	3,139	139,129	104,857	18,733	164
	October	2,452	144,035	3,462	149,949	109,590	19,410	170
	November	2,496	151,848	3,393	157,737	111,072	19,714	170
	December	3,274	152,981	3,459	159,714	111,121	20,301	183
1980	January	3,371	151,881	3,455	158,707	114,007	19,607	175
	February	3,451	150,147	3,522	157,120	111,362	19,050	168
	March	3,488	151,022	3,116	157,625	116,291	18,909	154
	April	3,533	157,148	3,843	164,524	118,803	19,176	103
	May	3,725	166,339	3,980	174,044	122,832	19,463	69

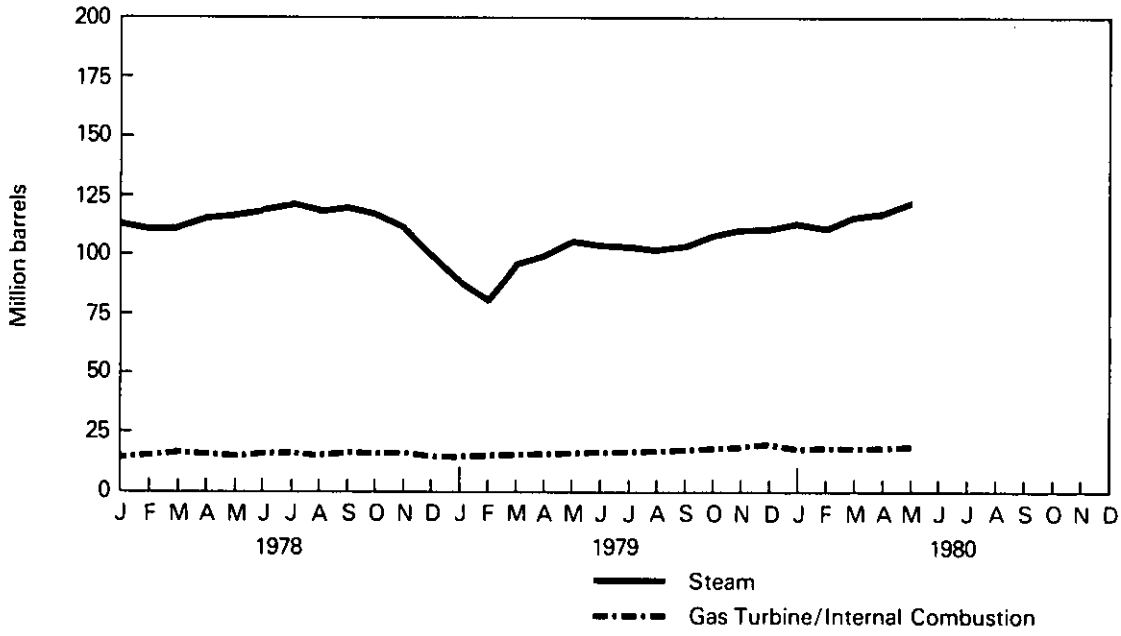
Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
‡Total as of December 31.
Source: • Federal Power Commission Form 4, "Monthly Power Plant Report."

Electric Utilities

Coal Stocks (Bituminous, Lignite, and Anthracite)



Petroleum Stocks



Part 8 Nuclear Power

Nuclear Power

During May 1980, the 74 operational reactor units generated 18.4 billion net kilowatt-hours of electricity, representing a decrease of 2.2 percent and an increase of 22.4 percent respectively, from the April 1980 and May 1979 levels.

In April 1980, North Anna Unit Number 2, owned by the Virginia Electric Power Company, and Salem Unit Number 2, owned jointly by Public Service Electric & Gas Company; Philadelphia Electric Company; Delmarva Power & Light Company; and Atlantic City Electric Company received limited licenses from the Nuclear Regulatory Commission (NRC) to begin low-power testing. This brings to 3 the number of units licensed since the NRC ended its moratorium on the licensing of new reactor units. This moratorium was imposed following the accident at Three Mile Island in March 1979.

As of May 31 the total number of reactor units planned or in operation was 176, unchanged from the April level, but 19 below the May 1979 level. This scaling back by utilities can be attributed to the increasing time and cost required to bring a nuclear unit on line and decreases in the projected rate of growth of electrical consumption.

Nuclear Power

Domestic Nuclear Powerplant Operations

		Maximum Dependable Capacity[1] All Plants[2]	Capacity Factor[3]	Electricity Generation[4]	Nuclear Portion of Domestic Electricity Generation
		Million net kilowatts	Percent	Million net kilowatt-hours	Percent
1973	**AVERAGE**	**13.850**	**63.2**	**83,479**	**4.5**
1974	**AVERAGE**	**29.921**	**43.5**	**113,976**	**6.1**
1975	**AVERAGE**	**35.671**	**55.2**	**172,505**	**9.0**
1976	**AVERAGE**	**40.642**	**53.5**	**191,104**	**9.4**
1977	**AVERAGE**	**45.554**	**62.9**	**250,883**	**11.8**
1978	January	47.167	73.6	25,833	13.1
	February	48.080	67.6	21,833	12.6
	March	48.062	62.8	22,449	13.0
	April	48.926	50.0	17,580	11.0
	May	48.924	56.1	20,416	11.6
	June	49.714	62.0	22,185	11.8
	July	49.719	67.6	25,007	12.3
	August	49.815	69.1	25,599	12.4
	September	49.815	61.9	22,189	12.0
	October	50.776	60.9	22,997	13.1
	November	50.776	68.1	24,901	14.1
	December	50.774	67.3	25,415	13.2
	AVERAGE	**49.385**	**63.9**	**276,403**	**12.5**
1979	January	50.771	73.6	27,792	13.3
	February	50.720	76.0	25,911	13.9
	March	50.720	64.5	24,335	13.3
	April	50.705	50.5	18,418	10.8
	May	50.705	39.8	15,025	8.4
	June	50.705	44.0	16,065	8.6
	July	50.759	55.1	20,825	10.3
	August	50.732	64.1	24,204	11.8
	September	50.781	59.6	21,804	12.1
	October	50.814	55.7	20,934	11.6
	November	49.917	53.6	19,255	10.8
	December	49.937	55.4	20,586	11.0
	AVERAGE	**50.604**	**57.6**	**255,155**	**11.4**
1980	January	49.945	53.1	19,746	9.9
	February	51.055	54.3	19,277	10.2
	March	51.031	52.8	20,039	10.7
	April	53.040	49.3	18,794	11.1
	May	53.040	46.6	18,385	10.5
	AVERAGE	**51.620**	**51.2**	**96,240**	**10.5**

Geographic coverage: the 50 United States and District of Columbia.
[1]See Explanatory Note 11 and Definitions.
[2]Includes all units authorized to generate commercial electricity, including units in start-up testing (see definitions) and those owned by the Government.
[3]Average percentage of Maximum Dependable Capacity utilized yearly or monthly.
[4]Annual figures for 1973–1979 and monthly figures for 1978–1980 represent totals rather than averages.
Sources: • Capacity data for units in commercial operation or start-up testing—Nuclear Regulatory Commission.
• Nuclear Regulatory Commission Report NUREG 0020, "Operating Units Status Report."
• Federal Power Commission Form 4, "Monthly Power Plant Report."

Nuclear Power

Status of Nuclear Reactor Units[1]

		In Operation or Start-up Testing[2]	Construction Permits Granted	Construction Permits Pending	Reactor Units Ordered	Reactor Units Announced	Total Reactor Units	Total Design Capacity (Million Gross Kilowatts)
1973		**40**	**51**	**58**	**48**	**20**	**217**	**212**
1974		**53**	**58**	**80**	**28**	**16**	**235**	**234**
1975		**56**	**69**	**73**	**19**	**19**	**236**	**236**
1976		**62**	**72**	**66**	**16**	**19**	**235**	**236**
1977		**67**	**80**	**52**	**13**	**9**	**221**	**220**
1978	January	68	86	44	13	9	220	219
	February	69	86	43	13	9	220	219
	March	69	86	45	11	9	220	219
	April	69	90	41	11	5	216	214
	May	69	90	39	10	6	214	212
	June	70	89	39	9	7	214	212
	July	70	89	37	10	7	213	211
	August	70	89	37	10	6	212	210
	September	71	88	37	9	6	211	209
	October	71	88	37	9	6	211	209
	November	71	90	34	9	6	210	208
	December	71	90	32	9	4	206	204
1979	January	71	92	30	5	1	199	195
	February	71	92	28	5	1	197	193
	March	71	92	28	5	1	197	193
	April	71	92	27	5	0	195	190
	May	71	92	27	5	0	195	190
	June	71	92	27	5	0	195	190
	July	71	91	25	5	0	192	187
	August	71	91	25	5	0	192	187
	September	71	91	25	3	0	190	185
	October	71	91	25	3	0	190	185
	November	71	91	23	3	0	188	182
	December	71	91	21	3	0	186	180
1980	January	71	90	17	3	0	181	174
	February	72	89	16	3	0	180	173
	March	72	87	14	3	0	176	168
	April	74	85	14	3	0	176	168
	May	74	85	14	3	0	176	168

Geographic coverage: the 50 United States and District of Columbia.
[1]Monthly data are recorded the last day of the month. Annual data are recorded as of December 31 of each year.
[2]Includes Humboldt Bay shut-down for seismic modifications, and Three Mile Island 2 which was shut-down due to an accident in March of 1979. Also includes two dual-purpose Department of Energy owned reactors, both operating. Does not include the Indian Point reactor which is in indefinite shut-down status.
Sources: • Compiled by the Energy Information Administration from various sources, but primarily from the Nuclear Regulatory Commission (NRC), Report NUREG 0380, "Program Summary Report."

Price

Crude Oil

The average price of domestic crude oil purchased at the wellhead was $20.20 per barrel in April 1980. The Alaskan North Slope price increased to $14.07 per barrel. Actual stripper price of $36.40 per barrel was a 0.4 percent increase over the March 1980 price. The Naval Petroleum Reserve crude oil price of $33.81 per barrel decreased slightly (2.5 percent) below the March 1980 level. The upper tier price of $13.98 per barrel decreased slightly by 0.1 percent below the previous month's figure, and the lower tier price of $6.36 per barrel increased 0.2 percent above the March 1980 price.

During May 1980, the composite refiner acquisition cost of crude oil was $27.85 per barrel, $0.76 per barrel (2.8 percent) above the previous month's price. The imported price increased $0.79 per barrel from the April 1980 level to $34.33 per barrel in May. This price was 2.4 percent above the previous month's level and 80.7 percent above the May 1979 level. The domestic price was $23.63, an increase of $0.74 per barrel (3.2 percent) above the April average.

Residual Fuel Oil

The average price, excluding taxes, for No. 6 residual fuel oil sold to utilities, industry, and other ultimate consumers in April 1980 was $22.87 per barrel, $2.46 below the previous month's price (9.7 percent) and 37.7 percent over the April 1979 average. The average price, excluding taxes, for No. 6 residual fuel oil sold to resellers, bulk plants, jobbers, and other wholesale accounts was $19.09 per barrel, $2.02 below (9.6 percent) the March 1980 average and a 23.1 percent increase over the April 1979 average.

Heating Oil

The national average price of heating oil sold to residential customers declined 0.3 cent in May 1980 to 97.1 cents per gallon. This was a 0.3 percent decrease under the selling price in April 1980 and a 51.2 percent increase over the May 1979 price. The average residential distributor margin in May was 16.4 cents per gallon, 35.5 percent above the margin of May 1979. Refiners' national average selling price to resellers and retailers was 79.6 cents per gallon, 49.6 percent above the May 1979 average.

Aviation Fuel

The average price, excluding taxes, for kerosene-type jet fuel sold to commercial airlines, Department of Defense, and other ultimate consumers in April 1980 was 87.4 cents per gallon, or 1.1 cents (1.3 percent) over the previous month's average and a 92.5 percent increase over the April 1979 average.

Motor Gasoline

The national average retail price for all grades and all types of motor gasoline was 122.5 cents per gallon in May 1980. Leaded regular gasoline at full serve stations sold for an average of 122.5 cents per gallon in May, 0.6 cent higher (0.5 percent) than the price in April. The price for unleaded regular gasoline at full serve stations was 127.1 cents per gallon in May, 0.4 cent higher (0.3 percent) than in April. The differential between unleaded regular and leaded regular at full serve pumps was 4.6 cents per gallon.

Liquefied Petroleum Gases

The average wholesale price for propane during April 1980, excluding taxes, was 41.8 cents per gallon, 0.8 cent above the previous month's level, or 2.0 percent, and 97.2 percent above the April 1979 level.

In April 1980, the average wholesale price for butane, excluding taxes, was 68.4 cents per gallon, 1.6 cents below the previous month's revised price, or 2.3 percent. This was 93.2 percent above the April 1979 average.

Price

Petroleum Price Summary

		Actual Domestic Average Wellhead Price[1]	Refiner Acquisition Cost of Crude Oil[2]			No. 6 Residual Oil Price Average[3]	
			Domestic	Imported	Composite	Wholesale[4]	Retail[4]
		Dollars per barrel					
1976	**AVERAGE**	**8.19**	**8.84**	**13.48**	**10.89**	**10.72**	**11.49**
1977	**AVERAGE**	**8.57**	**9.55**	**14.53**	**11.96**	**11.96**	**13.23**
1978	January	8.68	10.14	14.52	12.13	11.33	12.79
	February	8.84	10.25	14.41	12.19	11.25	12.53
	March	8.80	10.46	14.57	12.23	11.36	12.63
	April	8.82	10.55	14.40	12.20	11.57	12.87
	May	8.81	10.60	14.51	12.35	11.70	12.79
	June	9.05	10.72	14.54	12.48	11.41	12.50
	July	8.96	10.58	14.49	12.45	10.86	12.21
	August	9.05	10.65	14.46	12.46	10.70	12.34
	September	9.15	10.65	14.53	12.57	11.26	12.43
	October	9.17	10.78	14.63	12.62	11.76	13.01
	November	9.20	10.87	14.74	12.76	12.36	13.34
	December	9.47	11.00	14.94	12.93	12.57	13.75
	AVERAGE	**9.00**	**10.61**	**14.57**	**12.46**	**11.51**	**12.75**
1979	January	9.46	11.02	15.50	13.11	12.78	14.13
	February	9.69	11.34	15.88	13.42	13.72	14.68
	March	9.83	11.45	16.41	13.70	14.82	15.95
	April	10.33	12.06	17.58	14.52	15.51	16.61
	May	10.71	12.41	19.00	15.40	15.71	17.18
	June	11.70	13.24	21.03	17.00	17.81	17.97
	July	13.39	14.61	23.09	18.58	19.18	19.89
	August	14.00	15.73	23.98	19.75	19.00	20.33
	September	14.57	16.05	25.06	20.14	19.62	20.90
	October	15.11	16.93	25.05	20.68	20.88	21.59
	November	15.52	17.65	27.02	22.04	22.00	22.84
	December	17.03	18.84	28.91	23.63	23.55	24.44
	AVERAGE	**12.64**	**14.27**	**21.67**	**17.72**	**17.66**	**18.67**
1980	January	17.86	19.78	30.75	24.81	24.41	26.21
	February	18.81	21.22	32.40	26.11	23.34	26.48
	March	R19.34	22.07	33.42	26.88	R21.11	R25.33
	April	20.20	22.89	33.54	27.09	†19.09	†22.87
	May	NA	23.63	34.33	27.85	NA	NA
	AVERAGE	**NA**	**21.94**	**32.80**	**26.52**	**NA**	**NA**

Geographic coverage: Actual domestic average wellhead prices and No. 6 residual oil prices— the 50 United States and District of Columbia. Refiner acquisition cost of crude oil— the 50 United States, District of Columbia, Puerto Rico, Guam, and the Virgin Islands.
[1]See Explanatory Note 12.
[2]See Explanatory Note 13. Crude oil costs and volumes reported on the Economic Regulatory Administration (ERA) Form 49 exclude unfinished oils but include Strategic Petroleum Reserve (SPR). Crude oil costs and volumes reported on the FEA Form P110-M-1 include unfinished oils but exclude SPR. Imported averages derived from ERA Form 49 exclude crude oil purchased for Strategic Petroleum Reserve (SPR), whereas, the composite averages derived from the ERA Form 49 include SPR.
[3]Wholesale refers to the price of residual fuel sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and other residual dealers. Retail refers to the price at which residual fuel oil is sold to ultimate consumers such as utility, industrial, commercial and residential accounts.
[4]Excludes tax.
†Preliminary data. R=Revised data. NA=Not available.
Sources: •Actual domestic average, January 1976: FEA Form 90, "Crude Petroleum Production Monthly Report," ERA Form 182, "Domestic Crude Oil First Purchase Report."
•Refiner acquisition cost, January 1976: Form FEO 96, "Monthly Cost Allocation Report." February 1976 through June 1978: FEA Form P110-M-1, "Refiners' Monthly Cost Allocation Report." July 1978 forward: ERA Form 49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report."
•No.6 residual oil price, FEA Form P302-M-1, "Petroleum Industry Monthly Report for Product Prices."

Price

Petroleum Price Summary (continued)

		No. 2 Diesel Price Average[1]		No. 2 Heating Oil Price Average		Gasoline Price Average All Grades[2]	Propane Price Average[3]	Butane Price Average[3]
		Wholesale[4]	Retail[4]	Wholesale	Retail	Retail	Wholesale[4]	Wholesale[4]
		Cents per gallon						
1976	**AVERAGE**	**31.9**	**34.7**	**32.6**	**40.6**	**NA**	**20.6**	**21.9**
1977	**AVERAGE**	**36.1**	**39.3**	**36.9**	**46.0**	**NA**	**25.0**	**25.4**
1978	January	36.6	39.5	38.1	48.5	63.1	27.0	25.9
	February	36.6	39.8	37.8	48.6	63.0	26.5	25.1
	March	36.7	39.7	37.6	48.6	63.0	25.6	24.9
	April	36.5	39.6	37.6	48.6	63.2	24.4	23.9
	May	36.6	39.9	37.6	48.3	64.0	23.7	22.8
	June	36.7	40.1	37.7	48.2	64.8	23.3	22.9
	July	36.4	40.0	37.7	48.2	66.1	23.0	22.1
	August	36.6	40.0	37.9	48.2	66.8	22.7	21.8
	September	37.1	39.8	38.6	49.0	67.2	22.6	21.8
	October	37.7	40.9	39.6	50.2	67.2	22.5	20.9
	November	38.6	41.7	40.5	51.5	68.2	22.1	22.0
	December	39.1	42.0	41.3	52.6	68.9	22.1	22.7
	AVERAGE	**37.1**	**40.2**	**38.7**	**49.4**	**65.5**	**24.0**	**23.0**
1979	January	39.7	43.0	42.1	53.7	69.8	22.4	24.9
	February	41.8	46.1	44.5	56.3	71.0	21.8	28.5
	March	44.5	47.9	47.0	58.8	74.0	21.2	32.5
	April	47.7	50.6	49.3	61.1	78.4	22.0	35.4
	May	53.4	56.1	52.6	64.2	82.9	24.2	39.5
	June	58.7	65.0	56.9	69.1	87.9	27.9	46.9
	July	62.4	68.9	61.1	73.8	92.6	29.3	51.1
	August	66.0	72.3	64.6	78.4	96.7	30.8	48.0
	September	69.0	71.8	67.8	81.0	99.4	33.3	51.9
	October	71.1	74.8	68.1	82.3	100.5	35.2	56.1
	November	70.3	72.1	69.0	83.7	101.8	37.6	57.0
	December	73.0	80.7	70.8	85.8	104.6	40.4	65.8
	AVERAGE	**58.2**	**62.4**	**53.0**	**65.6**	**89.9**	**29.5**	**45.8**
1980	January	76.0	82.2	75.2	90.8	110.7	41.8	73.3
	February	78.3	85.0	79.0	95.3	118.3	42.7	70.1
	March	R79.8	87.8	80.4	97.1	121.5	41.0	R70.0
	April	†80.4	†87.9	81.0	R97.4	R122.1	†41.8	†68.4
	May	NA	NA	†81.2	†97.1	†122.5	NA	NA
	AVERAGE	**NA**	**NA**	**78.6**	**94.7**	**118.8**	**NA**	**NA**

Geographic coverage: the 50 United States and District of Columbia.
[1]Wholesale refers to the price of diesel fuel sold to other refiners and resellers, including branded jobbers, unbranded jobbers, and commercial accounts. Retail refers to the price at which company-owned and operated retail dealers sell to customers.
[2]"Averages for All Grades" excludes mini-serve for January 1978 through June 1978. Mini-serve is included from July 1978 forward. No. 2 diesel fuel is included in the "Averages for All Grades" beginning July 1979.
[3]Wholesale refers to the price at which refiners, resellers, retailers and gas plants sell to one another, including sales to agricultural and industrial accounts. Excludes butane/propane mixtures.
[4]Excludes tax.
†Preliminary data. R=Revised data. NA=Not available.
Sources: •No. 2 diesel price, FEA Form P302-M-1, "Petroleum Industry Monthly Report for Product Prices."
•No. 2 heating oil price, FEA Form P112-M-1/EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report."
•Gasoline price average, January 1976 through December 1977: Lundberg Survey, Inc. January 1978 through June 1978: EIA 8, "Retail Motor Fuels Service Station Survey." July 1978 forward: EIA 79, "Monthly Motor Gasoline Service Station Survey."
•Propane and Butane prices, FEA Form P302-M-1, "Petroleum Industry Monthly Report for Product Prices."

Price

Domestic Prices and Percentages of Crude Oil Purchased at the Wellhead[1]

		Incremental Tertiary[2]		Newly Discovered[2]		Marginal Property[2]		Heavy Crude[2]		Decontrolled Oil[2]		Tertiary Incentive[2]	
		Dollars per barrel											
		Price	Percent	Price	Percent	Price	Percent	Price	Percent	Price	Percent	Price	Percent
1976	AVERAGE												
1977	AVERAGE												
1978	January												
	February												
	March												
	April												
	May												
	June							Not Applicable					
	July												
	August												
	September												
	October												
	November												
	December												
	AVERAGE												
1979	January												
	February												
	March												
	April												
	May												
	June	11.98	0.05	22.97	0.61	13.16	0.81						
	July	15.09	0.02	26.60	1.12	13.28	1.13						
	August	16.14	0.15	26.63	1.66	13.37	1.33						
	September	17.89	0.06	30.38	2.38	13.67	3.08	16.77	2.82	12.54	NA	24.89	NA
	October	14.21	(0.01)	31.92	3.04	13.55	3.39	17.12	3.46	13.08	NA	21.07	NA
	November	26.17	NA	33.86	3.24	13.70	3.11	18.61	3.28	11.33	NA	NA	NA
	December	15.80	(0.03)	37.59	3.61	13.83	3.05	23.62	4.04	10.05	NA	NA	NA
1980	January	31.14	0.01	39.04	3.86	14.01	3.16	26.43	4.24	33.37	2.15	28.18	NA
	February	26.33	0.01	38.68	4.33	13.90	2.71	25.70	5.13	33.11	4.79	36.47	0.01
	March	29.82	0.01	38.97	4.76	14.07	2.52	R25.55	R5.15	R32.91	R7.42	39.00	0.04
	April†	34.94	0.04	38.61	5.18	14.12	2.99	25.57	4.95	33.03	9.86	37.53	0.12
	AVERAGE	**31.84**	**0.02**	**38.82**	**4.53**	**14.02**	**2.85**	**25.79**	**4.86**	**33.04**	**6.04**	**37.62**	**0.04**

Geographic coverage: the 50 United States and District of Columbia.
[1]See Explanatory Note 14.
[2]See Definitions.
†Preliminary data. R = Revised data. NA = Not available.
Note: Parentheses indicate negative adjustment to recertify production as heavy oil.
Source: • Economic Regulatory Administration Form 182, "Domestic Crude Oil First Purchase Report."

Price

Domestic Prices and Percentages of Crude Oil Purchased at the Wellhead[1] (continued)

		Lower Tier[2]		Upper Tier[2]		Actual Stripper[3]		Alaskan North Slope[4]		Naval Petroleum Reserve[5]		Imputed Domestic Average[6]	Actual Domestic Average[6]
		Dollars per barrel											
		Price	Percent	Price	Percent	Price	Percent	Price	Percent	Price	Percent	Price	Price
1976	**AVERAGE**	**5.13**	**54.4**	**11.71**	**31.5**	**12.16**	**14.1**	**NA**	**NA**	**NA**	**NA**	**8.06**	**8.19**
1977	**AVERAGE**	**5.19**	**45.92**	**11.22**	**36.11**	**13.59**	**13.32**	**6.35**	**4.14**	**12.34**	**0.51**	**8.27**	**8.57**
1978	January	5.28	41.73	11.78	34.19	13.89	12.69	5.30	10.17	12.38	1.19	8.34	8.68
	February	5.29	40.78	11.81	34.35	13.90	13.68	5.68	9.94	12.46	1.23	8.48	8.84
	March	5.34	39.24	11.87	34.06	13.97	13.98	5.00	11.76	12.60	0.92	8.41	8.80
	April	5.35	37.94	11.94	34.04	13.95	13.72	5.15	13.26	12.67	1.02	8.44	8.82
	May	5.38	38.16	11.98	34.03	13.93	13.76	4.87	13.05	12.70	0.97	8.43	8.81
	June	5.46	36.79	12.08	35.01	13.95	13.89	5.63	13.45	13.08	0.84	8.68	9.05
	July	5.46	37.61	12.16	34.39	13.95	13.55	5.26	13.46	13.07	0.97	8.62	8.96
	August	5.50	36.49	12.22	34.45	13.93	14.42	5.09	13.66	13.04	0.95	8.67	9.05
	September	5.55	35.92	12.35	34.64	13.96	14.44	5.12	13.79	13.17	1.18	8.78	9.15
	October	5.60	36.27	12.42	34.38	13.97	14.15	5.21	13.95	13.08	1.22	8.81	9.17
	November	5.65	36.22	12.53	34.56	13.94	14.02	5.12	14.08	13.00	1.09	8.85	9.20
	December	5.68	33.65	12.59	34.74	14.08	15.88	5.40	14.42	12.92	1.28	9.07	9.47
	AVERAGE	**5.48**	**37.54**	**12.15**	**34.41**	**13.95**	**14.03**	**5.22**	**12.96**	**12.85**	**1.08**	**8.63**	**9.00**
1979	January	5.75	35.51	12.66	34.25	14.55	14.14	5.79	14.88	13.10	1.20	9.04	9.46
	February	5.76	35.20	12.78	34.97	14.88	15.08	5.87	13.71	13.94	1.01	9.21	9.69
	March	5.82	34.59	12.84	34.56	14.88	14.95	6.66	14.58	13.97	1.29	9.37	9.83
	April	5.85	33.98	12.94	34.93	16.71	15.27	7.45	14.52	14.56	1.28	9.60	10.33
	May	5.91	33.55	13.02	34.77	17.53	15.62	8.47	14.71	15.85	1.32	9.86	10.71
	June	5.95	29.32	13.14	38.22	20.24	15.97	8.97	13.64	16.02	1.34	10.48	11.70
	July	5.98	26.96	13.25	37.49	24.76	16.01	13.35	15.86	20.13	1.38	11.31	13.39
	August	6.09	26.03	13.33	36.72	25.71	16.93	14.14	15.82	20.77	1.33	11.88	14.00
	September	6.09	23.52	13.53	33.89	27.09	16.55	13.09	16.08	20.85	1.57	12.21	14.57
	October	6.12	23.46	13.56	32.58	29.42	16.20	13.12	16.27	21.01	1.57	12.43	15.11
	November	6.09	23.11	13.68	32.76	30.64	15.35	13.48	17.49	26.48	1.61	12.80	15.52
	December	6.21	22.31	13.76	32.52	34.99	16.34	13.60	16.51	29.04	1.60	13.44	17.03
	AVERAGE	**5.95**	**28.91**	**13.20**	**34.79**	**22.93**	**15.71**	**10.57**	**15.36**	**19.40**	**1.38**	**10.98**	**12.64**
1980	January	6.24	21.19	13.86	31.12	36.02	15.61	13.77	17.06	28.94	1.54	14.27	17.86
	February	6.37	20.52	14.03	29.45	36.14	15.82	13.77	15.73	34.96	1.44	15.18	18.81
	March	6.35	R19.83	13.99	R28.22	R36.26	15.18	13.77	R15.30	34.67	R1.55	15.85	R19.34
	April†	6.36	18.64	13.98	26.08	36.40	15.78	14.07	14.72	33.81	1.61	16.55	20.20
	AVERAGE	**6.33**	**20.05**	**13.96**	**28.73**	**36.21**	**15.58**	**13.84**	**15.71**	**33.05**	**1.53**	**15.46**	**19.04**

Geographic coverage: the 50 United States and District of Columbia.
[1]See Explanatory Note 14.
[2]See Definitions.
[3]Stripper oil was exempt from price controls beginning September 1, 1976. From February through August 1976 stripper oil was subject to upper tier price ceilings. Annual average is for 12 months (January through December 1976).
[4]Alaskan North Slope (ANS) crude oil prices are treated as Upper Tier for determining the applicable wellhead ceiling prices. ANS is included in both the Actual Domestic Average and the Imputed Domestic Average price determinations.
[5]The Naval Petroleum Reserves (NPR) are exempt from pricing regulations but have been reported here as Upper Tier prior to July 1977. NPR is included in both the Actual Domestic Average and the Imputed Domestic Average price determinations.
[6]See Explanatory Note 12.
†Preliminiary data. R=Revised data. NA=Not available.
Sources: • January 1976: FEA Form 90, "Crude Petroleum Production Monthly Report."
• Economic Regulatory Administration Form 182, "Domestic Crude Oil First Purchase Report."

Price

FOB Cost of Crude Oil Imports from Selected Countries[1]

		Algeria	Indonesia	Iran	Libya	Mexico	Nigeria	Saudi Arabia	United Arab Emirates	United Kingdom	Venezuela
		Dollars per barrel									
1976	**AVERAGE**	**13.05**	**12.76**	**11.61**	**12.55**	**NA**	**13.08**	**11.69**	**11.94**	**NA**	**11.32**
1977	**AVERAGE**	**14.36**	**13.57**	**12.67**	**13.90**	**13.42**	**14.44**	**12.37**	**12.83**	**NA**	**12.68**
1978	January	14.29	13.67	12.62	13.77	13.45	14.18	12.70	13.23	NA	12.73
	February	14.21	13.62	12.68	13.91	13.43	14.18	12.78	13.18	NA	12.61
	March	14.19	13.62	12.68	13.75	13.44	14.13	12.80	13.20	13.80	12.86
	April	14.09	13.61	12.68	13.62	13.42	13.91	12.74	13.23	13.65	12.54
	May	13.99	13.51	12.65	13.59	13.42	13.90	12.71	13.05	13.64	12.13
	June	14.06	13.63	12.58	13.59	13.32	13.90	12.67	13.28	13.65	12.32
	July	14.06	13.63	12.70	13.67	13.13	13.89	12.65	13.26	13.72	12.66
	August	14.05	13.63	12.63	13.66	13.17	13.86	12.66	13.27	13.80	12.23
	September	14.05	13.69	12.63	13.66	13.13	13.97	12.76	13.27	13.74	12.38
	October	14.08	13.63	12.64	13.73	13.15	14.08	12.59	13.24	14.14	12.32
	November	14.13	13.79	12.62	13.97	13.17	14.12	12.63	13.29	13.85	12.46
	December	14.16	13.65	12.67	14.07	13.13	14.29	12.77	13.39	14.06	12.42
	AVERAGE	**14.10**	**13.64**	**12.65**	**13.75**	**13.24**	**14.04**	**12.70**	**13.24**	**13.82**	**12.45**
1979	January	14.87	14.06	12.55	14.60	13.94	14.84	13.26	13.98	15.41	13.69
	February	14.89	14.18	12.56	15.15	14.17	14.98	13.47	14.28	15.33	13.26
	March	15.54	14.42	19.04	16.46	14.14	15.07	13.61	15.72	16.13	13.88
	April	16.80	15.98	17.96	17.40	17.02	18.18	14.77	16.24	17.40	14.58
	May	19.14	16.84	17.27	19.13	18.56	20.02	14.62	17.38	18.39	15.76
	June	21.04	18.59	19.95	20.87	17.43	22.11	17.98	18.91	20.88	16.01
	July	22.42	20.95	21.99	23.88	22.29	24.46	18.54	21.33	23.14	18.22
	August	23.44	21.65	21.40	24.93	22.56	25.43	18.32	21.45	23.88	18.66
	September	23.60	22.11	27.27	25.17	22.32	25.77	18.72	22.93	22.93	18.14
	October	24.40	24.39	31.80	27.39	24.43	26.33	21.44	21.85	25.09	22.36
	November	26.38	23.72	28.81	29.60	24.50	28.17	23.72	24.15	27.57	19.27
	December	28.67	25.29	35.13	31.86	24.50	29.82	22.99	27.90	25.89	20.62
	AVERAGE	**20.65**	**19.35**	**23.71**	**22.43**	**20.29**	**21.80**	**17.63**	**19.58**	**21.20**	**17.37**
1980	January	33.29	27.95	27.55	33.97	28.90	31.60	24.86	29.09	30.39	25.45
	February	35.72	30.95	29.28	35.53	31.88	34.21	25.71	31.37	31.93	25.31
	March	33.98	31.97	28.02	35.75	30.54	34.21	26.09	29.77	33.73	23.03
	April	36.70	32.35	NA	35.25	30.30	35.98	27.28	30.29	34.70	24.18

[1]The FOB cost excludes all costs related to insurance and transportation. See Explanatory Note 15.
NA = Not available.
Sources: 1976 through January 1979: FEA Form 701-M-0, "Transfer Pricing Report."
• February 1979 forward: Economic Regulatory Administration Form 51, "Transfer Pricing Report."

Price

Landed Cost of Crude Oil Imports from Selected Countries[1]

		Algeria	Canada	Indonesia	Iran	Libya	Mexico	Nigeria	Saudi Arabia	United Arab Emirates	United Kingdom	Venezuela
						Dollars per barrel						
1975	**AVERAGE**	**12.72**	**12.72**	**13.79**	**12.21**	**12.35**	**NA**	**12.62**	**12.30**	**12.87**	**NA**	**11.65**
1976	**AVERAGE**	**13.81**	**13.57**	**13.82**	**12.82**	**13.58**	**NA**	**13.80**	**13.04**	**13.30**	**NA**	**11.80**
1977	**AVERAGE**	**15.20**	**14.21**	**14.63**	**13.80**	**14.87**	**13.75**	**15.25**	**13.61**	**14.04**	**NA**	**13.13**
1978	January	15.01	14.37	14.60	13.91	14.63	13.83	14.88	13.93	14.40	NA	13.00
	February	14.91	14.31	14.53	13.75	14.85	13.67	14.90	13.96	14.07	NA	12.93
	March	14.74	13.56	14.56	14.06	14.62	13.66	14.89	14.07	14.44	14.75	13.22
	April	14.91	13.87	14.61	13.90	14.43	13.63	14.63	13.85	14.42	14.26	12.89
	May	14.70	14.39	14.50	13.94	14.56	13.65	14.72	13.86	14.20	14.35	12.49
	June	14.80	15.07	14.58	13.92	14.45	13.51	14.61	13.86	14.48	14.19	12.72
	July	14.83	14.64	14.73	13.93	14.65	13.35	14.64	13.81	14.29	13.81	12.41
	August	14.83	14.78	14.66	13.76	14.64	13.52	14.59	13.84	14.49	14.48	12.70
	September	14.74	13.92	14.73	13.83	14.62	13.45	14.78	14.03	14.36	14.53	12.94
	October	14.90	14.73	14.68	13.89	14.81	13.39	15.03	13.89	14.61	14.85	12.78
	November	15.30	14.72	14.85	13.89	15.04	13.61	15.06	14.02	14.38	14.81	13.08
	December	15.27	14.96	14.80	13.80	15.23	13.50	15.30	14.00	14.66	15.00	13.02
	AVERAGE	**14.91**	**14.50**	**14.64**	**13.88**	**14.72**	**13.54**	**14.86**	**13.92**	**14.39**	**NA**	**12.83**
1979	January	15.88	16.19	15.29	13.76	15.81	14.51	15.88	14.73	15.53	16.29	14.16
	February	16.18	16.68	15.62	14.25	16.49	14.76	16.13	14.88	16.05	16.07	14.17
	March	16.61	17.18	15.68	19.54	17.56	14.81	16.20	15.28	17.10	15.91	14.61
	April	17.93	17.39	17.31	19.06	18.59	17.40	19.11	16.18	17.70	18.23	15.19
	May	20.22	20.22	17.92	18.56	20.16	18.82	21.06	16.29	18.65	19.26	16.74
	June	22.52	19.12	20.11	21.27	22.21	17.85	23.23	19.49	20.42	21.64	16.80
	July	23.54	20.22	22.50	23.35	25.48	22.74	25.79	20.06	22.84	23.96	18.95
	August	24.85	22.67	23.10	22.64	26.27	23.12	26.72	19.85	23.12	25.05	19.42
	September	25.09	25.64	23.72	28.36	26.54	23.23	27.03	20.36	24.59	24.18	18.99
	October	25.59	23.54	26.36	33.17	28.56	24.98	27.41	22.99	23.98	26.39	23.05
	November	27.95	26.01	23.57	30.44	30.38	25.12	29.41	25.19	25.95	29.10	20.13
	December	29.99	26.32	26.84	36.64	33.29	25.31	31.21	24.48	29.93	27.07	21.72
	AVERAGE	**21.90**	**20.43**	**20.69**	**25.02**	**23.68**	**20.86**	**22.96**	**19.15**	**21.90**	**22.16**	**18.18**
1980	January	34.82	27.99	29.57	28.85	35.24	29.55	33.02	26.46	31.50	31.83	26.50
	February	37.05	29.95	32.72	30.37	36.76	32.44	35.57	27.27	33.22	33.21	26.09
	March	35.66	31.50	33.42	30.05	37.01	31.15	35.59	27.61	31.50	35.34	24.27
	April	38.53	30.29	33.99	NA	36.43	30.83	37.25	28.76	32.39	35.77	25.41

[1]See Explanatory Note 16.
NA = Not available.
Sources: • 1975 through January 1979: FEA Form F701-M-0, "Transfer Pricing Report." Data provided by the Economic Regulatory Administration.
• February 1979 forward: ERA 51, "Transfer Pricing Report."

Price

		Crude Oil Entitlements and Supply Ratio			Unrecouped Costs for Refined Products for 29 Largest Refiners[1]		
		Entitlement Benefit[2]	Entitlement Price[2]	National Old Oil (or Domestic Crude Oil) Supply Ratio[2]	Motor Gasoline	Other Products[3]	Total
		Dollars per barrel			Million Dollars		
1977	January	2.21	8.30	0.266	901	491	1,392
	February	2.28	8.53	0.267	1,038	490	1,528
	March	2.38	8.71	0.273	956	467	1,423
	April	2.48	8.69	0.285	1,029	537	1,566
	May	2.46	8.77	0.280	967	575	1,542
	June	2.36	8.65	0.273	957	578	1,535
	July	2.24	8.68	0.258	869	601	1,470
	August	2.33	8.75	0.266	764	734	1,498
	September	2.19	8.75	0.250	784	686	1,470
	October	2.20	8.78	0.250	879	759	1,638
	November	2.06	8.61	0.239	904	756	1,660
	December	2.02	8.65	0.233	818	655	1,473
1978	January	2.07	8.61	0.240	1,055	611	1,666
	February	1.95	8.48	0.230	1,265	633	1,898
	March	1.91	8.47	0.225	1,065	553	1,618
	April	1.82	8.35	0.218	1,013	570	1,583
	May	1.63	8.26	0.197	849	686	1,535
	June	1.56	8.19	0.191	718	742	1,460
	July	1.50	8.16	0.184	713	585	1,298
	August	1.33	8.06	0.165	353	535	888
	September	1.41	8.13	0.174	554	646	1,200
	October	1.44	8.11	0.178	627	832	1,459
	November	1.35	8.16	0.166	709	642	1,351
	December	1.27	8.20	0.155	532	885	1,417
1979	January	1.56	8.74	0.178	836	863	1,699
	February	1.67	9.03	0.185	1,110	878	1,988
	March	1.80	9.50	0.189	1,551	837	2,388
	April	2.06	10.53	0.196	2,067	1,649	3,716
	May	2.44	11.74	0.208	2,245	1,848	4,093
	June	3.01	13.70	0.220	2,507	1,973	4,480
	July	3.54	16.01	0.221	2,990	2,089	5,079
	August	3.78	17.26	0.218	2,856	2,347	5,203
	September	3.92	17.97	0.218	3,151	2,376	5,527
	October	4.00	18.27	0.219	3,094	2,295	5,389
	November	4.39	20.12	0.218	3,492	2,302	5,794
	December	4.71	21.91	0.215	3,724	1,171	4,895
1980	January	5.28	23.53	0.224	4,115	1,189	5,304
	February	5.14	24.70	0.208	5,362	1,167	6,529
	March	5.05	25.26	0.200	6,236	1,213	7,445
	April	5.10	25.74	0.198	6,202	1,391	7,593
	Mayt	6.22	27.39	0.227	NA	NA	NA

Geographic coverage: the 50 United States, District of Columbia, Puerto Rico, Guam, and the Virgin Islands.
[1]Beginning with February 1977, data for only 29 refiners are included in this table due to the merger between Skelly Oil Company and Getty Oil Company.
[2]See definitions.
[3]Other includes propane, butane, natural gasoline, some natural gas liquids, and aviation jet fuel from January 1977 until February 1979 when aviation jet fuel was decontrolled. Since January 1980, when butane and natural gasoline were decontrolled, only propane and some natural gas liquids are included in this category.
tPreliminary data. NA = Not available.
Sources: • Crude oil entitlements, Economic Regulatory Administration Form 49, "Domestic Crude Oil Entitlements Program Refiners Monthly Report."
• Unrecouped costs, January 1977 through June 1978: FEA Form P110–M–1, "Refiners' Monthly Cost Allocation Report."
• Unrecouped costs, July 1978 forward: EIA Form 14, "Refiners' Monthly Cost Allocation Report." Data provided by the Economic Regulatory Administration.

Price

National Average Retail Dealer Motor Gasoline Selling Prices

		Leaded Regular		Unleaded Regular		Leaded Premium		Unleaded Premium		
		Full Serve	Self Serve	Full Serve	Self Serve	Full Serve	Self Serve	Full Serve	Self Serve	Average for All Grades
		Cents per gallon, including tax								
1976	**AVERAGE**	**58.7**	**55.4**	**62.5**	**NA**	**63.8**	**60.7**	**NA**	**NA**	**NA**
1977	**AVERAGE**	**62.6**	**58.2**	**66.4**	**63.6**	**68.1**	**64.7**	**71.0**	**NA**	**NA**
1978	January	61.7	57.2	65.8	61.6	67.7	63.5	69.6	66.0	63.1
	February	61.6	57.1	65.7	61.8	67.7	64.0	NA	66.1	63.0
	March	61.7	57.0	65.8	61.8	68.0	63.9	69.7	66.0	63.0
	April	61.9	57.2	66.1	62.0	68.3	64.3	70.4	NA	63.2
	May	62.5	58.2	66.9	62.9	69.0	65.3	NA	NA	64.0
	June	63.4	59.0	67.8	64.0	70.0	66.2	NA	NA	64.8
	July	64.6	60.6	68.8	65.6	71.1	68.2	73.5	70.3	66.1
	August	65.4	61.2	69.8	66.2	72.0	68.8	74.4	71.3	66.8
	September	65.8	61.7	70.2	66.9	72.4	69.2	75.2	71.3	67.2
	October	65.9	61.5	70.2	66.7	72.5	69.3	74.8	71.8	67.2
	November	66.7	62.3	71.1	67.7	73.3	70.1	76.3	73.9	68.2
	December	67.5	63.4	71.7	68.7	73.7	71.0	77.1	74.7	68.9
	AVERAGE	**63.9**	**59.8**	**68.4**	**64.9**	**69.4**	**67.1**	**72.8**	**69.7**	**65.5**
1979	January	68.4	64.0	72.9	69.3	74.8	71.3	78.6	75.1	69.8
	February	69.9	65.4	74.5	70.4	76.2	72.8	80.8	77.0	71.0
	March	72.6	68.7	77.4	73.9	78.9	76.0	83.7	78.8	74.0
	April	76.8	73.7	81.6	78.5	83.5	81.7	86.2	82.5	78.4
	May	81.2	78.6	85.8	83.2	88.0	86.4	89.9	86.3	82.9
	June	86.3	83.8	90.9	88.3	92.9	91.8	94.5	91.3	87.9
	July	91.3	88.4	95.6	92.6	96.9	95.2	100.4	97.8	92.6
	August	95.6	92.0	100.1	96.5	101.8	99.1	105.6	101.6	96.7
	September	98.2	94.3	103.2	99.3	105.4	102.2	108.9	104.4	99.4
	October	99.5	95.1	104.3	100.0	106.5	102.9	110.1	106.1	100.5
	November	100.7	97.0	105.4	101.7	107.0	104.6	111.0	107.6	101.8
	December	R103.6	R99.7	108.2	104.5	R110.1	107.5	R113.9	109.9	104.6
	AVERAGE	**R87.1**	**R83.9**	**R92.2**	**R89.2**	**R92.0**	**R89.2**	**R98.1**	**R94.2**	**R88.8**
1980	January	110.2	105.9	114.7	110.8	116.4	114.5	121.4	116.8	110.7
	February	117.9	113.2	122.5	118.4	124.2	122.9	130.3	126.2	118.3
	March	121.3	116.6	125.9	121.9	128.0	126.9	134.2	129.3	121.5
	April	R121.9	117.0	R126.7	R122.5	R129.3	127.6	R134.9	R129.4	R122.1
	May†	122.5	117.5	127.1	122.9	129.2	128.0	134.4	128.6	122.5
	AVERAGE	**118.4**	**113.9**	**123.1**	**119.2**	**124.8**	**123.6**	**130.6**	**125.6**	**118.8**

Geographic coverage: the 50 United States and District of Columbia.
†Preliminary data.
R = Revised data.
NA = Not available.
Note: "Average for all grades" excludes mini-serve for January 1978 through June 1978. Mini-serve is included from July 1978 forward. No. 2 diesel fuel is included in the "Average for All Grades" beginning July 1979.
Sources: • January 1976 through December 1977: Lundberg Survey, Inc.
• January 1978 through June 1978: EIA 8, "Retail Motor Fuels Service Station Survey".
• July 1978 forward: EIA 79, "Monthly Motor Fuels Service Station Survey".

Price

Aviation Fuel

		Aviation Gasoline		Naphtha-Type[1]	Kerosene-Type	
		Wholesale[2]	Retail[2]	Retail[2]	Wholesale[2]	Retail[2]
		Cents per gallon, excluding tax				
1976	**AVERAGE**	**42.4**	**43.1**	**31.5**	**32.5**	**31.2**
1977	**AVERAGE**	**46.7**	**47.7**	**35.0**	**36.7**	**35.8**
1978	January	47.8	49.1	36.9	37.9	38.5
	February	48.3	48.4	36.5	38.3	38.2
	March	49.1	49.4	36.9	37.8	38.4
	April	49.5	51.5	36.8	38.1	38.5
	May	50.1	50.0	37.3	38.3	38.6
	June	50.4	52.8	37.2	38.9	38.9
	July	51.4	52.4	37.6	39.0	38.9
	August	52.0	54.0	37.5	38.9	39.3
	September	52.6	54.0	37.8	39.2	39.3
	October	52.5	56.1	38.5	39.7	39.3
	November	53.4	51.4	38.5	40.2	39.4
	December	53.2	54.3	38.4	40.6	39.5
	AVERAGE	**51.0**	**52.1**	**37.5**	**38.9**	**38.9**
1979	January	54.1	53.9	38.6	42.2	40.1
	February	54.6	55.1	39.1	44.3	40.2
	March	56.6	56.8	40.7	54.8	41.3
	April	58.2	59.1	43.2	60.1	45.4
	May	60.6	61.2	44.1	58.1	48.4
	June	64.8	66.8	49.5	59.9	50.9
	July	70.0	71.8	50.4	67.1	58.2
	August	74.2	75.6	55.0	71.4	60.8
	September	78.2	79.0	60.2	73.1	65.9
	October	79.8	80.4	64.6	80.6	68.4
	November	81.3	80.6	66.4	83.4	69.7
	December	84.1	83.4	73.3	83.2	72.3
	AVERAGE	**68.5**	**69.5**	**52.3**	**66.5**	**55.1**
1980	January	90.6	90.0	76.0	83.4	77.0
	February	98.5	97.8	80.1	86.2	83.0
	March	102.9	107.0	84.1	86.6	86.3
	April†	104.8	109.6	83.2	88.4	87.4
	AVERAGE	**99.8**	**101.5**	**80.8**	**86.3**	**83.3**

Geographic coverage: the 50 United States and District of Columbia.
[1]Nearly all naphtha-type fuels are sold directly to the Defense Fuel Supply Center. Consequently, wholesale prices are not applicable.
[2]Wholesale refers to the price of aviation fuel sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and aviation fuel distributors. Retail refers to the price of aviation fuel sold to ultimate consumers, including commercial airline and military accounts.
†Preliminary data.
Source: • FEA Form P302–M–1, "Petroleum Industry Monthly Report for Product Prices."

Price

National Average Heating Oil Prices[1]

		Refiners' Average Selling Price to Resellers and Retailers	Average Purchase Price Paid by Distributors for Heating Oil[2]	Average Distributor Margin on Residential Heating Oil[2]	Average Selling Price to Residential Customers[2]
		Cents per gallon			
1976	**AVERAGE**	**31.4**	**32.6**	**NA**	**40.6**
1977	**AVERAGE**	**35.7**	**36.9**	**NA**	**46.0**
1978	January	36.8	38.1	10.5	48.5
	February	36.4	37.8	11.0	48.6
	March	36.2	37.6	11.1	48.6
	April	36.0	37.6	11.1	48.6
	May	36.2	37.6	11.0	48.3
	June	35.8	37.7	10.7	48.2
	July	35.9	37.7	10.7	48.2
	August	36.1	37.9	10.5	48.2
	September	36.9	38.6	10.6	49.0
	October	38.1	39.6	10.8	50.2
	November	39.4	40.5	11.2	51.5
	December	40.1	41.3	11.6	52.6
	AVERAGE	**37.2**	**38.7**	**11.0**	**49.4**
1979	January	40.9	42.1	11.8	53.7
	February	43.1	44.5	12.0	56.3
	March	45.8	47.0	12.0	58.8
	April	48.3	49.3	12.1	61.1
	May	53.2	52.6	12.1	64.2
	June	58.8	56.9	12.7	69.1
	July	62.5	61.1	13.0	73.8
	August	65.7	64.6	13.0	78.4
	September	69.0	67.8	13.7	81.0
	October	68.6	68.1	14.8	82.3
	November	70.0	69.0	15.1	83.7
	December	71.7	70.8	15.5	85.8
	AVERAGE	**55.9**	**53.0**	**12.8**	**65.6**
1980	January	75.0	75.2	16.2	90.8
	February	77.8	79.0	16.7	95.3
	March	78.8	80.4	17.1	97.1
	April	R78.8	81.0	R17.0	R97.4
	May†	79.6	81.2	16.4	97.1
	AVERAGE	**77.7**	**78.6**	**16.7**	**94.7**

Geographic coverage: the 50 United States and District of Columbia.
[1]See Explanatory Note 17.
[2]Average selling prices, purchase prices, and dealer margins represent sales for residential heating oil only.
†Preliminary data.
R = Revised data.
NA = Not available.
Source: • FEA Form P112-M-1/EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report."

Price

Residential Heating Oil Prices by Region

		DOE Region[1]									
		Cents per gallon									
		1	2	3	4	5	6	7	8	9	10
1978	January	49.4	49.2	48.1	47.5	46.4	NA	44.5	45.2	44.7	47.4
	February	49.5	49.3	48.4	47.6	46.4	NA	45.2	45.5	45.6	47.5
	March	49.4	49.3	48.4	47.7	46.5	NA	44.4	45.0	47.0	47.8
	April	49.3	49.2	48.2	47.1	46.4	NA	44.6	45.0	45.1	47.6
	May	49.3	49.1	47.7	46.7	46.3	NA	44.7	45.0	44.4	47.4
	June	49.2	49.1	47.8	46.8	46.0	NA	44.8	45.4	43.9	47.7
	July	49.1	49.0	47.6	46.7	46.4	NA	45.0	45.8	43.5	48.1
	August	49.1	49.0	47.6	47.4	46.3	NA	45.1	45.5	44.8	47.3
	September	50.0	49.7	48.5	46.6	46.8	NA	45.6	46.3	45.0	47.7
	October	51.2	51.0	50.0	48.1	47.6	NA	45.9	46.3	45.9	48.3
	November	52.8	52.3	51.3	49.5	49.2	NA	47.6	47.9	45.8	49.1
	December	54.0	53.4	52.3	50.4	50.2	NA	48.2	48.7	46.7	49.9
1979	January	55.1	54.5	53.3	51.6	51.5	NA	49.6	50.4	47.6	50.8
	February	57.7	57.3	55.5	53.2	53.7	NA	51.3	51.4	49.4	52.9
	March	60.6	59.8	57.5	54.3	56.3	NA	54.7	55.3	50.8	55.3
	April	62.8	61.9	60.0	57.3	58.8	NA	58.2	58.4	53.8	57.8
	May	65.9	64.8	63.4	61.2	62.8	NA	62.0	62.7	56.2	60.8
	June	70.5	69.7	68.4	66.2	68.5	NA	68.9	67.8	62.2	66.4
	July	75.9	73.9	72.9	70.9	73.2	NA	72.0	72.5	68.4	72.3
	August	80.1	78.6	77.7	74.8	78.5	NA	76.4	77.1	71.7	77.2
	September	83.3	81.4	80.0	79.4	81.5	NA	79.5	80.1	76.8	81.4
	October	84.1	82.5	81.7	79.1	82.6	NA	80.2	81.3	81.2	82.6
	November	85.1	83.7	82.4	80.5	83.9	NA	82.2	84.0	80.4	82.3
	December	87.2	85.7	85.1	82.9	86.1	NA	85.3	86.3	82.6	84.6
1980	January	91.8	91.0	90.2	88.6	90.4	NA	90.0	90.2	89.6	91.0
	February	96.7	95.3	94.7	93.0	93.5	NA	93.6	93.5	95.8	95.7
	March	98.7	97.2	96.5	94.8	94.3	NA	95.1	95.9	93.9	97.6
	April	R99.2	R97.3	R96.6	R94.1	R94.5	NA	R95.3	R99.5	R94.7	R99.0
	May†	98.5	97.2	96.4	94.1	95.2	NA	95.1	97.7	94.2	98.6

[1]DOE regions are defined in Explanatory Note 18.
†Preliminary data.
R = Revised data.
NA = Not available. Data for Region 6 are based on a sample of less than four reporting firms.
Note: Average regional distributor purchase prices for heating oil for the period January 1975 through December 1976 are published on page 67 of the April 1978 issue of the *Monthly Energy Review.*
Source: • FEA Form P112-M-1/EIA-9, "No. 2 Heating Oil Supply/Price Monitoring Report."

Price

Average No. 6 Residual Fuel Oil Prices

		0.0 to 0.3 percent sulfur		0.31 to 1.0 percent sulfur		Greater than 1.0 percent sulfur		Average	
		Wholesale	Retail	Wholesale	Retail	Wholesale	Retail	Wholesale	Retail
		Dollars per barrel, excluding taxes							
1976	**AVERAGE**	**12.20**	**12.54**	**10.83**	**11.79**	**9.98**	**10.43**	**10.72**	**11.49**
1977	**AVERAGE**	**13.45**	**14.36**	**12.09**	**13.45**	**11.31**	**12.27**	**11.96**	**13.23**
1978	January	12.72	14.19	11.56	12.70	10.71	12.00	11.33	12.79
	February	12.20	14.05	11.64	12.42	10.58	11.75	11.25	12.53
	March	12.73	13.99	11.94	12.75	10.48	11.70	11.36	12.63
	April	12.72	14.51	12.26	12.95	10.84	11.85	11.57	12.87
	May	12.67	14.21	12.01	12.88	10.79	11.74	11.70	12.79
	June	12.37	13.99	11.83	12.58	10.82	11.60	11.41	12.50
	July	11.26	13.93	11.29	12.01	10.51	11.48	10.86	12.21
	August	11.41	14.09	11.24	11.97	10.46	11.54	10.70	12.34
	September	12.29	14.18	11.46	12.30	10.69	11.39	11.26	12.43
	October	13.43	14.63	12.06	13.00	10.83	11.82	11.76	13.01
	November	14.12	15.55	13.26	13.77	10.87	11.54	12.36	13.34
	December	14.66	15.98	13.19	14.13	11.04	11.82	12.57	13.75
	AVERAGE	**12.77**	**14.47**	**11.95**	**12.78**	**10.73**	**11.70**	**11.51**	**12.75**
1979	January	15.16	16.12	13.68	14.79	11.00	11.92	12.78	14.13
	February	16.12	17.28	15.01	15.30	11.31	12.28	13.72	14.68
	March	16.08	18.05	15.90	16.94	13.48	14.00	14.82	15.95
	April	17.79	19.09	16.34	17.44	13.70	14.59	15.51	16.61
	May	18.04	19.45	15.74	17.89	14.69	15.37	15.71	17.18
	June	20.92	19.79	18.08	18.51	15.95	16.40	17.81	17.97
	July	21.85	23.07	21.25	20.47	16.51	17.86	19.18	19.89
	August	21.05	22.63	19.49	21.28	17.51	18.32	19.00	20.33
	September	21.81	22.92	21.01	21.66	17.54	18.94	19.62	20.90
	October	23.80	23.29	22.99	22.33	18.31	19.53	20.88	21.59
	November	26.68	25.54	24.07	24.31	19.31	19.51	22.00	22.84
	December	27.09	27.78	25.83	25.01	20.67	21.05	23.55	24.44
	AVERAGE	**19.87**	**21.21**	**18.33**	**19.33**	**15.89**	**16.44**	**17.66**	**18.67**
1980	January	29.11	30.35	26.15	28.12	21.56	21.98	24.41	26.21
	February	27.07	30.32	25.82	28.15	20.21	22.22	23.34	26.48
	March	R26.88	30.20	R23.73	R27.29	R17.81	20.34	R21.11	R25.33
	April†	25.16	28.69	20.38	24.78	16.41	18.36	19.09	22.87
	AVERAGE	**27.14**	**29.99**	**24.03**	**27.24**	**19.06**	**20.82**	**22.02**	**25.36**

Geographic coverage: the 50 United States and District of Columbia.
Note: Wholesale refers to the price of residual fuel sold to other refiners and resellers, including bulk plants, branded and unbranded jobbers, and other residual dealers. Retail refers to the price at which residual fuel oil is sold to ultimate consumers such as utility, industrial, commercial, and residential accounts.
† Preliminary data. R = Revised data.
Source: • FEA Form P302-M-1, "Petroleum Industry Monthly Report for Product Prices."

Price

Natural Gas

		Average Wellhead Value	Prices Reported by Major Interstate Pipeline Companies						Average Residential Retail Price for Heating
			Purchases			Sales			
			From Domestic Producers	From Canadian and Foreign Sources	Total Purchases	To Industrial Users[1]	To Resellers[2]	Total Sales	
			Cents per thousand cubic feet						
1973	**AVERAGE**	**21.6**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**108.2**
1974	**AVERAGE**	**30.4**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**125.3**
1975	**AVERAGE**	**44.5**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**154.2**
1976	**AVERAGE**	**58.0**	**47.9**	**172.7**	**58.4**	**97.2**	**100.3**	**100.5**	**184.6**
1977	**AVERAGE**	**79.0**	**69.5**	**199.0**	**81.4**	**131.9**	**132.2**	**132.5**	**226.4**
1978	January	87.3	74.0	211.2	86.4	150.4	138.2	139.2	241.6
	February	87.9	76.3	211.3	89.2	158.2	141.5	142.8	243.0
	March	89.1	79.3	212.5	91.1	149.7	144.7	145.5	247.0
	April	88.0	80.7	222.0	92.9	149.9	147.7	148.2	248.7
	May	90.8	81.2	218.5	92.5	149.0	149.7	150.0	255.2
	June	90.7	82.6	220.5	93.5	148.3	153.0	152.7	254.2
	July	88.9	83.8	222.6	95.0	149.5	155.7	155.0	NA
	August	91.2	84.2	222.5	95.6	148.9	154.9	154.0	NA
	September	92.1	87.7	216.8	97.9	152.0	155.3	155.0	NA
	October	92.0	90.6	225.3	101.3	158.5	157.4	157.7	NA
	November	92.5	89.7	219.3	101.8	171.0	160.9	162.0	281.9
	December	96.1	95.7	215.1	107.1	169.9	159.4	160.7	286.2
	AVERAGE	**90.5**	**83.9**	**217.8**	**95.5**	**154.1**	**150.7**	**151.3**	**262.6**
1979	January	99.5	99.9	206.7	111.0	192.2	160.9	163.0	292.9
	February	101.8	102.3	210.1	114.0	195.5	164.4	166.6	295.6
	March	106.3	106.1	224.8	118.4	186.8	171.5	173.2	300.6
	April	107.0	116.7	222.1	127.9	190.7	167.6	170.2	299.6
	May	111.6	118.3	228.6	129.5	202.5	188.8	190.5	314.9
	June	112.9	118.3	233.4	130.9	180.5	184.4	184.2	320.0
	July	116.4	119.2	232.1	131.9	198.8	190.3	191.4	328.4
	August	119.0	125.6	263.6	138.6	205.4	192.5	193.8	330.8
	September	120.6	130.5	274.1	145.8	212.4	209.4	209.8	341.4
	October	124.0	135.6	284.2	151.7	218.9	216.2	216.5	352.8
	November	125.6	141.1	340.6	161.4	219.1	218.2	218.4	347.6
	December	128.9	135.0	354.2	156.5	211.4	216.6	216.1	351.9
	AVERAGE	**114.4**	**121.6**	**260.1**	**135.7**	**201.8**	**188.6**	**190.0**	**323.1**
1980	January	129.1	141.3	345.5	163.0	237.3	228.2	229.2	354.9
	February	132.0	142.5	369.0	165.0	238.7	229.8	230.7	357.9
	March	132.2	NA	NA	NA	NA	NA	NA	368.1
	April	134.7	NA	NA	NA	NA	NA	NA	367.8
	May	NA	NA	NA	NA	NA	NA	NA	393.9

Geographic coverage: the 50 United States and District of Columbia.
[1]Represents direct sales by pipeline companies to industrial users. Does not include sales to industrial users by resellers.
[2]Includes the cost of gas to the distributing utility at entrance of distribution system or point of receipt.
NA = Not available.
Sources: • Annual data for wellhead values are from the appropriate agencies of the individual producing states and the U.S. Geological Survey; monthly data are estimated primarily on the basis of values reported by state agencies in New Mexico, Oklahoma, and Texas.
• Interstate Pipeline Company data from Federal Power Commission Form 11, "Natural Gas Pipeline Company Monthly Statement."
• Average retail prices, Bureau of Labor Statistics.

Price

Electricity

		Cost of Fossil Fuels Delivered to Steam-Electric Utility Plants				Average Retail Electricity Prices[1]				
		Coal	Residual Oil[2]	Natural Gas[3]	All Fossil Fuels[2]	Residential	Commercial	Industrial	Other	Total[4]
		Cents per million Btu				Cents per kilowatt-hour				
1973	**AVERAGE**	**40.5**	**78.8**	**33.8**	**47.5**	**2.54**	**2.41**	**1.25**	**2.10**	**1.96**
1974	**AVERAGE**	**71.0**	**191.0**	**48.1**	**90.9**	**3.10**	**3.04**	**1.69**	**2.75**	**2.49**
1975	**AVERAGE**	**81.4**	**201.4**	**75.4**	**103.0**	**3.51**	**3.45**	**2.07**	**3.08**	**2.92**
1976	**AVERAGE**	**84.8**	**195.9**	**103.4**	**110.4**	**3.73**	**3.69**	**2.21**	**3.27**	**3.09**
1977	**AVERAGE**	**94.7**	**220.4**	**130.0**	**127.7**	**4.05**	**4.09**	**2.50**	**3.51**	**3.42**
1978	January	99.6	211.3	133.3	153.4	3.90	4.11	2.60	3.47	3.46
	February	102.1	207.8	135.1	154.3	3.94	4.16	2.73	3.47	3.54
	March	113.4	209.6	140.2	151.6	4.14	4.34	2.86	3.68	3.69
	April	110.9	213.1	140.2	135.4	4.34	4.41	2.82	3.75	3.70
	May	110.6	213.7	143.5	132.8	4.46	4.42	2.77	3.89	3.69
	June	112.0	209.9	149.3	136.0	4.53	4.48	2.81	3.76	3.78
	July	110.2	205.0	149.8	138.2	4.50	4.40	2.84	3.69	3.82
	August	110.0	205.6	149.4	135.9	4.51	4.40	2.81	3.72	3.80
	September	111.4	208.5	146.6	135.8	4.48	4.41	2.79	3.72	3.78
	October	114.0	217.9	147.1	138.1	4.48	4.46	2.79	3.53	3.74
	November	115.6	222.9	141.1	138.8	4.39	4.38	2.78	3.55	3.66
	December	115.9	226.1	139.3	142.9	4.22	4.32	2.79	3.54	3.64
	AVERAGE	**111.6**	**212.3**	**143.8**	**139.3**	**4.31**	**4.36**	**2.79**	**3.62**	**3.69**
1979	January	115.8	228.1	150.2	150.4	4.07	4.28	2.81	3.55	3.64
	February	114.6	240.6	159.1	154.3	4.09	4.30	2.85	3.73	3.66
	March	116.8	258.8	163.0	152.3	4.28	4.44	2.89	3.87	3.75
	April	120.1	264.6	164.7	151.4	4.51	4.54	2.90	3.88	3.81
	May	121.1	274.1	177.5	158.0	4.68	4.65	2.96	3.98	3.89
	June	121.8	289.3	179.5	161.2	4.88	4.73	3.02	4.05	4.02
	July	122.2	311.8	178.9	168.7	4.91	4.76	3.11	4.20	4.14
	August	122.5	323.5	180.9	167.1	4.94	4.79	3.11	3.89	4.17
	September	125.3	333.5	183.5	167.9	4.95	4.84	3.14	4.08	4.18
	October	127.4	346.1	189.1	167.3	4.94	4.89	3.14	3.89	4.13
	November	127.7	363.1	180.3	171.5	4.83	4.92	3.16	4.09	4.12
	December	129.2	394.8	183.3	183.8	4.71	4.90	3.23	4.18	4.15
	AVERAGE	**122.4**	**299.7**	**175.4**	**162.1**	**4.63**	**4.67**	**3.03**	**3.94**	**3.97**
1980	January	128.7	423.5	194.8	187.3	4.69	4.90	3.29	4.19	4.19
	February	129.9	429.7	203.9	189.8	4.74	4.96	3.31	4.64	4.24
	March	130.1	411.0	207.9	184.8	NA	NA	NA	NA	NA
	April	133.8	394.9	204.0	178.2	NA	NA	NA	NA	NA

Geographic coverage: Fossil Fuels—the lower 48 States and the District of Columbia. Electricity—the 50 United States and the District of Columbia.

[1]Prices are for Classes A and B privately owned electric utilities.

[2]See Explanatory Note 19.

[3]Includes small quantities of coke oven gas, refinery gas and blast furnace gas.

[4]Average price for total sale to ultimate consumers.

Note: Electricity sales data are not available for March and April 1980. The FPC Form 5 has been redesigned and redesignated as FERC Form 5. Computer system redesigned to present electricity sales information, in a manner consistent with past practices, is not yet completed.

NA = Not available.

Sources: • Cost of Fossil Fuels, Federal Power Commission Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

• Retail Price, Federal Power Commission, Form 5, "Monthly Statement of Electric Operating Revenue and Income."

International

Crude Oil Production

World crude oil production during May 1980 rose to 60.3 million barrels per day, up just 0.1 million barrels per day from April. This represents the second lowest world production level since January 1979.

OPEC output during May declined 0.3 million barrels per day from April, averaging 27.6 million barrels per day. The only major cutback in production was seen in Iran, which was down 500 thousand barrels per day from their April production level.

Production by non-OPEC nations increased during May to 32.7 million barrels per day, up 460 thousand barrels per day from the previous month. The largest increases were seen in Canada and the United Kingdom, up 80 and 90 thousand barrels per day, respectively.

Petroleum Consumption

Petroleum consumption by International Energy Agency (IEA) member nations was 34.4 million barrels per day during March 1980. This preliminary figure indicates a 2.5 million barrels per day decrease from the consumption rate during February 1980, and a 2.9 million barrels per day decrease from the March 1979 rate.

Preliminary consumption data for April 1980 were available for all countries except West Germany. While year-to-date data indicate a decline in the rate of consumption for all these nations, as compared to the same period of time during 1979, the most significant decreases were seen in France, the United Kingdom, and the United States, down 9.9, 15.2 and 8.4 percent, respectively.

Nuclear Energy Production

A total of 18 non-Communist countries produced electricity commercially from nuclear power. As of May 1980, these countries had a total of 198 reactor units, including 74 in the United States. The reactors had a total capacity of 120 million kilowatts, including 53 million kilowatts for those in the United States.

During May 1980 nuclear electricity generation from these 18 nations totaled 44.7 billion gross kilowatt-hours, a decrease of 4.8 percent from April 1980 and an increase of 20.9 percent from the May 1979 totals. Nuclear electricity generated in the United States during May 1980 was 19.6 billion gross kilowatt-hours, 0.1 percent less than in April 1980 and 24.1 percent above the May 1979 total. Generation by the remaining 17 nations was 25.1 billion gross kilowatt-hours in May 1980, down 8.1 percent from the April 1980 level and 18.6 percent above the May 1979 total.

International

Crude Oil Production for Major Petroleum Exporting Countries

		Algeria	Iraq	Kuwait[1]	Libya	Qatar	Saudi Arabia[1]	United Arab Emirates	Arab OPEC	Indo-nesia	Iran
		Thousand barrels per day									
1973	**AVERAGE**	**1,070**	**2,018**	**3,020**	**2,175**	**570**	**7,596**	**1,533**	**17,982**	**1,339**	**5,860**
1974	**AVERAGE**	**960**	**1,971**	**2,546**	**1,521**	**518**	**8,480**	**1,679**	**17,675**	**1,375**	**6,022**
1975	**AVERAGE**	**960**	**2,262**	**2,084**	**1,480**	**438**	**7,075**	**1,664**	**15,963**	**1,307**	**5,350**
1976	**AVERAGE**	**1,020**	**2,415**	**2,145**	**1,933**	**497**	**8,577**	**1,936**	**18,523**	**1,504**	**5,863**
1977	**AVERAGE**	**1,100**	**2,350**	**1,980**	**2,065**	**445**	**9,210**	**2,000**	**19,150**	**1,685**	**5,665**
1978	January	1,160	2,195	1,760	1,805	455	7,790	1,740	16,905	1,700	5,340
	February	1,160	2,495	1,760	1,815	485	8,380	1,880	17,975	1,700	5,580
	March	1,160	2,295	2,170	1,895	425	7,690	1,850	17,485	1,710	5,650
	April	1,160	2,495	2,030	1,885	515	8,050	1,750	17,885	1,680	5,660
	May	1,160	2,195	1,850	1,945	385	7,250	1,870	16,655	1,700	5,770
	June	1,160	2,295	1,965	2,015	455	7,590	1,840	17,320	1,620	5,680
	July	1,160	2,165	1,992	2,055	495	7,410	1,830	17,107	1,580	5,850
	August	1,160	2,365	2,400	2,045	545	7,180	1,830	17,525	1,620	5,860
	September	1,160	3,065	2,631	2,035	505	8,380	1,830	19,606	1,590	6,100
	October	1,160	2,765	2,150	2,085	515	9,310	1,840	19,825	1,590	5,540
	November	1,160	3,365	2,690	2,115	475	10,250	1,840	21,895	1,590	3,540
	December	1,160	3,065	2,239	2,105	585	10,400	1,830	21,384	1,600	2,420
	AVERAGE	**1,160**	**2,560**	**2,135**	**1,985**	**485**	**8,300**	**1,830**	**18,455**	**1,635**	**5,240**
1979	January	1,235	3,535	2,605	2,165	550	9,790	1,840	21,720	1,600	410
	February	1,235	3,535	2,695	2,150	555	9,780	1,835	21,785	1,615	760
	March	1,235	3,535	2,580	2,070	370	9,780	1,830	21,400	1,625	2,190
	April	1,235	3,535	2,535	2,060	550	8,790	1,755	20,460	1,605	3,800
	May	1,235	3,535	2,575	2,040	540	8,780	1,860	20,565	1,565	4,100
	June	1,235	3,535	2,575	2,015	455	8,780	1,870	20,465	1,610	3,950
	July	1,035	3,335	2,540	2,070	520	9,780	1,835	21,115	1,600	3,750
	August	1,035	3,335	2,515	2,080	535	9,770	1,835	21,105	1,595	3,600
	September	1,035	3,335	2,365	2,020	455	9,780	1,840	20,830	1,575	3,600
	October	1,035	3,335	2,365	2,030	490	9,725	1,785	20,765	1,570	3,930
	November	1,035	3,335	2,435	2,085	525	9,795	1,870	21,080	1,570	3,170
	December	1,035	3,335	2,240	2,090	545	9,775	1,875	20,895	1,565	3,000
	AVERAGE	**1,135**	**3,435**	**2,500**	**2,065**	**505**	**9,530**	**1,835**	**21,005**	**1,590**	**3,035**
1980	January†	1,150	3,400	2,140	2,100	495	9,785	1,740	20,810	1,565	2,295
	February†	1,150	3,400	2,335	2,100	460	9,780	1,740	20,965	1,550	2,500
	March†	1,150	3,400	2,090	2,000	500	9,790	1,695	20,625	1,575	2,350
	April†	1,000	3,300	1,570	1,750	500	9,765	1,705	19,590	1,580	2,200
	May†	1,000	3,300	1,525	1,750	480	9,775	1,765	19,595	1,550	1,700

[1]Includes about one-half of the production in the former Kuwait-Saudi Arabia Neutral Zone. In May 1980 production in this region amounted to approximately 545,000 barrels per day.
Additional footnotes on following page.
†Preliminary data.

International

Crude Oil Production for Major Petroleum Exporting Countries (continued)

		Nigeria	Vene-zuela	Total OPEC[2]	Canada	Mexico	United Kingdom	United States	China	USSR	Other[3]	World
						Thousand barrels per day						
1973	**AVERAGE**	**2,054**	**3,366**	**30,961**	**1,800**	**450**	**8**	**9,208**	**1,140**	**8,420**	**3,843**	**55,830**
1974	**AVERAGE**	**2,255**	**2,976**	**30,683**	**1,695**	**580**	**9**	**8,774**	**1,310**	**9,020**	**3,805**	**55,875**
1975	**AVERAGE**	**1,783**	**2,346**	**27,134**	**1,420**	**720**	**20**	**8,375**	**1,490**	**9,630**	**4,201**	**52,990**
1976	**AVERAGE**	**2,067**	**2,294**	**30,711**	**1,300**	**800**	**245**	**8,132**	**1,735**	**10,170**	**4,302**	**57,395**
1977	**AVERAGE**	**2,085**	**2,240**	**31,230**	**1,320**	**980**	**770**	**8,245**	**1,875**	**10,700**	**4,490**	**59,610**
1978	January	1,615	1,795	27,790	1,240	1,110	880	8,360	2,075	10,900	4,550	56,905
	February	1,555	1,635	28,885	1,310	1,110	950	8,377	2,075	11,000	4,598	58,305
	March	1,505	2,075	28,855	1,320	1,110	870	8,720	2,075	11,070	4,755	58,775
	April	1,675	2,245	29,560	1,100	1,150	980	8,818	2,075	11,100	4,722	59,505
	May	1,705	2,235	28,495	1,160	1,160	1,110	8,825	2,075	11,140	4,540	58,505
	June	1,875	2,335	29,260	1,500	1,180	1,110	8,832	2,075	11,120	4,718	59,795
	July	1,895	2,305	29,072	1,180	1,210	1,090	8,756	2,075	11,230	4,912	59,525
	August	2,045	2,115	29,595	1,310	1,250	1,100	8,758	2,075	11,280	4,957	60,325
	September	2,105	2,285	32,086	1,200	1,290	1,090	8,800	2,075	11,340	4,404	62,285
	October	2,095	2,275	31,725	1,390	1,310	1,160	8,820	2,095	11,440	4,835	62,775
	November	2,265	2,335	32,025	1,520	1,330	1,280	8,741	2,095	11,490	4,924	63,405
	December	2,365	2,335	30,504	1,540	1,380	1,350	8,662	2,095	11,470	5,134	62,135
	AVERAGE	**1,895**	**2,165**	**29,800**	**1,315**	**1,215**	**1,080**	**8,707**	**2,080**	**11,215**	**4,698**	**60,190**
1979	January	2,440	2,265	28,880	1,450	1,395	1,465	8,457	2,120	11,370	4,743	59,880
	February	2,430	2,345	29,380	1,575	1,400	1,505	8,498	2,120	11,370	4,622	60,470
	March	2,440	2,425	30,515	1,405	1,310	1,335	8,585	2,120	11,370	5,230	61,870
	April	2,420	2,385	31,095	1,510	1,400	1,460	8,533	2,120	11,510	4,882	62,510
	May	2,400	2,385	31,445	1,465	1,405	1,645	8,585	2,120	11,110	4,695	62,470
	June	2,420	2,245	31,115	1,465	1,440	1,745	8,409	2,120	11,460	4,766	62,520
	July	2,380	2,325	31,515	1,520	1,440	1,710	8,355	2,120	11,400	5,630	63,690
	August	2,185	2,325	31,230	1,450	1,460	1,640	8,699	2,120	11,560	5,171	63,330
	September	2,115	2,365	30,895	1,490	1,475	1,675	8,466	2,120	11,460	5,129	62,710
	October	2,135	2,370	31,180	1,545	1,515	1,615	8,568	2,120	11,630	5,152	63,325
	November	2,150	2,390	30,770	1,525	1,620	1,520	8,649	2,120	11,700	5,236	63,140
	December	2,150	2,410	30,430	1,545	1,660	1,545	8,587	2,120	11,700	5,033	62,620
	AVERAGE	**2,305**	**2,355**	**30,710**	**1,495**	**1,460**	**1,570**	**8,533**	**2,120**	**11,470**	**5,042**	**62,400**
1980	January†	2,155	2,280	29,535	1,515	1,720	1,600	8,648	2,120	11,560	5,027	61,725
	February†	2,160	2,200	29,805	1,475	1,725	1,660	8,696	2,120	11,550	5,004	62,035
	March†	2,155	1,995	29,100	1,475	1,830	1,670	R8,712	2,120	11,640	R5,038	61,585
	April†	2,100	2,045	27,965	1,390	1,885	1,510	8,670	2,120	11,630	R5,025	R60,195
	May†	2,200	2,150	27,645	1,470	1,910	1,600	8,720	2,120	11,700	5,170	60,335

United States geographic coverage: the 50 United States and District of Columbia.
[2]OPEC total includes production in Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, United Arab Emirates, Indonesia, Iran, Nigeria, Venezuela, Ecuador, and Gabon.
[3]Other is a calculated total derived from the difference between world production and the nations represented above.
†Preliminary data.
R = Revised data.
Note: Monthly data may not average to annual data.
Sources: • 1973–1978 annual data for OPEC nations: *OPEC Annual Statistical Bulletin.*
- 1978 and 1979 annual data and 1980 monthly data (except U.S.): Central Intelligence Agency, *International Energy Statistical Review.*
- 1978 and 1979 monthly data (except U.S.) are EIA estimates based on CIA revisions to annual data.
- 1973–1980 United States data: See sources on the last page of the Petroleum Section.

International

Petroleum Consumption for Major Free World Industrialized Countries[1]

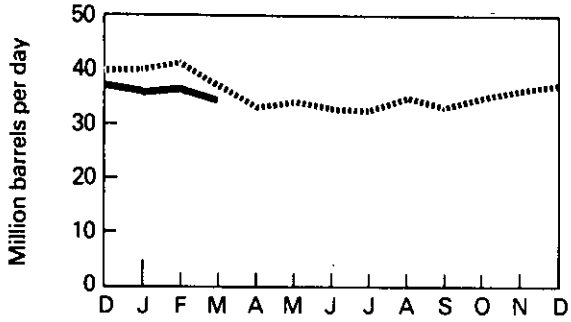
		Canada	France[2]	Italy	Japan	United Kingdom	United States	West Germany	Other IEA[3]	Total IEA[4]
					Thousand barrels per day					
1973	**AVERAGE**	**1,597**	**2,219**	**1,525**	**5,000**	**1,958**	**17,308**	**2,693**	**3,969**	**34,050**
1974	**AVERAGE**	**1,630**	**2,094**	**1,521**	**4,872**	**1,829**	**16,653**	**2,408**	**3,937**	**32,850**
1975	**AVERAGE**	**1,595**	**1,925**	**1,468**	**4,568**	**1,633**	**16,322**	**2,319**	**3,795**	**31,700**
1976	**AVERAGE**	**1,647**	**2,075**	**1,503**	**4,786**	**1,601**	**17,461**	**2,507**	**4,155**	**33,660**
1977	**AVERAGE**	**1,661**	**1,973**	**1,476**	**5,015**	**1,655**	**18,431**	**2,478**	**4,094**	**34,810**
1978	January	1,777	2,645	1,763	5,301	1,824	19,752	2,461	4,222	37,100
	February	1,956	2,598	1,906	5,981	1,899	20,900	3,014	4,844	40,500
	March	1,681	2,236	1,589	5,595	1,840	19,652	2,610	4,433	37,400
	April	1,561	2,044	1,339	4,849	1,791	17,747	2,577	4,136	34,000
	May	1,522	2,131	1,300	4,437	1,618	18,230	2,341	3,852	33,300
	June	1,622	1,687	1,354	4,502	1,499	18,260	2,611	3,952	33,800
	July	1,549	1,364	1,338	4,704	1,401	17,633	2,693	3,482	32,800
	August	1,680	1,325	1,197	4,857	1,447	18,639	2,338	4,042	34,200
	September	1,595	1,665	1,566	4,827	1,557	17,954	2,561	4,240	34,300
	October	1,749	1,997	1,573	4,847	1,676	18,417	2,633	4,305	35,200
	November	1,882	2,472	1,828	5,423	1,802	19,156	2,772	4,737	37,600
	December	1,915	2,800	1,889	6,125	1,846	19,944	2,578	4,903	39,200
	AVERAGE	**1,701**	**2,077**	**1,551**	**5,115**	**1,683**	**18,847**	**2,596**	**4,257**	**35,750**
1979	January	1,881	2,786	1,950	5,579	1,883	20,657	2,893	5,057	39,900
	February	2,019	2,731	1,912	6,009	2,067	21,145	2,708	5,140	41,000
	March	1,654	2,315	1,601	5,708	1,949	19,180	2,592	4,616	37,300
	April	1,605	2,150	1,447	5,009	1,703	17,319	2,590	4,227	33,900
	May	1,650	2,039	1,402	4,757	1,648	17,718	2,641	4,284	34,100
	June	1,737	1,663	1,312	4,709	1,517	17,675	2,613	4,037	33,600
	July	1,700	1,604	1,314	4,689	1,435	17,055	2,626	4,181	33,000
	August	1,775	1,553	1,311	4,894	1,488	18,184	2,617	4,431	34,700
	September	1,619	1,721	1,617	4,809	1,520	17,270	2,597	4,368	33,800
	October	1,852	2,007	1,807	4,771	1,652	18,124	2,846	4,348	35,400
	November	1,840	2,481	1,890	5,359	1,858	18,262	2,763	4,328	36,300
	December	1,877	2,278	1,744	5,800	1,606	18,783	2,489	4,701	37,000
	AVERAGE	**1,766**	**2,107**	**1,607**	**5,170**	**1,690**	**18,434**	**2,664**	**4,469**	**35,800**
1980	January†	1,812	R2,465	R1,778	5,258	1,769	18,509	2,665	4,409	36,200
	February†	1,946	R2,444	R1,864	5,721	1,620	18,721	2,393	4,635	36,900
	March†	1,734	1,983	1,656	5,430	1,581	R17,279	2,405	4,315	34,400
	April†	1,515	2,110	1,532	4,642	1,472	17,240	NA	NA	NA

United States geographic coverage: the 50 United States and District of Columbia.
[1]These data represent inland consumption, i.e., sales of petroleum products excluding refinery fuel, refinery losses, and ocean bunkers except for the United States, where it represents domestic products supplied.
[2]Not a member of the International Energy Agency (IEA).
[3]Other is a calculated total derived from the difference between total IEA consumption and the nations represented above.
[4]The 20 signatory nations of the International Energy Agency (IEA) are: Australia, Austria, Belgium, Canada, Denmark, West Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States. In 1979 Australia joined IEA. In an effort to maintain comparability within this time series, consumption data for Australia have been incorporated into the IEA total for all years.
†Preliminary data
R = Revised data.
NA = Not available.
Sources: • Central Intelligence Agency, "International Energy Statistical Review," 30 July 1980 (except United States).
• 1973–1980 United States data: See sources on last page of the Petroleum Section.
• IEA totals for most recent months are EIA estimates.

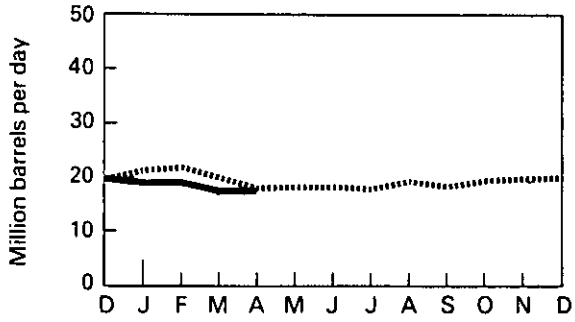
International

Petroleum Consumption

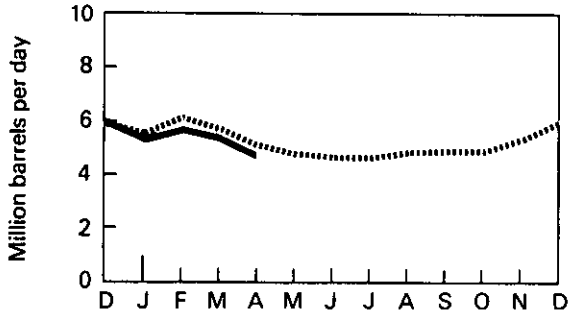
Total IEA



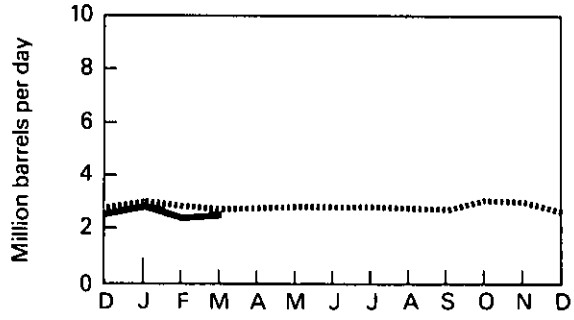
United States



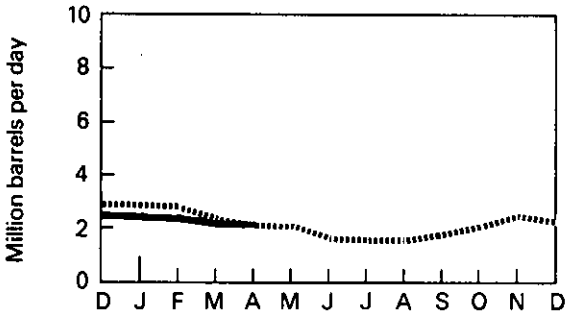
Japan*



West Germany



France**



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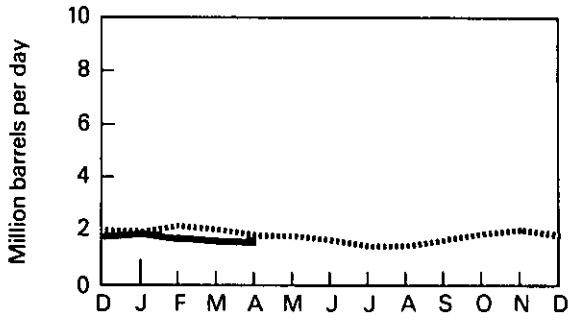
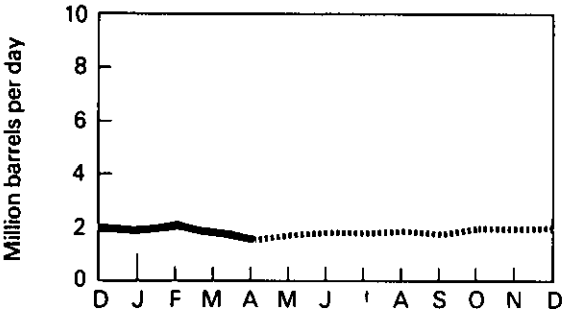
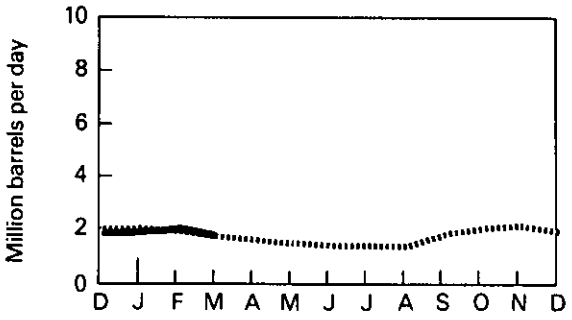


Canada



Italy***



*Excludes liquefied petroleum gases and condensates.

**Not a member of IEA.

***Principal products only.

1979

1980

International

Nuclear Power Generation by Non-Communist Countries[1,2]

		Argentina	Belgium	Canada	Finland	France	India	Italy	Japan	Nether-lands	Pakistan
						Million gross kilowatt-hours					
1973	**TOTAL**	**0**	**0**	**18,273**	**0**	**11,217**	**1,936**	**3,142**	**9,439**	**1,038**	**458**
1974	**TOTAL**	**1,035**	**121**	**15,410**	**0**	**14,703**	**2,475**	**3,410**	**18,097**	**3,349**	**584**
1975	**TOTAL**	**2,517**	**6,763**	**13,243**	**0**	**18,296**	**2,514**	**3,801**	**16,696**	**3,335**	**546**
1976	**TOTAL**	**2,572**	**10,011**	**18,016**	**0**	**15,764**	**3,194**	**3,797**	**36,689**	**3,872**	**487**
1977	**TOTAL**	**1,637**	**11,855**	**26,759**	**2,675**	**17,940**	**2,779**	**3,384**	**27,260**	**3,710**	**338**
1978	January	266	869	3,418	314	2,508	73	313	2,910	389	0
	February	241	344	2,840	141	2,529	77	266	2,287	337	32
	March	138	708	2,047	18	2,474	164	342	3,155	369	46
	April	261	1,103	2,809	308	2,659	169	394	3,165	375	31
	May	270	1,287	2,469	309	2,113	223	370	4,506	380	17
	June	163	1,199	2,696	236	1,882	184	359	4,695	368	33
	July	262	1,192	3,364	314	2,074	135	375	5,699	373	7
	August	271	1,277	2,427	310	2,401	140	471	5,705	375	0
	September	265	1,239	2,416	304	2,726	226	297	4,634	362	0
	October	271	1,237	2,759	318	3,083	298	382	4,311	147	25
	November	259	880	2,692	291	2,986	306	406	4,476	198	15
	December	229	1,158	2,988	318	3,112	268	454	5,318	387	23
	TOTAL	**2,896**	**12,490**	**32,925**	**3,179**	**30,547**	**2,264**	**4,429**	**50,861**	**4,060**	**229**
1979	January	266	838	3,816	320	3,831	356	401	5,471	390	23
	February	175	559	2,945	721	3,465	248	277	4,967	353	12
	March	181	786	2,909	467	3,192	215	241	4,160	383	0
	April	261	1,047	3,104	623	3,151	218	290	3,756	223	0
	May	254	1,293	2,717	520	3,294	239	200	3,864	343	0
	June	229	1,161	3,194	394	2,963	285	132	4,570	365	0
	July	168	992	3,848	491	2,604	166	0	5,862	373	0
	August	275	558	2,820	391	2,341	125	122	6,724	254	0
	September	142	792	2,956	709	3,094	248	169	5,238	362	0
	October	247	1,119	3,316	780	3,808	314	203	6,186	267	0
	November	255	964	2,909	561	3,563	304	227	5,353	37	0
	December	239	1,263	3,849	692	4,613	209	365	5,852	140	0
	TOTAL	**2,692**	**11,370**	**38,383**	**6,671**	**39,920**	**2,927**	**2,627**	**62,003**	**3,489**	**35**
1980	January	264	1,180	3,582	822	5,519	215	156	8,013	381	0
	February	126	1,011	3,476	765	5,324	107	441	7,379	365	0
	March	0	1,006	3,678	790	5,058	163	523	7,995	385	0
	April	68	499	3,193	754	5,041	273	391	5,637	343	0
	May	179	687	2,494	314	4,186	294	294	6,033	323	0
	TOTAL (Year-to-date)	**637**	**4,383**	**16,422**	**3,445**	**25,128**	**1,053**	**1,804**	**35,057**	**1,797**	**0**

Totals may not equal sum of components due to independent rounding.
[1]Figures are for gross electrical generation as opposed to net electrical generation. Net figures are generally less than gross figures by about 5 percent, which represents the energy consumed by the generating plants themselves.
[2]In some cases, monthly figures are adjusted to reflect amended cumulative totals from *Nucleonics Week*.
Source: • *Nucleonics Week.*

International

Nuclear Power Generation by Non-Communist Countries[1,2] (continued)

		South Korea	Spain	Sweden	Switzer-land	Taiwan	United Kingdom	West Germany	Non-Communist World Excluding U.S.	United States	Total Non-Communist World
						Million gross kilowatt-hours					
1973	**TOTAL**	**0**	**6,545**	**2,111**	**6,192**	**0**	**27,996**	**12,561**	**100,908**	**87,440**	**188,348**
1974	**TOTAL**	**0**	**7,223**	**1,647**	**7,037**	**0**	**34.020**	**11,154**	**120,265**	**119,919**	**240,184**
1975	**TOTAL**	**0**	**7,544**	**12,021**	**7,721**	**0**	**30,508**	**21,672**	**147,177**	**181,808**	**328,985**
1976	**TOTAL**	**0**	**7,555**	**15,992**	**7,900**	**0**	**36,799**	**24,524**	**187,172**	**201,570**	**388,742**
1977	**TOTAL**	**71**	**6,525**	**19,890**	**8,070**	**99**	**38,043**	**35,807**	**206,842**	**262,644**	**469,486**
1978	January	223	685	2,618	797	173	3,383	3,095	22,034	27,361	49,395
	February	223	633	2,265	722	54	3,513	3,348	19,852	23,229	43,081
	March	223	663	2,530	791	136	4,132	3,871	21,807	23,793	45,600
	April	223	627	1,989	731	151	3,236	2,666	20,897	18,409	39,306
	May	223	113	1,543	736	205	2,361	3,134	20,259	21,262	41,521
	June	223	504	1,668	509	171	3,099	2,230	20,219	23,329	43,548
	July	223	761	1,143	531	299	2,455	2,090	21,297	26,319	47,616
	August	245	731	996	421	340	2,556	2,669	21,335	27,374	48,709
	September	282	708	1,796	734	316	2,692	2,194	21,191	23,464	44,655
	October	237	742	2,316	799	211	2,617	2,097	21,850	24,417	46,267
	November	0	734	2,307	772	171	2,891	2,368	21,752	26,343	48,095
	December	0	748	2,608	805	443	3,707	2,717	25,283	27,364	52,647
	TOTAL	**2,324**	**7,649**	**23,781**	**8,349**	**2,670**	**36,642**	**32,478**	**257,772**	**292,664**	**550,436**
1979	January	272	549	2,326	804	445	3,787	3,866	27,761	29,164	56,925
	February	354	622	1,973	725	306	3,811	3,045	24,558	27,307	51,865
	March	324	706	2,679	796	521	3,969	3,300	24,829	25,517	50,346
	April	262	637	1,449	774	565	3,210	4,674	24,244	19,320	43,564
	May	250	216	1,268	714	482	2,265	3,243	21,162	15,808	36,970
	June	300	360	1,003	827	645	3,150	3,048	22,626	17,087	39,713
	July	337	444	1,008	981	691	2,731	3,094	23,790	22,481	46,271
	August	384	663	1,099	826	646	2,409	2,667	22,304	25,732	48,036
	September	386	425	1,370	1,234	644	3,116	2,441	23,326	23,352	46,678
	October	282	676	2,048	1,288	509	2,771	3,456	27,270	22,497	49,767
	November	0	719	2,302	1,418	316	3,279	3,642	25,849	20,520	46,369
	December	0	683	2,515	1,461	559	4,070	3,874	30,384	21,933	52,317
	TOTAL	**3,152**	**6,700**	**21,039**	**11,848**	**6,329**	**38,568**	**40,350**	**298,103**	**270,718**	**568,821**
1980	January	110	719	2,512	1,505	859	3,704	4,450	33,991	21,111	55,102
	February	1	333	2,423	1,197	685	3,380	3,940	30,952	20,818	51,770
	March	351	426	2,333	1,278	799	4,217	2,954	31,956	21,218	53,174
	April	385	355	1,865	1,444	743	2,693	3,625	27,309	19,631	46,940
	May	379	368	1,648	1,399	436	2,559	3,501	25,094	19,612	44,706
	TOTAL (Year-to-date)	**1,226**	**2,202**	**10,781**	**6,823**	**3,522**	**16,553**	**18,469**	**149,302**	**102,390**	**251,692**

United States geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
[1]Figures are for gross electrical generation, as opposed to net electrical generation. Net figures are generally less than gross figures by about 5 percent, which represents the energy consumed by the generating plants themselves.
[2]In some cases monthly figures are adjusted to reflect amended cumulative totals from *Nucleonics Week*.
Source: • *Nucleonics Week*.

Definitions

Anthracite

A hard, black lustrous coal containing a high percentage of fixed carbon and a low percentage of volatile matter. Often referred to as hard coal. Includes metaanthracite and semianthracite. Conforms to ASTM Specification D388, for anthracite.

Average Retail Selling Price, Motor Gasoline

The average price of sales of motor gasoline to retail customers at service stations.

Base Production Control Level

(See Crude Oil)

Bituminous Coal

A coal which is high in carbonaceous matter, having a volatility greater than anthracite coal and a calorific value greater than lignite. Often referred to in the United States as soft coal. Includes subbituminous coal and conforms to ASTM Specification D388 for bituminous and subbituminous coal.

Ceiling Price

The maximum permissible selling price, prior to February 1, 1976, for a particular grade of domestic crude oil in a particular field is the May 15, 1973, posted price, plus $1.35 per barrel.

Coke (Coal)

Bituminous coal from which constituents have been driven off by heat so that the fixed carbon and the ash are fused together. It is primarily used in blast furnaces for smelting ores, especially iron ore.

Crude Oil

A mixture of hydrocarbons that is in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Statistically, crude oil reported at refineries, in pipelines, at pipeline terminals, and on leases may include lease condensate.

Base Production Control Level (BPCL): Prior to February 1, 1976, BPCL means the monthly total number of barrels of crude oil produced and sold from a property in 1972 or the average monthly production as defined in Section 212.72 of the Federal Energy Guidelines. After January 31, 1976, BPCL means either the daily average number of barrels produced and sold in 1975 multiplied by the number of days in the month (in 1972) or the daily number of barrels of crude oil produced and sold from the property in 1972 (leap year) multiplied by the number of days of the month (in 1972). A detailed explanation of BPCL and adjustments thereto may be found in Section 212.72 of the Federal Energy Guidelines.

A. Lower Tier (Old) Crude Oil: (1) Prior to February 1, 1976, the total number of barrels of domestic crude oil produced and sold from a property in a specific month, less the total number of barrels of new crude oil for that property in that month, and less the total number of barrels of *released* crude oil for that property in that month. (2) Effective February 1, 1976, the total number of barrels of domestic crude oil produced and sold from a property in a specific month, less the total number of barrels of new crude oil for that property in that month.

B. Upper Tier (New) Crude Oil: With respect to a specific property, (1) prior to February 1, 1976, the total number of barrels of domestic crude oil produced and sold in a specified month, less (a) the base production control level for that month, and less (b) the current cumulative deficiency; (2) effective February 1, 1976, the total number of barrels of domestic crude oil produced and sold in a specific month less (a) the property's base production control level for that month and less (b) the current cumulative deficiency since February 1, 1976; and (3) that the total number of barrels of domestic crude oil shall not in either period include any number of barrels not certified as new crude oil pursuant to the provisions of 10 CFR 313.131(a)(1) within the consecutive 2-month period immediately succeeding the month in which the crude oil is produced and sold except where such recertification is explicitly required or permitted by DOE order, interpretation, or ruling.

C. Decontrolled Oil: Crude oil (exclusive of Stripper oil, Naval Petroleum Reserves oil, Newly Discovered, and Incremental Tertiary oil) which has been explicitly exempted by rule or the exception process from Federal crude oil price controls.

1. Heavy Crude Oil: Crude oil produced and sold from a property whose production of crude oil in June 1979 (or if there was no such production sold in that month, the last preceding month in which there was such production sold) had a weighted average gravity of 16° API or less corrected to 60° F based on the average gravity reported on the run tickets. Effective December 29, 1979, regulations redefined heavy crude oil as 20° API gravity, or less.

2. Incremental Tertiary Oil: Oil which is produced under a qualified tertiary enhanced recovery project certified by the Economic Regulatory Administration, DOE, and which is certified as "incremental tertiary" crude oil in accordance with 10 CFR 212.78.

3. Marginal Property Oil: Oil which is produced from a property which has qualified as a "marginal" property under the average well-completion depth and daily production qualification thresholds of 10 CFR 212.72 and which has been released for sale at upper tier prices.

4. Newly Discovered Crude Oil: Crude oil sold after May 31, 1979, which was produced from: (1) an area in the Outer Continental Shelf for which the

lease was entered into on or after January 1, 1979, and from which there was no production in calendar year 1978; or (2) an onshore property from which no crude oil was produced in calendar year 1978.

5. Stripper Oil: Crude oil which is produced from property whose average daily production per well (excluding condensate recovered in nonassociated natural gas production) did not exceed 10 barrels per day during any preceding consecutive 12-month period beginning after December 31, 1972. Stripper oil was exempt from price controls beginning September 1, 1976.

6. Tertiary Incentive Oil: Price-controlled crude oil which has been released for sale at the market-clearing prices to provide front-end money to initiate or expand qualified tertiary enhanced recovery projects and which has been certified as "tertiary incentive" oil in accordance with 10 CFR 212.78.

Crude Oil Domestic Production

Domestic crude oil production is measured at the wellhead and includes lease condensate, which is a natural gas liquid recovered from lease separators or field facilities.

Crude Oil Entitlement Value

The average value a refiner receives from the entitlement program for each incremental barrel of imported crude oil. It is calculated by multiplying the entitlement price by the National Old Oil Supply Ratio for November 1974 through January 1976, and by the National Domestic Crude Oil Supply Ratio for February 1976 forward.

Crude Oil Refinery Input

Total crude oil (including lease condensate) input to crude oil distillation units and other units for processing.

Crude Oil Stocks

Stocks of crude oil and lease condensate held at refineries, in pipelines, at pipeline terminals, and on leases.

Distillate Fuel Oil

A light fuel oil distilled off during the refining process. Included are products known as No. 1 and No. 2 heating oils, diesel fuels, and No. 4 fuel oil, which conform to either ASTM Specification D396 or D975. These products are used primarily for space heating, on- and off-highway diesel engine fuel (including railroad engine fuel), and electric power generation.

Distillate Fuel Oil Production

Total production of distillate fuel by refineries, measured at the refinery outlet. Relatively small quantities of distillate fuel are produced at natural gas processing plants, but these quantities are not included.

Electricity Production

Production at electric utilities only. Does not include industrial electricity generation.

Entitlement Position

The monthly entitlement position of a refiner indicates whether he bought or sold entitlements in that month. An entitlement is the right to process "deemed old oil," which is the sum of a refiner's receipts of "old" oil and a fraction of his receipts of "upper tier" crude oil. This fraction is set monthly by the Economic Regulatory Administration (ERA). A refiner must purchase entitlements for the amount of his "deemed old oil" receipts in excess of the national domestic crude oil supply ratio (NDCOSR). The NDCOSR, as calculated by ERA, reflects the differences in costs to refiners of "old" oil, "upper tier" crude oil, and imported crude oil.

Entitlement Price

The price of an entitlement, fixed by ERA, is the exact differential as reported for the month between the weighted average delivered cost per barrel to refiners of both imported crude oil and stripper crude oil, and the weighted average delivered cost per barrel to refiners of "old oil".

Exploratory Well

A well drilled to 1.) find and produce oil or gas in an unproved area; 2.) find a new reservoir in a field previously found to be productive of oil or gas in another reservoir; or 3.) extend the limit of a known oil or gas reservoir.

Full Serve

Motor vehicle services are provided by an attendant, such as: pumping gas, washing windows, checking under the hood, checking tire pressure, etc.

Imports

Receipts into the 50 States and the District of Columbia of foreign goods (including receipts of goods from U.S. territories and U.S. Foreign Trade Zones) which are classified by customs officials as "imports for consumption" or "withdrawals from bonded warehouse for consumption," including withdrawals from bonded warehouse for military offshore use and for bunkering of vessels or aircraft engaged in international commerce. Included are imports for the Strategic Petroleum Reserve. Excluded are receipts into bonded warehouse and into U.S. territories and U.S. Foreign Trade Zones.

Jet Fuel

Includes both naphtha-type and kerosene-type jet fuel meeting standards for use in aircraft turbine engines or

meeting ASTM Specification D1655. Although most jet fuel is used in aircraft, some is used for other purposes, such as fuel for gas turbines to produce electricity.

Landed Cost

Includes the purchase price at the foreign port (or U.S. land border), transportation and insurance costs, wharfage and demurrage, brokerage fees, import fees and duties, license (ticket) fees, and transportation costs to the refinery. Averages computed based on major importers which account for an estimated 90 to 95 percent of total crude oil imports. Coverage includes United States and its territories.

Lease Condensate

A natural gas liquid recovered from gas well gas (including gas produced from crude oil reservoirs) in lease separators and, in some instances, field facilities. It consists primarily of pentanes and heavier hydrocarbons. Generally, it is blended with crude oil for refining.

Line Miles of Seismic Exploration

The distance along the earth's surface that is covered by seismic traverses.

Lignite

A brownish-black coal of low rank with high inherent moisture and volatile matter. It is also referred to as brown coal. It conforms to ASTM Specification D388 for lignite and is used almost exclusively for electric power generation.

Lower Tier Crude Oil

(See Crude Oil, Part A.)

Major Brand

Lundberg Survey, Inc., defines major brand as an integrated company that produces, refines, transports, and markets in Interstate Commerce under its own brand(s) in 10 or more states.

Maximum Dependable Capacity

Represents the dependable main-unit net capacity of domestic reactors and generally varies throughout the year because the unit efficiency varies with seasonal cooling water temperature variations. Usually maximum dependable capacity is the highest net dependable output of the turbine generator during the most restrictive seasonal conditions (usually summer).

Motor Gasoline

A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark ignition engines. Included are leaded and unleaded products and all refinery products listed in ASTM Specification D439.

Motor Gasoline Production

Total production of motor gasoline by refineries, measured at the refinery outlet. Relatively small quantities of motor gasoline are produced at natural gas processing plants, but these quantities are not included.

Motor Gasoline, Regular Grade

Motor gasoline that has an antiknock designation of 2 for unleaded gasoline and 3 for leaded gasoline.

Motor Gasoline, Premium Grade

Volatile hydrocarbon mixture suitable for operation of an internal combustion engine and customarily marketed as "ethyl," "super," or equivalent classification.

National Domestic Crude Oil Supply Ratio

Old oil receipts adjusted for upper tier receipts, small refiner bias, and other minor adjustments, divided by crude runs to stills adjusted for residual fuel entitlements.

Natural Gas

A mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions.

Natural Gas Liquids

Those portions of reservoir gas which are liquefied at the surface in lease separators, field facilities, or natural gas processing plants. Natural gas liquids include natural gas plant liquids and lease condensate.

Natural Gas Plant Liquids

Those portions of natural gas that are liquefied at natural gas processing plants, including natural gasoline, fractionating, and cycling plants, and, in some instances, field facilities. Products obtained include ethane, liquefied petroleum gases (propane, butanes, propane-butane mixtures, ethane-propane mixtures), isopentane, natural gasoline, unfractionated streams, plant condensate and other minor quantities of finished products such as motor gasoline, special naphthas, jet fuel, kerosene and distillate fuel oil.

Natural Gas Production (Dry)

Derived by subtracting extraction loss from marketed production. It represents the amount of domestic natural gas production that is available to be marketed and consumed as a gas.

New Crude Oil

(See Crude Oil, Part B.)

Old Crude Oil

(See Crude Oil, Part A.)

Petroleum

A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, refined petroleum products, natural gas plant liquids, and nonhydrocarbon compounds blended into finished petroleum products.

Petroleum Coke

A solid residue; the final product of the condensation process in cracking. It consists of aromatic hydrocarbons very poor in hydrogen. Calcination of petroleum coke can yield almost pure carbon or artificial graphite suitable for production of carbon or graphite electrodes, structural graphite, motor brushes, dry cells and similar productions.

Petroleum Products

Products obtained from the processing of crude oil, unfinished oils, natural gas liquids and other miscellaneous hydrocarbon compounds. Includes aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, ethane, liquefied petroleum gases, petrochemical feedstocks, special naphthas, lubricants, paraffin wax, petroleum coke, asphalt, road oil, still gas and other miscellaneous products.

Property

Prior to August 26, 1976, a property was defined as the right to produce domestic crude oil, which arises from a lease or from a fee interest. This definition was interpreted to apply only to a surface lease. In August 1976 the definition of a property was changed so that a producer may treat as a separate property each separate and distinct producing reservoir subject to the same right to produce crude oil, provided that such reservoir is recognized by the appropriate governmental regulatory authority as a producing formation that is separate and distinct from, and not in communication with any other producing formation. Although this new definition was not implemented until August 25, 1976, it was made effective retroactively to February 1, 1976. (F.R. 36171, August 26, 1976.)

Refined Petroleum Product Supplied

Total refined petroleum product supplied is the sum of each refined petroleum product supplied. For each product the amount supplied is derived by summing production, imports, and withdrawals from primary stocks and subtracting exports.

Refiner Acquisition Cost

The cost to the refiner, including transportation and fees, of crude oil. The composite cost is the average of domestic and imported crude oil costs, and represents the amount of crude oil cost which refiners may pass on to their customers.

Residual Fuel Oil

The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as No. 5 and No. 6 fuel oil that conform to ASTM Specification D396, heavy diesel oil, Navy Special Oil, Bunker C oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.

Rotary Rig

A machine, used for drilling wells, that employs a rotating tube attached to a bit for boring holes through rock.

Self Serve

Motor vehicle services are not provided by attendants.

Strategic Petroleum Reserves

A plan developed to reduce the impact of interruption of imports of pertroleum. Congress enacted legislation to establish a Strategic Petroleum Reserve in Title I, Part B of the Energy Policy and Conservation Act of 1975, Public Law 94–163.

Startup Test Phase of Nuclear Powerplant

A nuclear powerplant that has been licensed by the Nuclear Regulatory Commission to operate, but that is in the initial testing phase during which production of electricity may not be continuous. In general, when the electric utility is satisfied with the plant's performance, it formally accepts the plant from the manufacturer, and places it in "commercial operation" status. A request is then submitted to the appropriate utility rate commission to include the powerplant in the rate base calculation.

Stocks (Refined Petroleum Product)

Stocks held at refineries, bulk terminals, and pipelines (including pipeline fill) where the storage capacity exceeds 50,000 barrels. Stocks held at natural gas processing plants are not included as well as stocks held in secondary storage facilities, such as those held by jobbers, dealers, independent marketers, and consumers.

Synthetic Natural Gas (SNG)

A product resulting from the manufacture, conversion, or reforming of petroleum hydrocarbons which may be easily substituted for or interchanged with pipeline quality natural gas.

Unaccounted for Crude Oil

Represents the arithmetic difference between the indicated demand for crude oil and the total disposition of crude oil. Indicated demand is the sum of crude oil production and imports less changes in crude oil stocks. Total disposition of crude oil is the sum of refinery input, exports of crude oil, crude oil burned as fuel, and crude oil losses.

Unrecouped Costs

Costs which have not been recovered in the current month's product prices but which have been "banked" for later use.

Upper Tier Crude Oil

(See Crude Oil, Part B.)

Well

A hole drilled for the process of finding or producing crude oil or natural gas or providing services related to the production of crude oil or natural gas. Wells are classified as oil wells, gas wells, dry holes, stratigraphic tests, or service wells.

Explanatory Notes

1. Domestic production of energy includes production of coal (anthracite, bituminous, and lignite), crude oil and lease condensate, natural gas plant liquids, natural gas (dry), electric utility and industrial production of hydropower, and electricity generated from nuclear power, geothermal power, and wood and waste. The volumetric data were converted to approximate heat contents (Btu values) of these energy sources using conversion factors listed in Thermal Conversion Factors.

2. Domestic consumption of energy includes consumption of coal (anthracite, bituminous, and lignite), natural gas (dry), refined petroleum products supplied, electric utility and industrial production of hydropower, net imports of electricity produced from hydropower, net imports of coke made from coal, and electricity generated from nuclear power, geothermal power, and wood and waste. Approximate heat contents (Btu values) were derived using conversion factors listed in Thermal Conversion Factors.

3. U.S. energy imports include imports of bituminous coal, crude oil (including crude oil imported for the Strategic Petroleum Reserve), refined petroleum products, natural gas (dry), electricity produced from hydropower, and coke made from coal.

4. U.S. energy exports include bituminous coal and anthracite, crude oil, refined petroleum products, natural gas (dry), electricity produced from hydropower, and coke made from coal.

5. The Residential and Commercial Sector consists of housing units, non-manufacturing business establishments (e.g., wholesale and retail businesses), health and educational institutions, and government office buildings. The Industrial Sector is made up of construction, manufacturing, agriculture, and mining establishments. The Transportation Sector consists of both private and public passenger and freight transportation, as well as government transportation, including military operations. The Electric Utilities Sector is made up of privately- and publicly-owned establishments which generate electricity primarily for resale.

6. Degree-days relate energy consumption to outdoor air temperature. Cooling degree-days are defined as deviations of the mean daily temperature at a sampling station above a base temperature equal to 65° F by convention. Heating degree-days are deviations of the mean daily temperature below 65° F. For example, if a weather station recorded a mean daily temperature of 78° F, cooling degree-days for that station would be 13 (and heating degree-days, 0). A weather station recording a mean daily temperature of 40° F would report 25 heating degree-days (and 0 cooling degree-days).

There are two degree-day data bases maintained by the National Oceanic and Atmospheric Administration. Weekly degree-day information is based on mean daily temperatures recorded at about 200 major weather stations around the country. Monthly data are based on readings at more than 8,000 weather stations. The temperature information recorded at these weather stations is used to calculate statewide degree-day averages based on population. The State figures are then aggregated into Petroleum Administration for Defense (PAD) Districts and into the national average, also using a population weighting method.

Weekly weather reports are available much sooner than the monthly reports, and therefore the degree-day information published in the *Monthly Energy Review* is normally derived from the weekly source.

7. Domestic products supplied figures for natural gas liquids (NGL) in this publication do not include amounts utilized by refineries for blending purposes in the production of finished products, principally gasoline. Use of NGL at refineries is reported in a separate column. The production series cited in this publication shows both NGL produced at processing plants and liquefied gases produced at refineries (LRG). NGL produced at refineries is extracted from crude oil and hence, to avoid double counting, should not be included in calculations of total U.S. production of petroleum liquids. The stock series shown in this volume includes natural gas liquids held as stocks at both natural gas processing plants and at refineries and LRG held at refineries.

8. Domestic consumption of natural gas includes the quantities sold to consumers plus the gas used for plant and pipeline fuel, after the natural gas liquids have been extracted. All monthly consumption data are estimated. Marketed production of natural gas includes gross withdrawals from the ground less the quantities used for repressuring and the amount vented and flared, before the natural gas liquids have been extracted. Dry production of natural gas is the quantity remaining after the natural gas liquids have been extracted.

9. The Federal Energy Administration and Federal Power Commission began the coordinated collection and compilation of monthly underground storage information from all underground storage operators in the United States in October 1975. Initial storage information reported was for the month of September 1975. Comparable monthly information for total U.S. storage operations is not available for prior periods.

The total gas in storage is the total volume of gas (base gas plus working gas) in storage reservoirs as of the end of the month. Base gas is the volume of gas, including all native gas in place at the time of conversion to storage, needed as a permanent inventory to maintain adequate reservoir pressures and deliverability rates throughout the withdrawal season. Base gas includes the volumes which will not be recoverable upon termination of storage operations. Working gas is the volume of gas above the designated base gas level available for withdrawal.

of the coal produced is transported by rail. Production data are estimated by EIA from Association of American Railroads reports of carloadings.

Bituminous coal and lignite consumption is calculated by Energy Information Administration (EIA) from information provided by the Federal Energy Regulatory Commission, Department of Commerce, and reports from selected manufacturing industries and retailers.

Domestic consumption data in this series, therefore, approximate actual consumption. This is in contrast to domestic demand reported for petroleum products, which is calculated value representing total disappearance from primary supplies.

The data sources used to compute the monthly coal consumption estimates from 1978 forward for the "Other Industrial" (i.e. Industrial except coke plants) sector are:

(a) Form EIA–3, "Monthly Fuel Consumption Report—Manufacturing Plants."
(b) Form EIA–6, "Bituminous Coal and Lignite Distribution Report."

The basic assumption used in deriving a quarterly estimate for coal consumption is that consumption is equal to beginning stocks plus receipts minus ending stocks. In terms of an equation, consumption can be expressed as

$$C = S_B + R - S_E, \quad (1)$$

where

S_B = beginning stocks
R = receipts
S_E = ending stocks.

The change in stocks ($S_B - S_E$) can be denoted by ΔS. From equation (1), consumption is

$$C = \Delta S + R. \quad (2)$$

The Form EIA–6 provides complete coverage of the "Other Industrial" sector. The quarterly receipts are obtained from this form.

The Form EIA–3 does not provide total coverage of the "Other Industrial" sector, however it does contain stock change information. The impact of the stock change in the portion of the sector that is not covered by the Form EIA–3 is not substantial.

Given the estimated quarterly consumption for the "Other Industrial" sector (C), the monthly consumption for the sector (C_M) can be estimated for each month in the quarter as

$$C_M = (C_{M3}/C_3) \bullet C \quad (3)$$

where

C_{M3} = the monthly consumption in the "Other Industrial" sector as reported on Form EIA–3.
C_3 = the quarterly consumption in the "Other Industrial" sector as reported on Form EIA–3.

Equation (3) insures that a) the monthly consumption estimates (C_M) sum to C over the quarter and b) the estimated seasonality for the C_M's is the same as that for the C_{M3}'s.

11. The units used to describe power generation at nuclear plants are based on the watt, which is a unit of power. (Power is energy produced per unit of time.) As with fossil-fueled plants, nuclear plants have three design power ratings. The normal rating (expressed in thermal megawatts) is the rate of heat production by the reactor core. The gross electrical rating (expressed in electrical megawatts, MWe) is the generator capacity at the stated thermal rating of the plant. The net electrical rating (also expressed in MWe) is the power available as input to the electrical grid after subtracting the power needed to operate the plant. (A typical nuclear plant needs 5 percent of its generated electricity for its own operation.)

The electrical energy produced by a plant is expressed in kilowatt-hours (kWh). This enables a more direct comparison to design capacity and to previous months' performances.

12. The actual domestic average price represents the average price at which all domestic crude oil, is purchased. The imputed domestic average price is the average price used to establish ceiling prices for domestic crude oil in accordance with the provisions of the Energy Conservation and Production Act. It is calculated as the weighted average of lower tier, upper tier, and an imputed stripper crude oil price. The imputed stripper crude oil price is equal to $11.63 per barrel plus the difference between the composite price of crude oil in August 1976 (excluding stripper oil) and the composite price of crude oil in the month of measurement (excluding stripper oil).

13. The refiner acquisition cost of domestic crude oil is the price paid by refiners for domestic crude oil and natural gas plant liquids and includes transportation costs from the wellhead to the refinery. The refiner acquisition cost of imported crude oil is the average landed cost of imported crude oil to the refiner and represents the amount which may be passed on to the consumer. It incorporates transportation costs and fees (including the supplemental import fees) and any other costs incurred in purchasing and shipping crude oil to the United States.

14. Prior to February 1976, the domestic crude oil wellhead price represented an estimate of the average of posted prices; after February 1976, the wellhead price represents an average of first sale prices. For the 2-year period January 1974 through January 1976, the old oil price at the wellhead was originally estimated to be $5.25 per barrel based on representative postings. This estimate was revised in July 1976 after a survey of crude oil purchasers was implemented and more complete data became available. Estimates of the

average old oil price given in the table for months prior to February 1976 are based on prices for old oil reported on new leases, and were not derived from a statistically valid sample of old oil leases.

15. FOB literally means "Free on Board." It denotes a transaction whereby the seller makes the product available with an agreement on a given port at a given price; it is the responsibility of the buyer to arrange for the transportation and insurance.

16. The landed cost of imported crude oil from selected countries does not represent the total cost of all imported crude. Prior to March 1975, imported crude costs to U.S. company-owned refineries in the Caribbean were not included in the landed cost, and costs of crude oil from countries which export only small amounts to the United States were also excluded. Beginning in March 1975, however, coverage was expanded to include U.S. company-owned refineries in the Caribbean. Landed costs do not include supplemental fees.

17. The survey and method used to derive data for March 1976 forward differ from those used for prior months. Data for January 1974 through February 1976 are derived from a survey of distributors, and prices and margins are computed as unweighted averages. The average distributor purchase price and average dealer margin for March 1976 forward are for distributors only, whereas the average selling price includes both refiners and distributors. Data for March 1976 forward are computed as sales weighted averages.

18. The U.S. Department of Energy Regions are defined as follows:

Region 1 —Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island;
Region 2 —New York, New Jersey, Puerto Rico, Virgin Islands;
Region 3 —Pennsylvania, Maryland, West Virginia, Virginia, District of Columbia, Delaware;
Region 4 —Kentucky, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida, Canal Zone;
Region 5 —Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio;
Region 6 —Texas, New Mexico, Oklahoma, Arkansas, Louisiana;
Region 7 —Kansas, Missouri, Iowa, Nebraska;
Region 8 —Montana, North Dakota, South Dakota. Wyoming, Utah, Colorado;
Region 9 —California, Nevada, Arizona, Hawaii, Trust Territory of the Pacific Islands, American Samoa, Guam;
Region 10—Washington, Oregon, Idaho, Alaska.

19. The weighted average for all fossil fuels includes peaking fuels and distillate fuel oil delivered to utilities for the total United States, whereas the regional and total United States breakdown for residual fuel oil prices represents all heavy fuel oil prices.

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Conversion Factors

Thermal Conversion Factors

Approximate Heat Content of Various Fuels		1973	1974	1975	1976	1977	1978–79–80
Anthracite							
Production	Btu/short ton	23,170,000	22,560,000	23,390,000	22,770,000	23,180,000	23,520,000
Imports and Exports	Btu/short ton	25,400,000	25,400,000	25,400,000	25,400,000	25,400,000	25,400,000
Consumption, average	Btu/short ton	22,710,000	21,950,000	21,740,000	22,150,000	22,710,000	22,970,000
Electric utility consumption	Btu/short ton	17,920,000	17,200,000	17,060,000	17,530,000	17,240,000	17,100,000
Non-utility consumption	Btu/short ton	24,340,000	23,750,000	23,650,000	23,840,000	24,990,000	25,170,000
Bituminous coal and lignite							
Production	Btu/short ton	24,010,000	23,730,000	23,200,000	23,150,000	22,700,000	22,430,000
Imports	Btu/short ton	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000
Exports	Btu/short ton	27,000,000	27,000,000	27,000,000	27,000,000	27,000,000	27,000,000
Consumption, average	Btu/short ton	23,650,000	23,070,000	22,800,000	22,750,000	22,330,000	22,140,000
Electric utility consumption	Btu/short ton	22,260,000	21,800,000	21,660,000	21,690,000	21,480,000	21,280,000
Non-utility consumption	Btu/short ton	26,840,000	26,120,000	25,810,000	25,870,000	25,130,000	25,070,000
Coal Coke	Btu/short ton	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000
Crude petroleum[1]							
Production	Btu/barrel	5,800,000	5,800,000	5,800,000	5,800,000	5,800,000	5,800,000
Imports	Btu/barrel	5,817,000	5,827,000	5,821,000	5,808,000	5,810,000	5,802,000
Exports	Btu/barrel	5,800,000	5,800,000	5,800,000	5,800,000	5,800,000	5,800,000
Crude petroleum and products							
Imports, average	Btu/barrel	5,897,000	5,884,000	5,858,000	5,856,000	5,834,000	5,839,000
Exports, average	Btu/barrel	5,752,000	5,774,000	5,748,000	5,745,000	5,797,000	5,808,000
Petroleum products							
Consumption, average	Btu/barrel	5,515,000	5,504,000	5,494,000	5,504,000	5,526,000	5,519,000
Residential and Commercial	Btu/barrel	5,498,000	5,494,000	5,496,000	5,517,000	5,522,000	5,530,000
Industrial	Btu/barrel	5,515,000	5,473,000	5,443,000	5,457,000	5,519,000	5,487,000
Transportation	Btu/barrel	5,395,000	5,394,000	5,392,000	5,397,000	5,402,000	5,410,000
Electric Utility	Btu/barrel	6,223,000	6,215,000	6,229,000	6,235,000	6,231,000	6,227,000
Imports	Btu/barrel	5,983,000	5,959,000	5,935,000	5,980,000	5,908,000	5,955,000
Exports	Btu/barrel	5,752,000	5,773,000	5,747,000	5,743,000	5,796,000	5,814,000
Natural gas plant liquid production	Btu/barrel	4,049,000	4,011,000	3,984,000	3,964,000	3,941,000	3,925,000
Natural gas, dry							
Production and consumption	Btu/cubic foot	1,021	1,024	1,021	1,020	1,021	1,019
Electric utility consumption	Btu/cubic foot	1,024	1,022	1,026	1,023	1,029	1,034
Non-utility consumption	Btu/cubic foot	1,020	1,024	1,020	1,019	1,019	1,016
Imports	Btu/cubic foot	1,026	1,027	1,026	1,025	1,026	1,030
Exports	Btu/cubic foot	1,023	1,016	1,014	1,013	1,013	1,013
Hydropower[2]	Btu/kWh	10,389	10,442	10,406	10,373	10,435	10,435
Nuclear power[2]	Btu/kWh	10,903	11,161	11,013	11,047	10,769	10,769
Geothermal power[2]	Btu/kWh	21,674	21,674	21,611	21,611	21,611	21,611
Electricity consumption	Btu/kWh	3,412	3,412	3,412	3,412	3,412	3,412

Refined Petroleum Products:	Btu/barrel
Asphalt	6,636,000
Aviation gasoline	5,048,000
Butane	4,326,000
Butane-propane mixture[3]	4,130,000
Distillate fuel oil	5,825,000
Ethane	3,082,000
Isobutane	3,974,000
Jet fuel—kerosene type	5,670,000
Jet fuel—naphtha type	5,355,000
Kerosene	5,670,000
Lubricants	6,065,000
Motor gasoline	5,253,000
Natural gasoline	4,620,000
Petrochemical feedstocks	
Naphtha 400°	5,248,000
Other oils over 400°	5,825,000
Still gas	6,000,000
Petroleum coke	6,024,000
Plant condensate	5,418,000
Propane	3,836,000
Residual fuel oil	6,287,000
Road oil	6,636,000
Special naphtha	5,248,000
Still gas	6,000,000
Unfinished oils	5,825,000
Wax	5,537,000
Miscellaneous	5,796,000

Units of Measure

Weight

1 metric ton	**contains**	1,000 kilograms or 2,204.62 pounds
1 long ton	**contains**	2,240 pounds
1 short ton	**contains**	2,000 pounds

Conversion Factors for Crude Oil (Average Gravity)

1 barrel	**contains**	42 gallons
1 barrel	**contains**	0.136 metric tons (0.150 short tons)
1 metric ton	**contains**	7.33 barrels
1 short ton	**contains**	6.65 barrels

Conversion Factors for Uranium

1 short ton (U_3O_8)	**contains**	0.769 metric tons of uranium
1 short ton (UF_6)	**contains**	0.613 metric tons of uranium
1 metric ton (UF_6)	**contains**	0.676 metric tons of uranium

[1]Includes lease condensate

[2]There is no generally accepted practice for measuring hydropower thermal conversion rates. The hydropower factors on this page are the prevailing heat rate factors at fossil fuel steam electric powerplants. By using the heat rate factor, it is possible to evaluate fossil fuel requirements for replacing hydropower production during periods of drought. Furthermore, it allows for better comparisons with certain other countries such as Norway where hydropower is the principal means for producing electricity. Similarly, the nuclear power and geothermal power conversion factors represent the thermal conversion equivalent of the uranium and geothermal steam consumed at powerplants. The heat content of a kilowatt-hour of electricity produced, regardless of the generation process, is 3,412 Btu per kilowatt-hour. It is not possible to determine the hydroelectric powerplant efficiency by using these factors. The efficiency factor for hydroelectric powerplants is derived by multiplying generation efficiency by turbine efficiency. The average hydroelectric powerplant efficiency in the United States is 86 percent while average generation efficiency is 97 percent and average turbine efficiency is 89 percent.

[3] 60 percent butane and 40 percent propane.

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