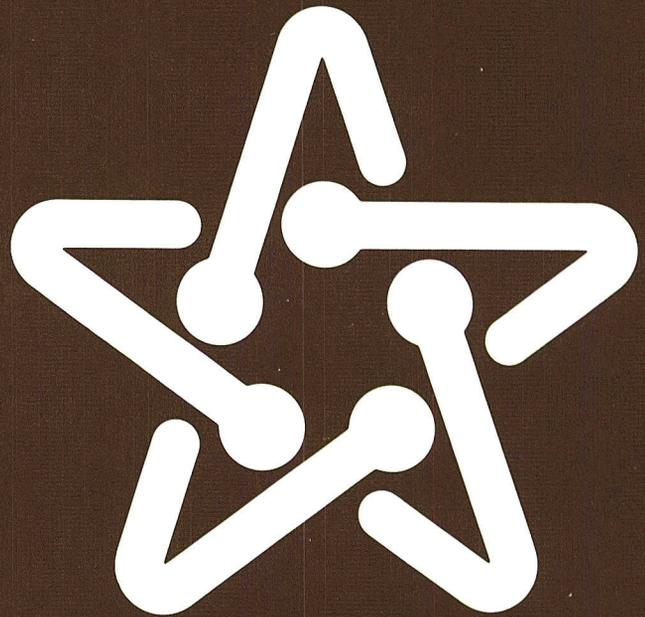


Monthly Energy Review

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Feature Article

CURTAILMENTS OF NATURAL GAS SERVICE

by

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INTRODUCTION

Natural gas, an environmentally clean fuel, represents the Nation's dominant source of energy; it accounts for about 40 percent of total energy production. More than 50 percent of U.S. industries use natural gas and more than half of the U.S. homes are heated by it. Domestic production, which had leveled off in recent years, dropped by 5 percent last year. "Curtailments" of gas service have been rapidly growing, and the potential effect of shortages in gas supplies on employment, industrial output, and the economy presents a serious problem. Marketed natural gas production grew steadily until 1973; since then production decreased from a peak of 22.6 trillion cubic feet (Tcf) to 21.6 Tcf in 1974 and to an estimated 20 Tcf in 1975. (The two year drop of 2.6 Tcf is approximately equivalent to the energy content of 460 million barrels of crude oil.) Natural gas curtailments reported to the Federal Power Commission (FPC) by interstate pipeline companies for the heating season (November through March) have risen from 0.1 Tcf in 1970-71 to a projected curtailment for these pipelines during the 1975-76 season of 1.29 Tcf.

Early indications of shortages in gas supplies occurred in 1968 when the Transcontinental Gas Pipeline Company (Transco), a major interstate pipeline company serving the East Coast of the United States, informed some of its distribution company customers that additional gas could not be supplied to meet the increased needs of its end-use customers. Because these supply deficiencies apply to an increase in demand above historical baseline needs rather than a reduction in previous levels of gas consumption, they are not considered to be curtailments (as this report will explain). Nonetheless, these restrictions marked the beginning of a deficiency of natural gas supply versus demand.

Shortages in gas supplies initially affected customers who had facilities to shift from natural gas to other energy sources (e.g., oil or coal) to meet their energy needs. However, during the 1974-75 winter, shortages began to influence the portion of the industrial sector

where little alternate fuel capability existed. This resulted in reports of plant closings or production cut-backs for short periods.

The natural gas supply problem is a matter of public concern because further reductions in gas service may reach deeper into the industrial sector where (1) alternate fuel facilities are not installed, (2) alternate fuel supply is difficult to obtain, (3) alternate fuels are substantially more expensive, or (4) accurate temperature and impurity controls require a gaseous fuel.

Disruption of natural gas service to the residential and small commercial sector (homes, schools, hospitals, and other essential facilities) would have serious implications. Although protected under current priority systems from curtailments by being given the highest priority, these sectors are subject to certain restrictions, such as restrictions on hookups of new residential customers. With continuing deterioration of gas supplies, these sectors will face further restrictions.

The issue of natural gas supply and potential curtailments is a complicated and sometimes confusing subject. This article attempts to clarify this issue by summarizing and discussing basic relevant information. This includes an explanation of commonly-used terminology, a discussion of some of the causes of the current supply-demand imbalance, a description of the curtailment priority systems, a presentation of the estimated extent of gas curtailments, and a review of major remedial actions. This discussion only focuses on the short-term situation; the more complex legal, regulatory, economic, and philosophical issues are not developed.

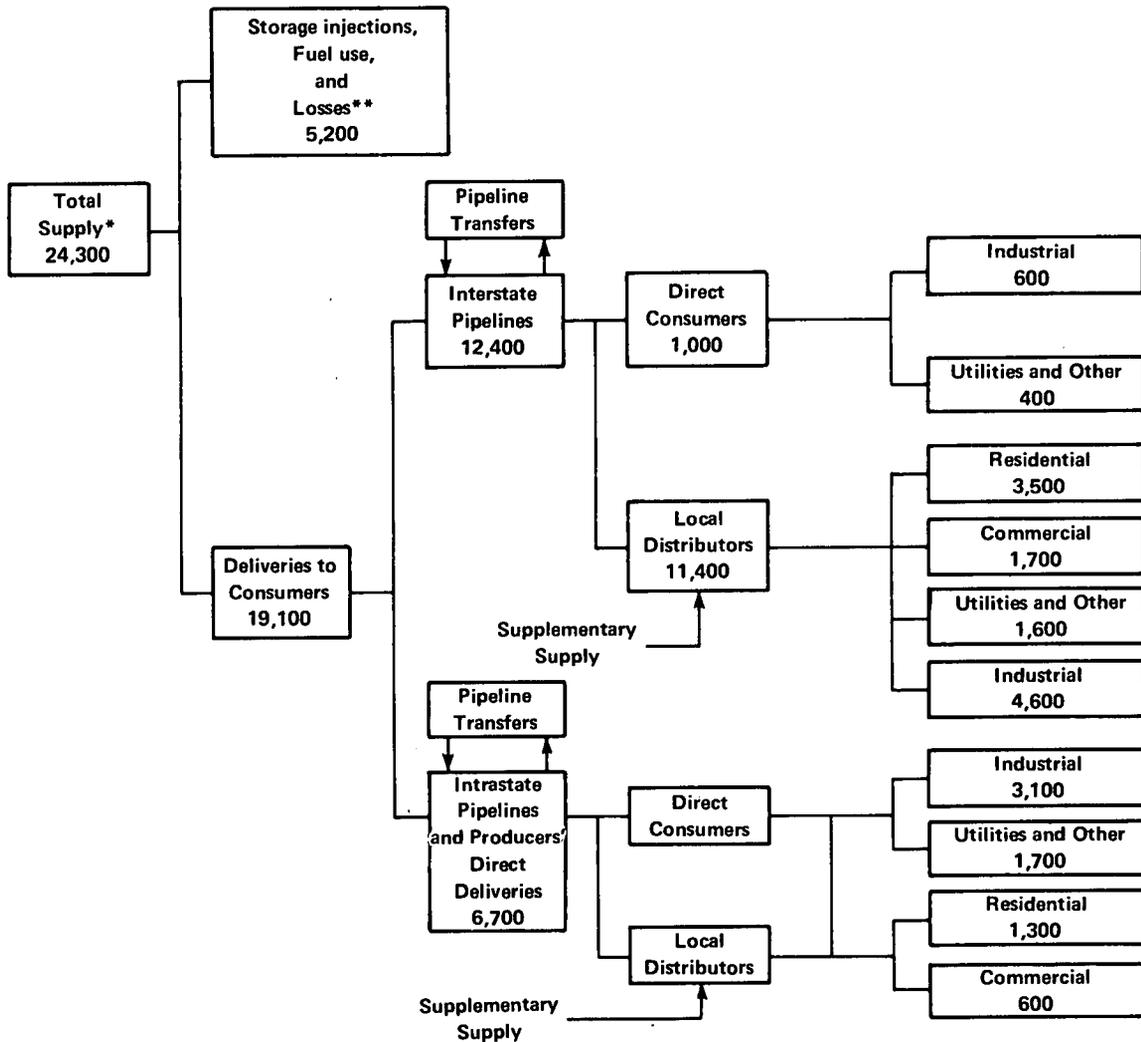
NATURAL GAS REQUIREMENTS AND CURTAILMENTS

The natural gas delivery system in the United States is divided into two networks—interstate and intrastate pipelines. Both networks distribute gas directly to consumers as well as to local companies who then deliver gas to various sectors. (See Figure 1.)

In the present terminology, requirements for natural gas are statements of need by gas companies based on some previous level of consumption or contract demand.

¹Mr. Bass is Technical Director of the FEA's Natural Gas Task Force. Some of the data in this article are taken from a report on curtailments by the Task Force entitled *Natural Gas Curtailments—1975-76 Heating Season*.

Figure 1. Overview—U.S. Natural Gas System (Bcf)



*Supply includes U.S. marketed production, withdrawals from storage, and imports.

**Gas for such purposes as lease and plant fuel, pipeline compressor fuel, extraction loss, transmission line losses.

Source: Based primarily on data from *Natural Gas Production and Consumption: 1974* (Washington, D.C., Bureau of Mines, Mineral Industry Surveys, 1975).

Note: Divisions between interstate and intrastate volumes are estimated.

These requirements are set differently by individual pipeline companies. In some cases, requirements are based on a contract-demand volume or a historical volume; in other cases, small customers may be excluded from statements of requirements and curtailments. Requirements also include fuel for the pipeline systems' compressors, line losses, and volumes needed for storage injections. Requirements may not reflect such factors as changes in demand from those in the base year because of changes in weather, economic activity, plant operations, or alternative fuel conversion capabilities.

For many years gas companies have entered into contracts which have given certain customers lower rates if they are willing to assume some risk of having service interrupted when supply shortages develop. Supply deficiencies which did not exceed the requirements of the customers with gas service under these interruptible contracts were referred to as "normal" curtailments.

Volumes under interruptible contracts provide gas systems the operational flexibility to curtail or cut off the interruptible customers when the weather becomes cold

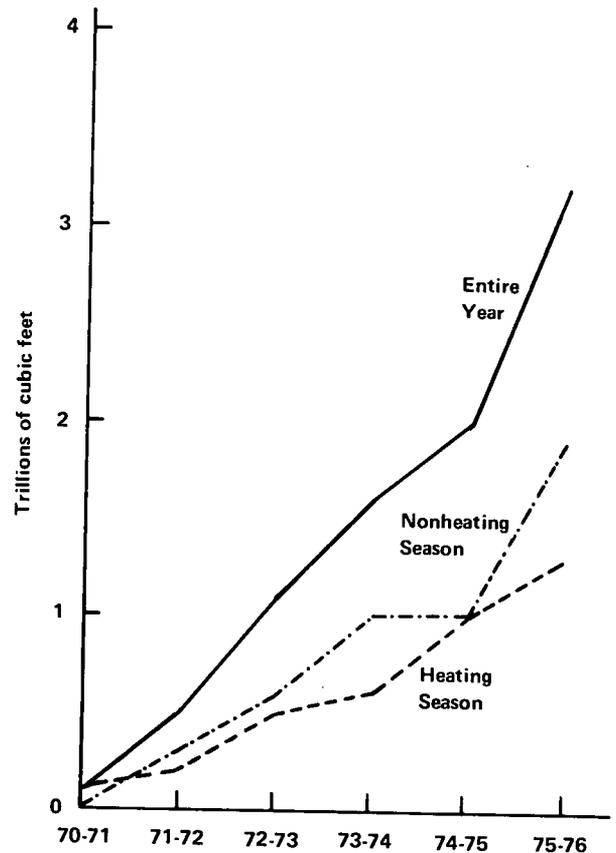
or when an interruption in supply occurs, such as a broken line. This flexibility allows the pipeline companies to meet the increased temperature-sensitive demands of heating customers while still utilizing the capacity of their distribution systems during periods of otherwise lower demand. Interruptible customers pay a lower price than firm customers and generally have the capability to burn another fuel when their gas service is reduced or terminated. In some regions of this country, certain interruptible customers have seasonal operations and shut down as a normal business practice when their gas supplies are curtailed. In other regions, it is a common practice for the gas companies to supply large amounts of gas to electric power generation customers during their summer peak demands and interrupt these customers' supplies during the winter.

Curtailments of gas service to customers that have firm contracts are the incremental shortages in natural gas supplies above the level associated with interruptible service. Curtailments to firm customers occur when reductions in gas volumes to interruptible customers still do not allow enough gas to meet the needs of all customers with firm contracts (gas service under rate schedules that anticipated no interruptions). These curtailments of "firm" contracts represent the more serious portion of supply deficiency and the focal point for public concern. In addition to these reductions, there is the added shortage that is created by the failure to match normal increases in demand. This concept, while meaningful, is more difficult to measure. It is not included in the general usage of the term curtailments, i.e., the failure to meet interruptible and firm contract commitments.

Figure 2 shows the increases in curtailments of requirements for customers with firm contracts based on reports to the FPC by interstate pipeline companies. Annual curtailments of natural gas by interstate pipelines have increased from 0.1 Tcf in 1970-71 to 3.2 Tcf projected for the 1975-76 heating season year (i.e., the 12-month period, September 1, 1975, through August 31, 1976).

The figure also shows the curtailments for the 7-month nonheating season, April through October. Summer curtailments are related to winter curtailments in the following way: gas is customarily stored in underground reservoirs (usually depleted gas reservoirs) to meet peak demands during the winter season. Replenishment of the gas that is withdrawn from storage fields is accomplished mainly by injecting gas during the nonheating season period. Because of the increasing shortages in supplies during the heating season, increasing amounts of gas are diverted from customers in the summer to prepare for the projected peak demands of

Figure 2. Interstate Pipeline Curtailments: 1970-76



Source: Federal Power Commission.

the winter season, and, consequently, the projected summer season curtailments have also increased. Summer curtailments have traditionally not received the attention of winter curtailments because they do not occur during the critical period for temperature-sensitive space heating. Summer curtailments may receive considerably more attention in the future if they begin to reduce industrial output or cause unemployment.

CONTRIBUTING FACTORS TO NATURAL GAS CURTAILMENTS

There are two markets for natural gas, the interstate and intrastate. Natural gas which moves across State lines is in the interstate market, whereas gas produced and consumed solely in one State is in the intrastate market. Between 60 and 65 percent of total consumption is by the interstate market with the remaining 35 to 40 percent consumed by the intrastate market. Curtailments over and above the "normal" curtailments (as previously discussed) are caused by declining natural gas supplies available to the interstate pipelines.

There are two types of gas contracts between pipeline companies that purchase the gas and producing companies that sell the gas. A "warranty" contract states that the seller will provide specified daily amounts of gas for a given term. This gas can be provided from any source available to the producer. The other general type of contract dedicates specific reserves of gas to the purchaser. Most of the gas sold in interstate commerce is sold under the latter "dedicated reserves" type of contract. Gas contracts in general specify a daily contract quantity of gas, usually expressed as the ratio of production to reserves. They also generally include a redetermination clause which states that if the wells cannot provide the agreed upon daily quantities of gas there will be a redetermination to better reflect the ability of the wells to produce. Many contracts also provide that the seller has the right to decide whether continued production is economic.

The productive capability of the wells connected to gas pipelines is an important factor in meeting gas production obligations. As the reserves in a gas reservoir are depleted, the pressure in the reservoir decreases, which makes it more difficult for the wells to maintain previous production levels. To maintain or increase present production from gas reservoirs in the United States, therefore, requires that new reserves of gas be added.

The estimated proved reserves of natural gas in the United States (excluding Alaska) peaked in 1967 at 289 Tcf, and have steadily declined to 208 Tcf in 1974, the lowest proved reserve figure reported in the last 20 years. In spite of greater drilling activity, the additions to estimated proved reserves of gas were only 6.5 Tcf in 1973, and 8.3 Tcf in 1974, while production exceeded 20 Tcf in both years. The declining discoveries of new major sources of natural gas results in the inability of some producers to meet the daily contract quantities for the pipeline companies. The pipeline companies plan the availability of the gas supplies needed to meet their customers' requirements on these expected daily volumes of gas. When planned supplies fall short of projected requirements, curtailments result.

The reserve additions problem is complicated by the regulatory distinction made between the price for gas in the interstate and intrastate gas markets. The FPC regulates the price of gas sold for resale in interstate commerce. Gas which is committed to the interstate market cannot be withdrawn from this market without the approval of the FPC pursuant to the abandonment provisions of the Natural Gas Act.

The reserve base for meeting interstate gas requirements decreased while demand increased. This was fol-

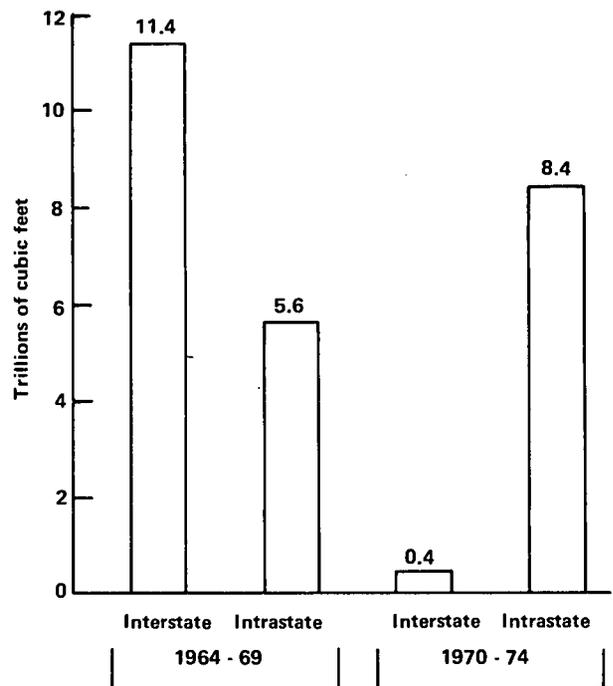
lowed in a few years by an increase in actual curtailments. Without significant increases in aggregate natural gas reserve additions for the pipelines serving the interstate market, curtailments can be expected to continue. Figure 3 indicates that the gas reserves additions to interstate pipelines have shifted materially in the last 10 years. Most of the new gas discoveries reported in recent years have been dedicated to the intrastate market.

HOW CURTAILMENT PRIORITIES ARE ESTABLISHED

The Federal Power Commission, State utility commissions, pipeline companies, and distribution companies and their customers are all involved in the process of establishing natural gas curtailment priorities. Hearings result in the determination of curtailment priority plans which in turn are authorized by State or Federal Government agencies. State agencies have jurisdiction over sales of gas within a State (intrastate), and sales of gas in interstate commerce (between States) are regulated by FPC.

The Federal Power Commission in April 1971 issued Order No. 431 which required interstate pipeline com-

Figure 3. Comparison of estimates of gas reserves additions to interstate and intrastate markets, 1964-74



Sources: American Gas Association and Federal Power Commission.

panies to file curtailment plans if they were reducing or projecting reductions of their customers' gas service. Order No. 467-B, a Commission policy statement, issued March 2, 1973, defined nine priorities of service categories to be considered in regard to curtailment plans filed with the FPC by interstate pipelines. In these orders, the FPC also solicited the cooperation of State authorities to implement curtailment programs at the State level. However, the fundamental decision and implementation authority related to most of the gas market is at the State level.

The Federal Energy Administration surveyed the curtailment policies in 21 States subject to substantial system-wide curtailments by several major interstate pipeline companies and found that none has completely adopted the FPC's nine priority of service categories. Most States have an end-use plan in effect either through a statewide plan applicable to all companies operating in that State or through individually filed company tariffs (see Table 1).

Gas distribution companies generally have two basic types of curtailment priority plans: end use and pro rata. The end-use plans distinguish among industrial, commercial, and residential users, curtailing their supplies in that order. Some plans (those modeled after the FPC plan) have finer distinctions, although most are rather broadly based. Most companies curtail interruptible loads first; many attempt to protect "human needs" or "critical" uses. The pro-rata plans usually curtail the larger volume user first and do not discriminate between industrial and commercial usage. In all of these plans, there is one constant: the residential (sometimes referred to as domestic) user is given the highest priority.

In order to continue to operate a plant at a normal or expected level, a customer who receives notice of curtailment has several options. If he has facilities capable of using alternate fuels he may obtain and store these fuels to offset gas curtailments. If he does not have alternative fuel capability or cannot use a fuel such as oil or coal in his industrial process, he may seek an allotment of a substitute gaseous fuel such as propane by filing Form 17 with the FEA. In addition, a curtailed customer may contact his state commission or gas supplier and then file with the FPC a "Petition for Extraordinary Relief" from gas curtailments.

Conservation can have a significant effect on aggregate gas curtailments. Reducing a thermostat from 72 to 68 degrees may save about 20 percent of the natural gas use for heating, and lowering the thermostat to 60 degrees at night could save an additional 10 percent. Lowering the temperature of a gas water heater from 140 to 110 degrees could cut consumption by 15 percent; 6 inches

of blanket-type attic insulation can save 20 percent; caulking, weather stripping, storm doors, etc., can provide further savings. Such conservation practices can release substantial amounts of natural gas for other use and lessen the possibility or extent of industrial curtailments.

THE EXTENT OF THE NATURAL GAS SHORTAGE

The Federal Energy Administration, in conjunction with the FPC and the National Association of Regulatory Commissioners (NARUC), conducted a survey of approximately 1,700 interstate and intrastate pipeline companies, distribution companies, and municipal gas systems that deliver gas to the final user. The purpose of the survey was to develop estimates of the extent of natural gas curtailments to the end-use customers of these companies.

Table 2 provides data on total reported deliveries, curtailments, and requirements for each of the 21 most seriously affected States both for last winter and as projected for this winter (1975-76). Analysis of these and other related data indicate that although all of these States had projected increases in curtailments for the 1975-1976 winter, ranging from 7 percent to 147 percent, there is great variance in the impact on different States. For example, North Carolina and Nevada both show projected curtailment increases of 31 percent which are about 50 percent of their respective requirements. But, as Table 3 shows, 94 percent of the projected curtailments in Nevada will be absorbed by the electric power generation sector. These reductions in gas deliveries can be offset with fuel oils or coal. Only 6 percent of North Carolina's curtailments will be absorbed in this manner, and its projected increase in curtailments is 9 billion cubic feet versus Nevada's 3 billion cubic feet (see Table 2). This does not mean there will be no economic impact due to gas curtailments in Nevada. The use of high cost fuels (such as oil) will result in higher prices for the electricity generated and sold in the State. However, without further analysis, the conclusion can be reached that North Carolina may be faced with a potentially more critical problem than Nevada.

The next step is to ascertain the alternate fuels needed in North Carolina to offset gas curtailments and whether or not supplies of these fuels are available. Using reported data from the FEA's survey of gas curtailments indicating a potential additional need for alternate fuels, the previous use of these alternate fuels by the other historical markets in the State, the projected normal growth in these other uses, and the availability of the needed fuels, further conclusions can be drawn. For
(Text is continued on page 9)

Table 1. State Gas Curtailment Policies

	Type of Curtailment Plan Used				Distinctions Made					
	Statewide	Company by Company	End Use	Pro Rata	Firm/Interruptible	Volume	Alternate Fuel Capability	Human Needs	Plant Protection	Process Feedstock
Arizona	X		X		X	X		X		
California		X	X		X					
Delaware		X	X		X	X			X	
Florida		X	X		X	X	X		X	X
Georgia		X	X		X	X	X		X	X
Indiana		X	X		X	X	X	X	X	X
Iowa		X		X	X	X				
Kansas		X	X		X	X	X		X	X
Kentucky		X	X		X	X	X	X	X	
Maryland		X	X		X	X		X	X	
Missouri		X	X		X	X	X		X	X
Nevada	X		X		X	X	X		X	X
New Jersey	X		X		X	X	X	X	X	
New York	X		X		X	X	X	X	X	
North Carolina	X		X		X	X	X	X	X	X
Ohio		X	X	X	X	X	X	X	X	X
Pennsylvania		X	X		X				X	X
South Carolina		X	X		X	X	X	X	X	X
Tennessee		X	X		X					
Virginia	X			X	X	X				
West Virginia		X	X	X	X	X	X		X	X

Source: FEA Report, *Natural Gas Curtailments, 1975-1976 Heating Season*, issued October 1975.

Table 2. Heating Season Actual and Projected Gas Deliveries, Curtailments, and Requirements

State	1974-75 Heating Season (Actual)				1975-76 Heating Season (Projected)			Percent Change in Curtailment 1974-75 to 1975-76
	Deliveries (MMcf)	Curtailments (MMcf)	Requirements (MMcf)	Percent of Requirements Curtailed	Deliveries (MMcf)	Curtailments MMcf)	Requirements (MMcf)	
Arizona	66,971	20,129	87,100	23	65,295	26,117	91,412	30
California	753,423	283,895	1,037,318	27	755,325	402,270	1,157,595	42
Delaware	8,764	929	9,693	10	8,489	1,967	10,456	112
Florida*	60,598	38,288	98,886	39	51,484	47,541	99,025	24
Georgia	152,395	52,184	204,579	26	145,079	63,127	208,206	21
Indiana	284,102	11,076	295,178	4	273,150	22,330	295,480	102
Iowa	158,387	32,121	190,508	17	168,145	35,822	203,967	12
Kansas	223,393	54,637	278,030	20	213,086	59,949	273,035	10
Kentucky	110,552	7,087	117,639	6	109,869	17,509	127,378	147
Maryland & D.C.	100,135	12,515	112,650	11	97,097	21,725	118,822	74
Missouri	205,928	29,032	234,960	12	194,588	33,769	228,357	16
Nevada	23,742	17,235	40,977	42	22,864	22,534	45,398	31
New Jersey	144,110	31,062	175,172	18	154,097	33,386	187,483	7
New York	366,756	35,133	401,899	9	379,885	50,534	430,419	44
North Carolina	52,689	37,973	90,662	42	45,352	49,844	95,196	31
Ohio	580,615	63,947	644,562	10	568,683	111,043	679,726	74
Pennsylvania	363,039	27,217	390,256	7	370,093	49,415	419,508	82
South Carolina	45,320	54,346	99,666	55	42,839	60,922	103,761	12
Tennessee	103,961	22,451	126,412	18	103,053	27,370	130,423	22
Virginia	68,652	12,652	81,304	16	67,489	17,749	85,238	40
West Virginia	55,741	8,358	64,099	13	52,150	11,929	64,079	43
Total (21 States)	3,929,273	852,267	4,781,540	19	3,888,112	1,166,852	5,054,964	37

*Delivery volumes for Florida do not include about 46 Bcf transported by Florida Gas Transmission Company for the accounts of Florida Power and Light and Florida Power Company. It is understood that these volumes are not subject to the pipeline's curtailment and were not reported to FEA.

Note: Deliveries and curtailments as reported by survey respondents were added together to derive requirements.

Source: FEA Report, *Natural Gas Curtailments, 1975-1976 Heating Season*, issued October 1975.

Table 3. Gas Curtailments To Electric Power Generation Customers as a Percentage of Reported Curtailments by Type of Service (1975-76 November-March Heating Season)

State	Percent of Firm Curtailments	Percent of Interruptible Curtailments	Percent of Total Curtailments
Arizona	58	0	58
California	0	39	39
Delaware	2	0	1
Florida	5	53	40
Georgia	0	57	57
Indiana	1	0	1
Iowa	0	88	84
Kansas	81	79	80
Kentucky	1	0	1
Maryland & D.C.	39	9	13
Missouri	65	19	54
Nevada	90	100	94
New Jersey	0	16	16
New York	0	54	48
North Carolina	0	9	6
Ohio	1	22	2
Pennsylvania	0	0	0
South Carolina	0	54	52
Tennessee	0	0	0
Virginia	0	6	3
West Virginia	0	0	0

Source: FEA Report, *Natural Gas Curtailments, 1975-1976 Heating Season*, issued October 1975.

North Carolina, the conclusion reached in the October report was that adequate volumes of middle distillate and residual fuel oils should be available to offset the projected gas curtailments, but there could be problems obtaining the amount of additional propane estimated to be needed. Similar conclusions were reached in the FEA's October report for 10 other potentially critical States: Arizona, Indiana, Kentucky, Maryland, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

With changes in weather and economic activity, it is necessary to continue monitoring gas curtailments, the resulting need for alternative fuels, and the availability of these fuels, as long as the serious deterioration in supplies of gas available to these markets continues.

In December 1975, FEA conducted another survey, less detailed, of the major distribution companies in each of the 21 States that had been reviewed in its October report. The results of this "update" are shown in Table 4. The more current survey reveals that the situation in many of the 21 States was much improved over that reported by FEA in October.

Much warmer than normally expected weather not only helped the gas supply situation but also affected availability of alternative fuels. The reduced demand for propane in November and December improved the situation in several of the 11 problem States previously listed. Based on normally expected weather for the remainder of the heating season, the prognosis in December was that the propane situation still looked somewhat critical only in North Carolina, Ohio, South Carolina, Tennessee, and West Virginia.

ACTIONS TAKEN OR PLANNED

The FPC and FEA have taken a number of steps to deal with the gas shortage problems.

Records at the FPC indicate that by December up to about 35 billion cubic feet of additional gas was available this winter based on daily volumes related to purchases by distribution companies that are customers of interstate pipeline companies using the 60-day emergency procedures authorized by the FPC (Section 2.68, FPC Rules and Regulations). This gas has been purchased mainly from intrastate pipeline companies in
(Text is continued on page 13)

Table 4. Comparison of October Report and December Update for Natural Gas in 21 States

1974-75 Heating Season (Actual)					1975-76 Heating Season (Projected)				
State	Deliveries (Bcf)	Curtailments (Bcf)	Requirements* (Bcf)	Percent of Requirements Curtailed	State	Deliveries (Bcf)	Curtailments (Bcf)	Requirements* (Bcf)	Percent of Requirements Curtailed
Arizona					Arizona				
October report	67.0	20.1	87.1	23	October report	65.3	26.1	91.4	29
As corrected	67.6	20.4	88.0	23	As corrected	65.3	26.2	91.5	29
					December update	69.3	22.2	91.5	24
California					California				
October report	753.4	283.9	1,037.3	27	October report	755.3	402.3	1,157.6	35
As corrected	736.1	323.2	1,059.3	31	As corrected	706.3	393.7	1,100.0	36
					December update	709.5	369.5	1,079.0	34
Delaware					Delaware				
October report	8.8	0.9	9.7	9	October report	8.5	2.0	10.5	19
As corrected	8.9	1.1	10.0	11	As corrected	8.5	2.2	10.7	21
					December update	9.4	1.3	10.7	12
Florida					Florida				
October report	60.6	38.3	98.9	39	October report	51.5	47.5	99.0	48
As corrected	63.4	39.8	103.2	39	As corrected	52.5	49.2	101.7	48
					December update	52.2	49.5	101.7	49
Georgia					Georgia				
October report	152.4	52.2	204.6	26	October report	145.1	63.1	208.2	30
As corrected	158.9	51.9	210.8	25	As corrected	152.4	62.9	215.3	29
					December update	152.4	62.9	215.3	29
Indiana					Indiana				
October report	284.1	11.1	295.2	4	October report	273.2	22.3	295.5	8
As corrected	278.6	11.7	290.3	4	As corrected	272.5	23.1	295.6	8
					December update	278.5	17.1	295.6	6
Iowa					Iowa				
October report	158.4	32.1	190.5	17	October report	168.1	35.8	203.9	18
As corrected	162.8	31.5	194.3	16	As corrected	169.2	35.8	205.0	18
					December update	169.2	35.8	205.0	18
Kansas					Kansas				
October report	223.4	54.6	278.0	20	October report	213.1	59.9	273.0	22
As corrected	216.5	54.6	271.1	20	As corrected	206.5	60.2	266.7	23
					December update	206.9	59.8	266.7	23
Kentucky					Kentucky				
October report	110.6	7.1	117.7	6	October report	109.9	17.5	127.4	14
As corrected	111.8	7.3	119.1	6	As corrected	111.1	17.5	128.6	14
					December update	115.4	13.2	128.6	10
Maryland & D.C.					Maryland & D.C.				
October report	100.1	12.5	112.6	11	October report	97.1	21.7	118.8	18
As corrected	100.7	12.8	113.5	11	As corrected	97.1	22.0	119.1	19
					December update	104.9	14.2	119.1	12

Table 4. Comparison of October Report and December Update for Natural Gas in 21 States—(Continued)

1974-75 Heating Season (Actual)					1975-76 Heating Season (Projected)				
State	Deliveries (Bcf)	Curtailments (Bcf)	Requirements* (Bcf)	Percent of Requirements Curtailed	State	Deliveries (Bcf)	Curtailments (Bcf)	Requirements* (Bcf)	Percent of Requirements Curtailed
Missouri					Missouri				
October report	205.9	29.0	234.9	12	October report	194.6	33.8	228.4	15
As corrected	208.5	29.7	238.2	12	As corrected	197.1	35.1	232.2	15
					December update	197.1	35.1	232.2	15
Nevada					Nevada				
October report	23.7	17.2	40.9	42	October report	22.9	22.5	45.4	50
As corrected	24.6	18.0	42.6	42	As corrected	23.5	24.2	47.7	51
					December update	23.5	24.2	47.7	51
New Jersey					New Jersey				
October report	144.1	31.1	175.2	18	October report	154.1	33.4	187.5	18
As corrected	144.1	30.8	174.9	18	As corrected	154.1	33.1	187.2	18
					December update	166.3	20.9	187.2	11
New York					New York				
October report	366.8	35.1	401.9	9	October report	379.9	50.5	430.4	12
As corrected	366.8	35.1	401.9	9	As corrected	381.1	45.0	426.1	11
					December update	385.3	40.8	426.1	10
North Carolina					North Carolina				
October report	52.7	38.0	90.7	42	October report	45.4	49.8	95.2	52
As corrected	48.6	34.7	83.3	42	As corrected	42.1	47.1	89.2	53
					December update	48.1	41.1	89.2	46
Ohio					Ohio				
October report	580.6	63.9	644.5	10	October report	568.7	111.0	679.7	16
As corrected	580.0	66.9	646.9	10	As corrected	568.3	109.0	677.3	16
					December update	599.5	77.8	677.3	12
Pennsylvania					Pennsylvania				
October report	363.0	27.2	390.2	7	October report	370.1	49.4	419.5	12
As corrected	377.8	27.6	405.4	7	As corrected	383.3	49.3	432.6	11
					December update	395.5	37.1	432.6	9
South Carolina					South Carolina				
October report	45.3	54.3	99.6	55	October report	42.8	60.9	103.7	59
As corrected	48.9	55.3	104.2	53	As corrected	46.4	62.0	108.4	57
					December update	49.3	59.1	108.4	55
Tennessee					Tennessee				
October report	104.0	22.4	126.4	18	October report	103.1	27.4	130.5	21
As corrected	111.4	22.7	134.1	17	As corrected	111.9	31.3	143.2	22
					December update	111.9	31.3	143.2	22

Table 4. Comparison of October Report and December Update for Natural Gas in 21 States—(Continued)

1974-75 Heating Season (Actual)					1975-76 Heating Season (Projected)				
State	Deliveries (Bcf)	Curtailments (Bcf)	Requirements* (Bcf)	Percent of Requirements Curtailed	State	Deliveries (Bcf)	Curtailments (Bcf)	Requirements* (Bcf)	Percent of Requirements Curtailed
Virginia					Virginia				
October report	68.7	12.7	81.4	16	October report	67.5	17.8	85.3	21
As corrected	69.5	12.8	82.3	16	As corrected	65.5	18.1	83.6	22
					December update	72.0	11.6	83.6	14
West Virginia					West Virginia				
October report	55.7	8.4	64.1	13	October report	52.2	11.9	64.1	19
As corrected	79.4	9.3	88.7	10	As corrected	80.5	15.3	95.8	16
					December update	83.8	12.0	95.8	13
Total (21 States)					Total (21 States)				
October report	3,929.3	852.1	4,781.4	18	October report	3,888.4	1,166.6	5,055.0	23
As corrected	3,964.9	897.2	4,862.1	19	As corrected	3,895.2	1,162.3	5,057.5	23
					December update	4,000.0	1,036.5	5,036.5	21

*Requirements are equal to deliveries plus curtailments.

Source: FPC news release E-75-418, issued December 1975.

Texas, Oklahoma, and Michigan at prices ranging from \$1.35 per Mcf to \$2 per Mcf and will be transported by interstate pipelines to the purchaser.

By December, high priority industrial customers being curtailed in Ohio, Pennsylvania, South Carolina, and Virginia had purchased from producers in Texas amounts of gas that could provide several billion cubic feet of additional gas for this winter based on the policy expressed by FPC's Order 533 (Section 2.79, FPC Rules and Regulations). The price paid for this gas ranged from \$1.50 to \$1.90 per Mcf. About nine other applications of this type had been filed with FPC by the end of 1975, and, if all are approved, up to 1 to 2 Bcf of additional gas could be distributed among North Carolina, Ohio, Virginia, and West Virginia this winter.

These actions by the FPC have the effect of bringing some of the intrastate gas into the interstate markets at the higher prices. The small number of applications to the FPC may indicate an unwillingness of some industrial customers to absorb the higher costs of purchasing gas in the intrastate market.

FEA has issued directives requiring the conversion from natural gas and oil to coal of some large utility powerplants. FEA, with the help of its regional offices, other Federal agencies such as FPC, and the various States' energy offices and Commissions that regulate gas companies, will continue to monitor the gas situation as the winter progresses. Further surveys and reports will be made when deemed necessary.

CONCLUSION

The curtailment of natural gas in the interstate market results from the long-term effects of declining reserve additions. The immediate extent of the curtailments varies greatly by State as does the capability to adjust to the shortages. Recent weather, adjustment of priority plans, conservation practices, and emergency purchase of gas under FPC regulations have combined to significantly reduce or alleviate the projected impacts during the current winter. However, these short-term measures do not materially address the longer-term issue of the natural gas supply-demand imbalance.

Part 1

Overview

Production of energy in the United States in November totaled 4.911 quadrillion Btu (the equivalent of 28.2 million barrels per day of crude oil), down 1.6 percent from average daily production in October. Crude oil output dropped 0.6 percent to its lowest daily level since August. Coal production showed the most significant decline, down 10.2 percent from the daily average in October. (Cumulative coal production for the year, however, was 4.3 percent above the same period a year ago.) Partially offsetting these declines was an estimated 3.3-percent increase in daily production of natural gas. During the first 11 months of 1975, domestic energy output was 2.4 percent below the level for the corresponding period of 1974 and 3.7 percent below the level for the same months in 1973.

Consumption of energy in the United States in October increased seasonally to 5.817 quadrillion Btu (or 32 million barrels per day of crude oil equivalent). Because of exceptionally warm weather, October demand was 4 percent below the level for the corresponding month in both 1974 and 1973. Energy consumption averaged 33.1 million barrels per day of crude oil equivalent during the first 10 months of the year, down 2.6 percent from the level for the same period in 1974 and down 4.8 percent from consumption for the similar period of 1973.

About one-fifth of the demand for energy in the United States during the past 3 years has been met by imported fossil fuels (consisting of crude oil, refined petroleum products, and natural gas). A total of 1.176 quadrillion Btu of fuels equal to 6.8 million barrels per day of crude oil was imported in November, only slightly more than in October. The major source of crude oil imports in November was Saudi Arabia, which provided 15.5 percent of the total according to the U.S. Bureau of the Census data. Nigeria and Canada were also large suppliers, contributing 14.5 percent and 13.8 percent, respectively. Excluding the Virgin Islands (for which November data are not yet available), the main sources of refined product imports during the month were the Netherlands Antilles (18.8 percent) and Canada (16.3 percent). Venezuela, Bahamas, and Trinidad provided most of the remainder (33.0 percent). Nearly all imports of natural gas come from Canada.

In an attempt to stimulate petroleum production and reduce reliance on imports, on December 22, 1975, the President signed into law the Energy Policy and Conservation Act and, at the same time, removed the \$2-per-barrel fee on imported crude oil. A summary of the major provisions of the Act follows:

- The Emergency Petroleum Allocation Act of 1973 is amended to establish a composite ceiling price of

\$7.66 per barrel for all first sales of crude oil produced in the United States, beginning in February 1976. The \$7.66 can be increased at the discretion of the President, beginning in March 1976, to adjust for inflation and to provide a production incentive of not more than 3 percent per year. However, both adjustments may not exceed 10 percent per year. Adjustments above the 10 percent may be submitted to Congress, but are subject to disapproval.

- The Act authorizes a gradual phaseout of mandatory domestic price controls on crude oil over a 40-month period.
- The Act provides for a Strategic Petroleum Reserve to reduce vulnerability to the effects of a severe energy supply interruption. A minimum of 150 million barrels of petroleum products will be placed in storage over the next 3 years.
- The President is directed to submit to Congress one or more energy conservation contingency plans which would impose reasonable restrictions on public and private use of energy and a contingency rationing plan. Both the conservation and rationing plans could only be implemented during a severe energy supply interruption or to fulfill our international energy obligations.
- The Act directs the Federal Energy Administration to provide assistance to States in the preparation and development of energy conservation plans. These plans will be designed to result in an energy savings in 1980 of 5 percent or more below each State's projected 1980 energy consumption.
- The Act provides for minimum average fuel economy standards for automobiles, beginning with the 1978 model year, and imposes civil penalties on manufacturers for failure to comply. Labeling regulations are also provided. In addition, the Act requires the use of fuel-efficient automobiles by the Federal Government.
- A program is to be established which requires that each major energy consuming industry be identified, that energy efficiency by American industry be promoted, and that voluntary energy efficiency improvement targets be established for at least the 10 major industries which consume the most energy.
- A program is to be established which requires that various consumer products (such as refrigerators, freezers, dishwashers, etc.) be tested and labeled for energy efficiency. An energy efficiency improvement

target for each type of covered consumer product is also required.

- An extension of the Energy Supply and Environmental Coordination Act is provided for in the Act. Under this law, FEA can require public utilities and other major fuel burning installations, which use gas or oil as boiler fuel, to convert to coal.

Mild autumn weather continued through November, and, consequently, the continental United States accumulated 10.9 percent fewer distillate oil heating degree-days than the normal for the month, and 2.5 percent fewer than last November. Reflecting the unseasonably warm conditions which resulted in lowered demand, stocks of the fuel oils remained well above winter minimum operating levels.

Electric utilities produced 2.0 percent more electricity in the first 11 months of 1975 than in the corresponding months of 1974. This increase was far below the 7-percent average annual electric power production growth rate recorded for the 10-year period prior to 1974. During 1974 the electric power production increase was under 1 percent.

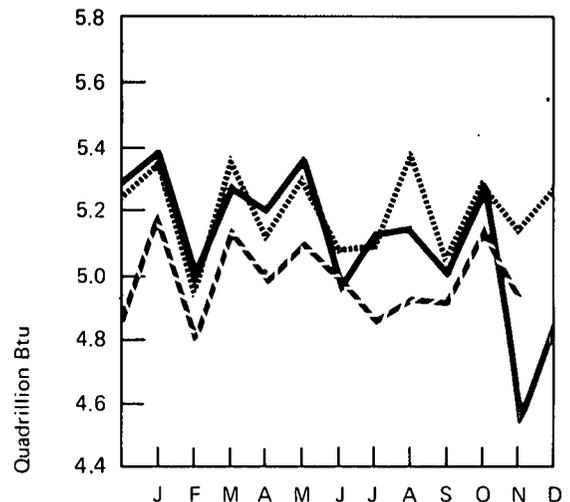
In November, the national average retail price of regular gasoline dropped for the second month in a row. The 0.5-cent decline brought the price to 58.4 cents per gallon, about equal to the price in July, but 6.4 cents higher than the average selling price a year ago, and 17.1 cents higher than in November 1973.

Crude oil prices continued to spiral upward in October. The average wellhead price for "new" crude oil rose 27 cents to \$12.73 per barrel. Refiners paid an average of \$8.59 per barrel for domestic crude in October (10 cents more than in September) and \$14.66 per barrel for imported crude (an increase of 62 cents over September's price).

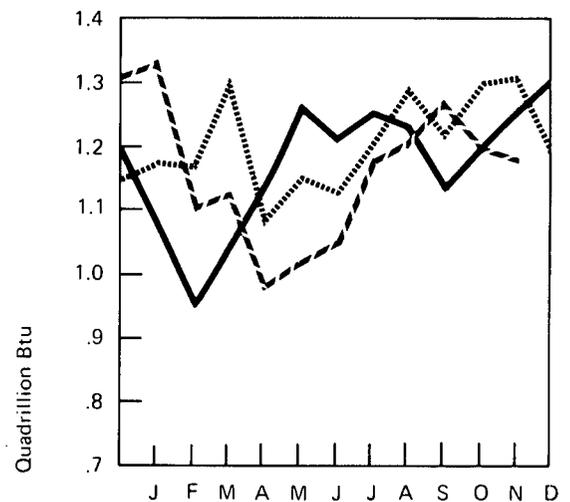
In resource development, the number of seismic crews prospecting for new reserves of oil and gas declined for the third consecutive month during November. Although a seasonal decline was expected, there were 13-percent fewer crews working than in November 1974. Oil and gas drilling activity, in contrast, continued to surge. The number of wells completed in the first 11 months of the year (33,019) has already exceeded the number drilled in all of 1974 (31,698).

Worldwide crude oil production dropped more than 5 million barrels per day in October, following a record high of 57 million barrels per day in September. Half of the decline was the result of 2.6-million-barrel-per-day production cut by Saudi Arabia.

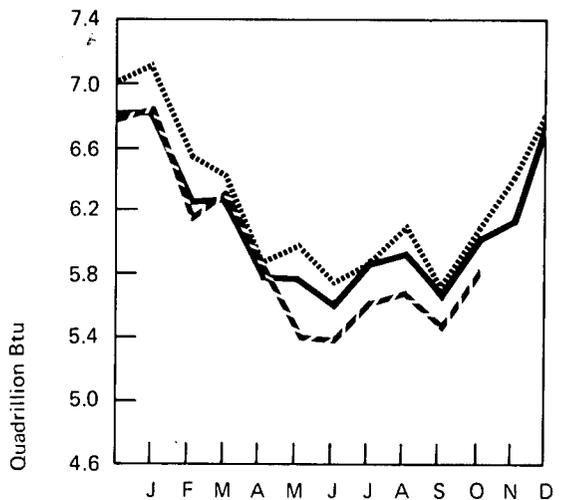
Domestic Production of Energy*



Imports of Fossil Fuels



Domestic Consumption of Energy**



*See Explanatory Note 1.
**See Explanatory Note 2.

..... 1973
—— 1974
- - - 1975

CRUDE OIL

Crude oil production, computed from American Petroleum Institute Data, fell to 8,273,000 barrels per day in November, the lowest level since August. This is a continuation of a downward trend that began in 1972. November production was equal to 65 percent of crude oil input to refineries, compared with an average of 69 percent in 1974 and a recent high of 85 percent in April 1972.

Inventories were reduced by 4 million barrels during the month (the equivalent of 133,000 barrels per day). Inventory draw-downs of this magnitude in November are uncommon.

TOTAL REFINED PETROLEUM PRODUCTS

Because of the relatively warm temperatures in November, demand for refined products was only slightly higher than the demand in October. (Only 694 oil heating degree-days were accumulated during November compared with the normal for the month of 779.) The modest increase in distillate fuel oil demand of less than 100,000 barrels per day, compared with an average increase of nearly 500,000 barrels per day for the same period in 1972 through 1974, reflected these warmer temperatures. Fuel oil stocks remained above normal levels.

DISTILLATE OIL HEATING DEGREE-DAYS

Unseasonably warm fall weather continued into November, and, as a result, the continental United States accumulated 2.5 percent fewer distillate oil heating degree-days than in November 1974, and 10.9 percent fewer than normal (1941-1970 average). Total degree-days for the current heating season (beginning July 1, 1975) have been 9.9 percent below that for the corresponding period in 1974, and 7.5 percent below normal.

On a regional basis, the western third of the Nation (PAD Districts IV and V) has accumulated more degree-days (colder) than last year, the deep South (PAD District III) has had roughly the same number of degree-days, while the East and Midwest (PAD Districts I and II) have had fewer degree-

days (warmer). A significant 25.6 percent decline in the number of degree-days has occurred in PAD I.

NATURAL GAS

Marketed production of natural gas in November was estimated to be 4.0 percent below the volume for November 1974. During the first 11 months of 1975, marketed production totaled 18,372 billion cubic feet, 7.3 percent below the 19,811 billion cubic feet marketed during the similar period of 1974.

Domestic consumption of natural gas in November was estimated to be 4.8 percent below the volume for November 1974. During the first 11 months of 1975, domestic consumption totaled 17,603 billion cubic feet, 7.9 percent below the 19,119 billion cubic feet consumed during the same period of 1974.

Imports of natural gas in November were estimated at 80 billion cubic feet, 24 percent below the November 1974 level. Total imports for the first 11 months of 1975 equaled the 872 billion cubic feet imported during the corresponding period in 1974.

COAL

Domestic consumption of bituminous coal and lignite in September equaled 43.8 million tons, approximately the same as in September 1974. Following the trend for the year, electric utility consumption, which accounts for about 70 percent of the total used, was 5.2 percent higher, while consumption by other sectors was 12.5 percent lower. Consumption by all sectors during the first 9 months of 1975 was unchanged from the total of 415 million tons for the same 9-month period in 1974.

Production of bituminous coal and lignite in November totaled 53.0 million tons, an increase of 19.3 million tons over the amount for November 1974 when production declined drastically because of the coal strike.

Coal exports for the first 10 months of the year were up 5.8 percent from the level for the comparable period in 1974.

Crude Oil

	Crude Input to Refineries		Domestic Production		Imports		Stocks*	
	In thousands of barrels per day							
	BOM	FEA	BOM	API	BOM	FEA	BOM	FEA
1973								
January	12,190		9,176		2,732		224,056	
February	12,187		9,395		2,873		221,893	
March	12,201		9,272		3,162		230,696	
April	12,208		9,292		3,049		235,383	
May	12,281		9,262		3,215		244,777	
June	12,862		9,214		3,220		235,846	
July	12,750		9,217		3,501		230,750	
August	12,635		9,169		3,593		235,660	
September	12,560		9,065		3,471		228,280	
October	12,758		9,224		3,739		233,520	
November	12,374		9,161		3,452		237,001	
December	12,150		9,063		2,891		229,504	
AVERAGE	12,431		9,208		3,244			
1974								
January	11,491		8,907		2,382		220,261	
February	11,102		9,156		2,248		228,004	
March	11,355		8,950		2,462		231,705	
April	11,823		8,952		3,267		243,687	
May	12,333	12,777	8,903		3,908	3,748	256,726	252,270
June	12,697	12,709	8,777		3,925	3,957	255,762	253,008
July	12,811	12,905	8,754		4,091	4,167	255,936	252,399
August	12,644	12,731	8,682		3,924	3,852	251,905	247,040
September	12,124	12,253	8,432		3,797	3,758	253,623	249,476
October	12,286	12,430	8,616		3,810	3,936	256,430	255,003
November	12,332	12,402	8,569		3,958	3,997	258,123	256,271
December	12,519	12,671	8,514		3,869	3,979	252,158	248,808
AVERAGE	12,689		8,765		3,477			
1975								
January	12,297	12,442	8,439		4,029	3,964	258,163	253,836
February	12,135	12,144	8,575		3,828	4,061	264,348	264,833
March	11,905	11,961	8,476		3,656	3,853	267,564	271,410
April	11,803	11,837	8,440		3,378	3,416	269,294	275,393
May	11,983	11,985	8,371		3,486	3,493	263,336	274,123
June	12,417	12,421	8,409		3,905	3,907	262,873	268,564
July	12,915	13,002	8,327		4,193	4,337	252,035	256,965
August	13,046	13,120	8,228	8,356	4,581	4,661	244,325	250,354
September		12,939		8,335		4,664		253,597
October		R12,463		8,324		R4,416		R260,887
November		**12,771		8,273		**4,630		**256,903
AVERAGE*** (11 months)	12,427		8,380		4,071			

*See definitions.

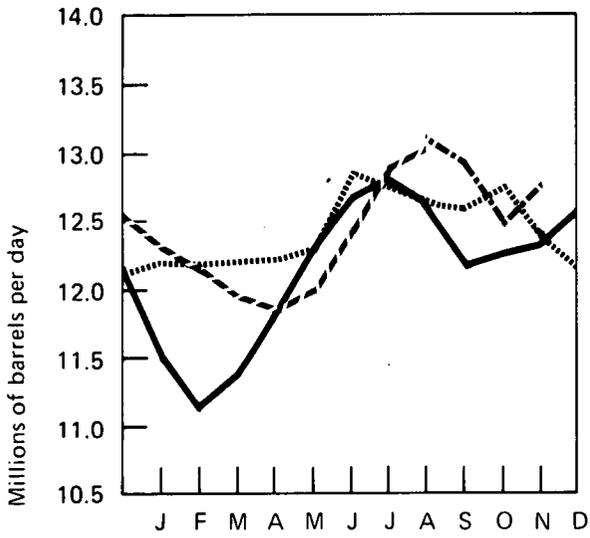
**Preliminary data.

***11-month average for refinery input, imports, and stocks is based on Bureau of Mines (BOM) data for January through August and Federal Energy Administration (FEA) data for September through November. 11-month average for domestic production is based on BOM data for January through August and American Petroleum Institute (API) data for September through November.

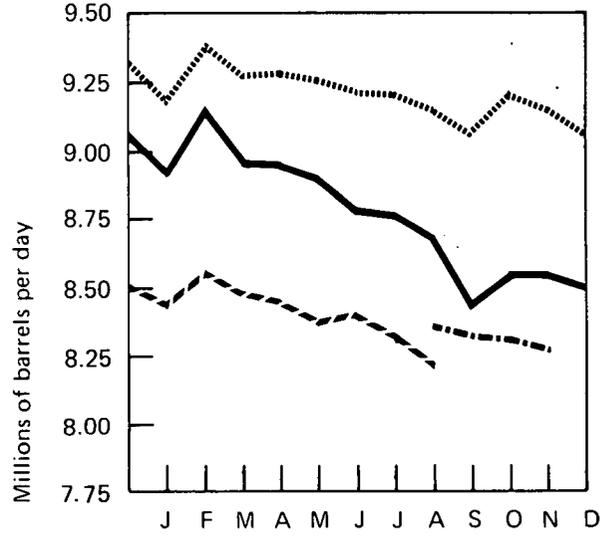
R=Revised data.

Sources: BOM, FEA, and API as indicated.

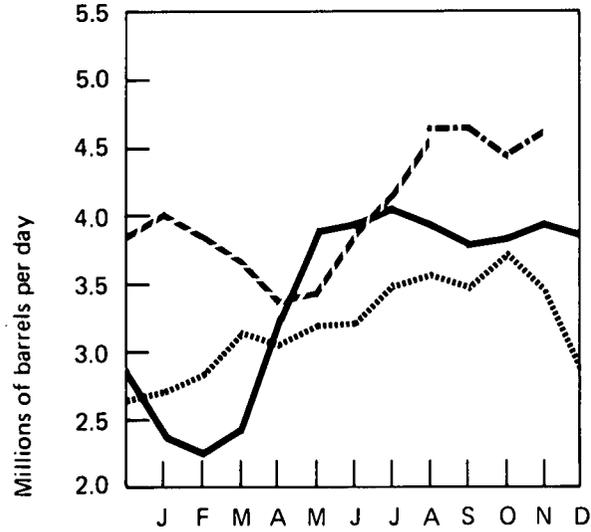
Crude Input to Refineries*



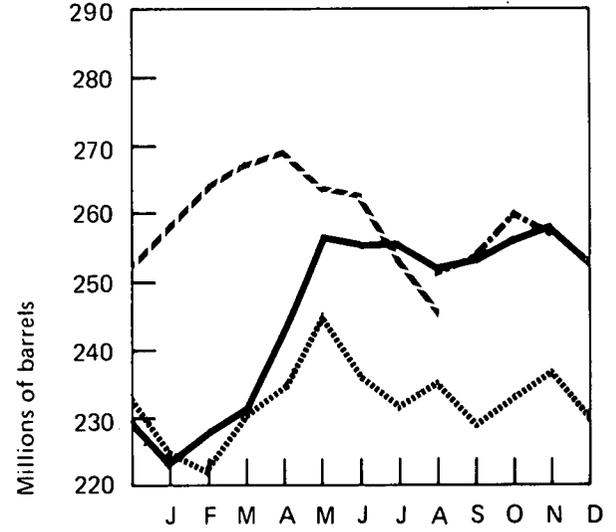
Domestic Production*



Imports*



Stocks*



*See Explanatory Note 3.

..... 1973
 — 1974 BOM
 - - - 1975 BOM
 - . - . 1975 FEA, API

Total Refined Petroleum Products

	Domestic Demand		Imports*	
	In thousands of barrels per day			
	BOM	FEA	BOM	FEA
1973				
January	18,713		3,125	
February	19,094		3,635	
March	17,216		3,448	
April	15,921		2,545	
May	16,626		2,626	
June	16,481		2,670	
July	16,372		2,678	
August	17,499		2,999	
September	16,656		2,941	
October	17,202		2,894	
November	18,492		3,470	
December	17,538		3,164	
AVERAGE	17,308		3,012	
1974				
January	17,270		2,973	
February	17,371		2,973	
March	16,045		2,753	
April	15,919		2,703	
May	15,720	15,740	2,580	2,454
June	16,176	16,191	2,493	2,218
July	16,301	15,853	2,397	2,140
August	16,546	15,803	2,434	2,281
September	15,994	16,318	2,225	2,180
October	17,025	17,121	2,340	2,361
November	17,214	17,129	2,704	2,581
December	17,997	17,588	2,781	2,638
AVERAGE	16,629		2,611	
1975				
January	17,983	18,112	2,811	2,484
February	17,248	17,370	2,348	2,138
March	16,316	16,567	2,074	1,920
April	16,041	16,105	1,655	1,810
May	15,118	15,306	1,690	1,776
June	15,611	15,688	1,502	1,602
July	15,762	15,880	1,789	1,875
August	15,767	16,241	1,678	1,870
September		15,798		2,144
October		R15,830		R1,696
November		**15,869		**1,604
AVERAGE*** (11 months)		16,115		1,906

*See definitions.

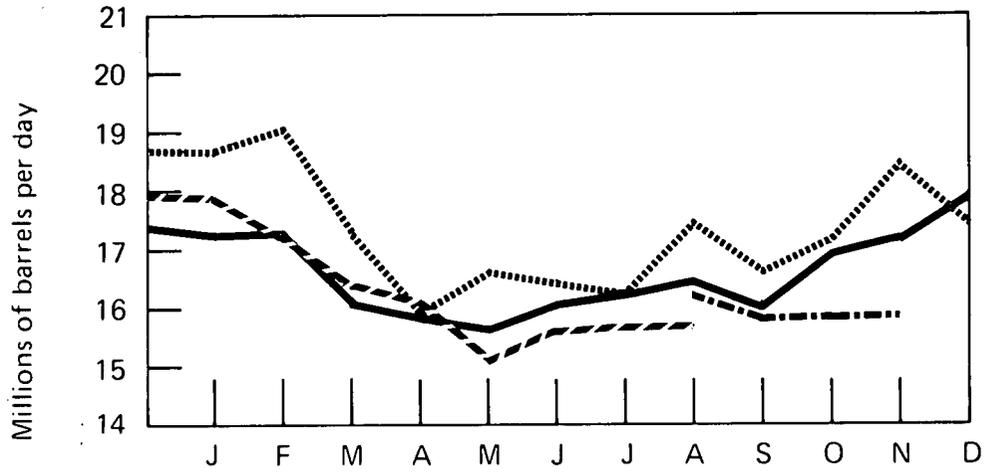
**Preliminary data.

***11-month average is based on Bureau of Mines (BOM) data for January through August and Federal Energy Administration (FEA) data for September through November.

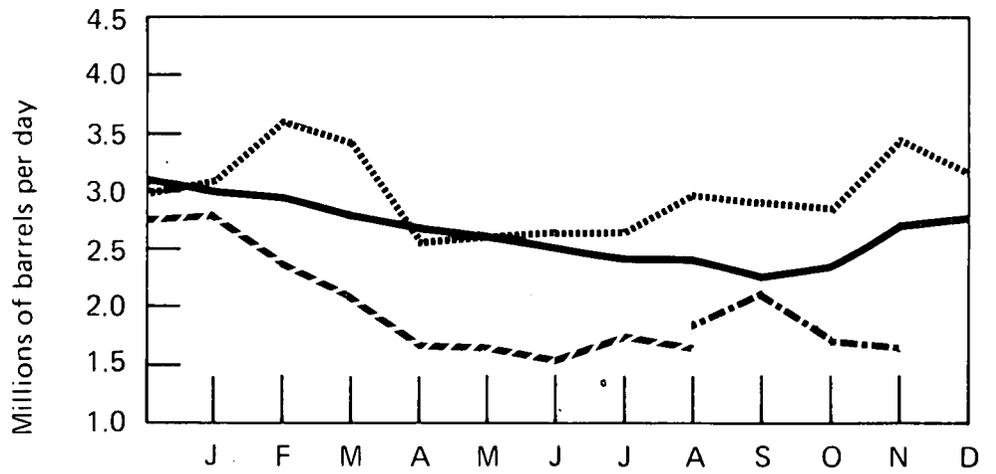
R=Revised data.

Sources: BOM and FEA as indicated.

Domestic Demand*



Imports*



..... 1973
 ——— 1974 BOM
 - - - 1975 BOM
 - . - 1975 FEA

*See Explanatory Note 3.

Motor Gasoline

	Domestic Demand		Production*		Imports		Stocks*	
	In thousands of barrels per day							
	BOM	FEA	BOM	FEA	BOM	FEA	BOM	FEA
1973								
January	6,118		6,341		59		221,823	
February	6,437		6,855		95		216,367	
March	6,513		6,150		71		207,581	
April	6,541		6,377		63		204,708	
May	6,907		6,714		101		202,081	
June	6,964		6,993		174		208,374	
July	7,023		6,986		133		211,488	
August	7,257		6,880		164		205,122	
September	6,581		6,619		127		210,278	
October	6,677		6,621		194		214,525	
November	6,823		6,375		216		207,343	
December	6,237		6,099		202		209,395	
AVERAGE	6,674		6,527		134			
1974								
January	5,804		5,900		163		217,463	
February	6,100		5,969		184		219,058	
March	6,162		5,982		225		220,307	
April	6,457		6,311		260		223,752	
May	6,745	6,406	6,328	6,301	250	228	218,670	229,878
June	6,919	6,895	6,663	6,642	211	145	217,381	226,652
July	6,959	6,941	6,792	6,835	212	122	218,838	227,195
August	7,061	6,849	6,815	6,776	253	192	218,951	231,015
September	6,388	6,652	6,453	6,485	202	140	227,031	230,181
October	6,712	6,542	6,336	6,340	171	175	220,748	229,275
November	6,547	6,659	6,292	6,257	174	264	218,385	225,226
December	6,558	6,551	6,419	6,451	141	170	224,719	227,363
AVERAGE	6,537		6,358		204			
1975								
January	6,206	6,228	6,509	6,574	262	203	242,285	244,425
February	6,096	6,205	6,276	6,279	171	168	251,915	251,189
March	6,326	6,408	6,070	6,068	150	146	248,685	245,181
April	6,718	6,574	6,046	5,997	133	127	232,556	231,542
May	6,871	6,855	6,126	6,063	142	135	213,947	211,183
June	7,076	6,951	6,669	6,622	177	156	207,114	205,713
July	7,041	6,957	7,003	6,992	209	167	212,454	211,942
August	7,008	7,103	6,872	6,843	232	275	215,480	212,370
September		6,740		6,782		246		221,020
October		R6,593		R6,396		R178		R220,390
November		**6,425		**6,599		**129		**229,441
AVERAGE*** (11 months)	6,649		6,488		185			

*See definitions.

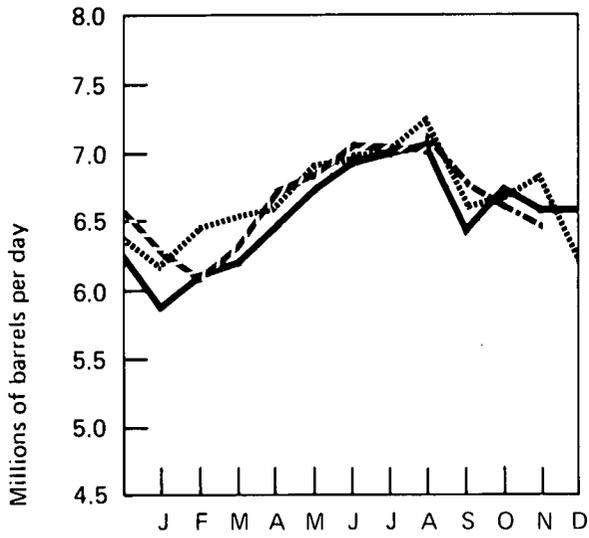
**Preliminary data.

***11-month average is based on Bureau of Mines (BOM) data for January through August and Federal Energy Administration (FEA) data for September through November.

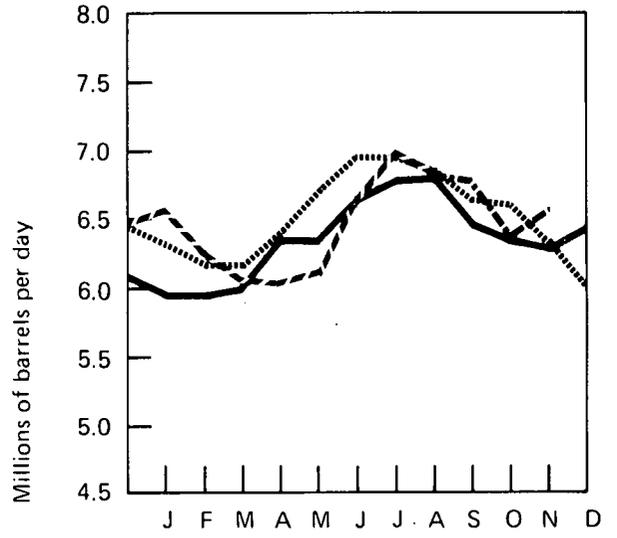
R=Revised data.

Sources: BOM and FEA as indicated.

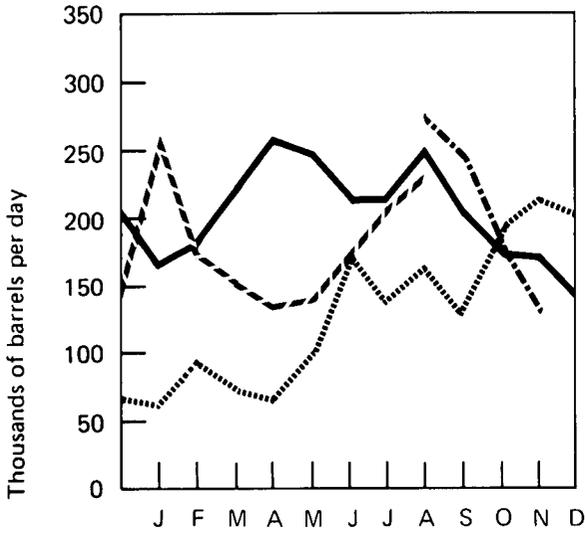
Domestic Demand*



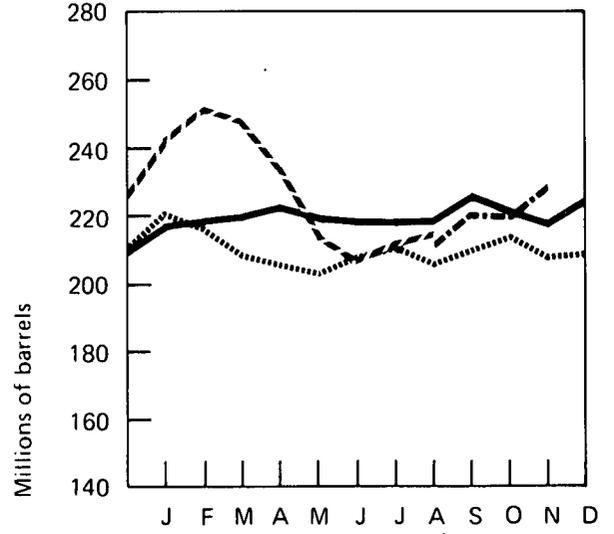
Production*



Imports*



Stocks*



..... 1973
 — 1974 BOM
 - - - 1975 BOM
 - · - 1975 FEA

*See Explanatory Note 3.

Jet Fuel

	Domestic Demand		Production		Imports		Stocks	
	In thousands of barrels per day							
	BOM	FEA	BOM	FEA	BOM	FEA	BOM	FEA
1973								
January	1,110		864		231		24,814	
February	1,090		898		221		25,437	
March	994		917		152		27,585	
April	1,015		887		145		27,881	
May	1,112		840		211		25,825	
June	1,007		836		164		25,447	
July	1,046		825		232		25,661	
August	1,049		844		180		24,851	
September	1,070		847		235		25,149	
October	1,104		875		246		25,577	
November	1,025		852		275		28,539	
December	1,087		830		259		28,544	
AVERAGE	1,059		859		212			
1974								
January	895		800		136		29,732	
February	860		783		75		29,617	
March	956		832		139		29,996	
April	941		868		132		31,725	
May	1,053	915	868	873	205	97	32,324	33,574
June	952	1,016	810	886	141	115	32,200	33,128
July	1,028	1,032	802	813	214	188	31,671	32,231
August	1,031	1,076	805	849	206	202	30,989	31,594
September	1,109	1,100	867	883	217	183	30,186	30,587
October	1,011	1,092	868	905	161	216	30,564	31,488
November	1,032	1,055	863	861	140	222	29,616	31,303
December	1,043	1,138	861	908	178	219	29,776	30,957
AVERAGE	993		836		163			
1975								
January	1,041	1,001	831	847	229	164	30,321	31,221
February	1,075	1,032	835	849	200	167	29,133	30,641
March	982	1,018	896	892	130	136	30,456	30,906
April	1,006	1,034	864	863	138	212	30,263	32,083
May	977	996	861	857	133	124	30,719	31,587
June	989	996	839	837	106	112	29,337	30,122
July	954	984	883	880	88	106	29,798	30,167
August	1,046	1,032	958	955	132	108	31,103	31,105
September		950		901		116		33,053
October		R945		R814		R65		R30,978
November		*961		*859		*57		*29,567
AVERAGE**		993		868		126		
(11 months)								

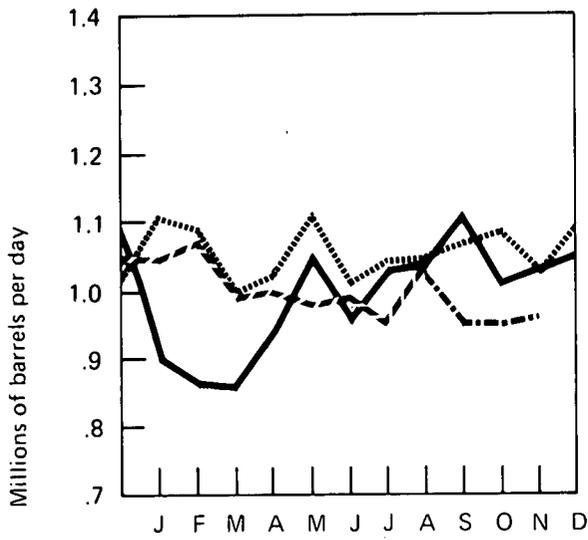
*Preliminary data.

**11-month average is based on Bureau of Mines (BOM) data for January through August and Federal Energy Administration (FEA) data for September through November.

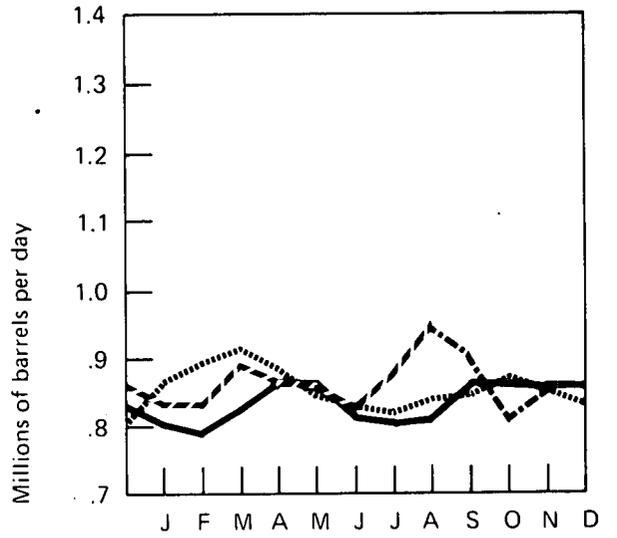
R=Revised data.

Source: BOM and FEA as indicated.

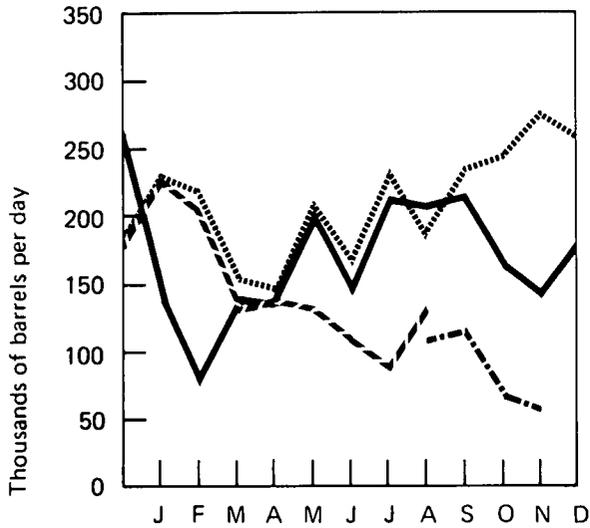
Domestic Demand*



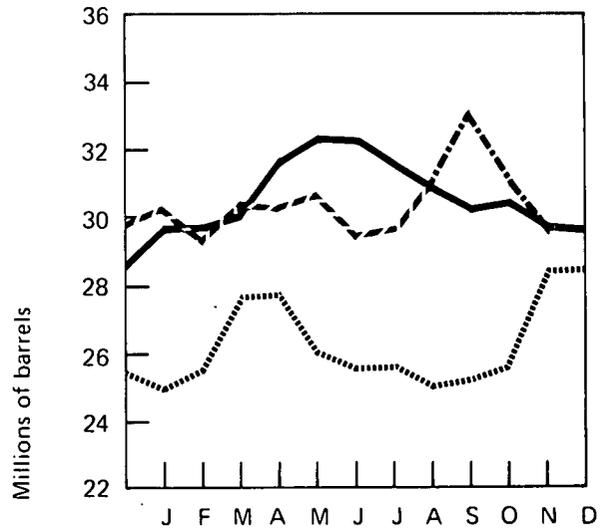
Production*



Imports*



Stocks*



..... 1973
 ——— 1974 BOM
 - - - 1975 BOM
 - · - 1975 FEA

*See Explanatory Note 3.

Distillate Fuel Oil

	Domestic Demand		Production*		Imports		Stocks*	
	In thousands of barrels per day							
	BOM	FEA	BOM	FEA	BOM	FEA	BOM	FEA
1973								
January	4,138		3,028		364		130,958	
February	4,302		2,937		731		113,276	
March	3,337		2,667		602		111,270	
April	2,635		2,510		240		114,698	
May	2,673		2,544		268		119,104	
June	2,419		2,825		222		137,844	
July	2,328		2,752		318		160,869	
August	2,555		2,801		288		177,271	
September	2,675		2,813		313		190,171	
October	2,930		2,911		451		202,965	
November	3,508		2,922		492		200,182	
December	3,690		3,136		439		196,421	
AVERAGE	3,092		2,820		392			
1974								
January	3,820		2,880		449		181,179	
February	3,835		2,399		293		149,125	
March	3,145		2,226		267		128,822	
April	2,848		2,522		216		125,553	
May	2,453	2,616	2,704	2,741	271	288	141,806	151,345
June	2,386	2,249	2,783	2,818	228	175	160,645	173,639
July	2,302	2,251	2,792	2,881	214	168	182,458	198,374
August	2,295	2,271	2,704	2,779	111	112	198,673	217,632
September	2,377	2,473	2,551	2,655	144	143	208,269	227,069
October	2,863	2,816	2,770	2,787	213	264	209,908	234,257
November	3,145	3,058	2,801	2,883	443	403	212,875	241,125
December	3,855	3,923	2,924	3,028	517	466	223,717	227,877
AVERAGE	2,939		2,668		281			
1975								
January	3,953	4,055	2,852	2,954	324	350	199,715	204,576
February	3,967	4,004	2,679	2,707	302	295	176,696	176,530
March	3,293	3,460	2,531	2,614	256	217	161,111	156,980
April	3,094	3,103	2,486	2,532	110	131	146,214	143,714
May	2,382	2,435	2,431	2,496	136	144	152,027	150,068
June	2,266	2,272	2,574	2,639	68	74	163,306	163,252
July	2,112	2,147	2,589	2,659	106	124	R181,472	182,975
August	2,173	2,237	2,592	2,650	92	91	197,323	198,539
September		2,184		2,844		111		221,659
October		R2,631		R2,778		R106		R229,439
November		**2,642		**2,851		**94		**238,529
AVERAGE***	2,783		2,655		154			
(11 months)								

*See definitions.

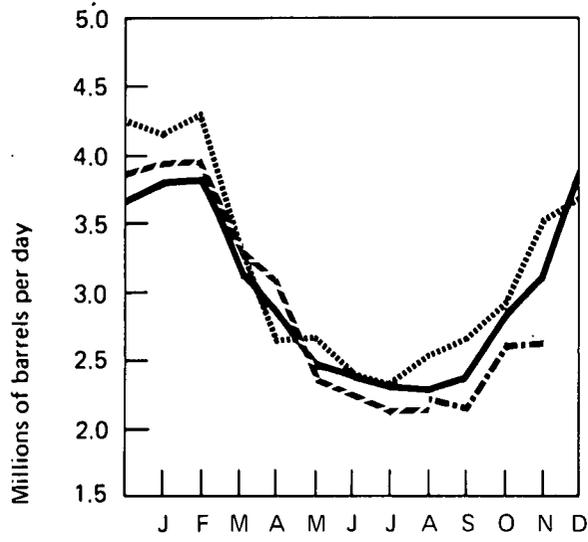
**Preliminary data.

***11-month average is based on Bureau of Mines (BOM) data for January through August and Federal Energy Administration (FEA) data for September through November.

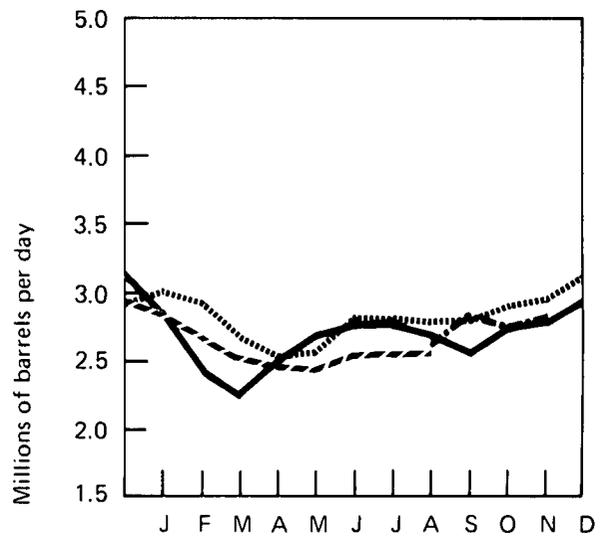
R=Revised data.

Source: BOM and FEA as indicated.

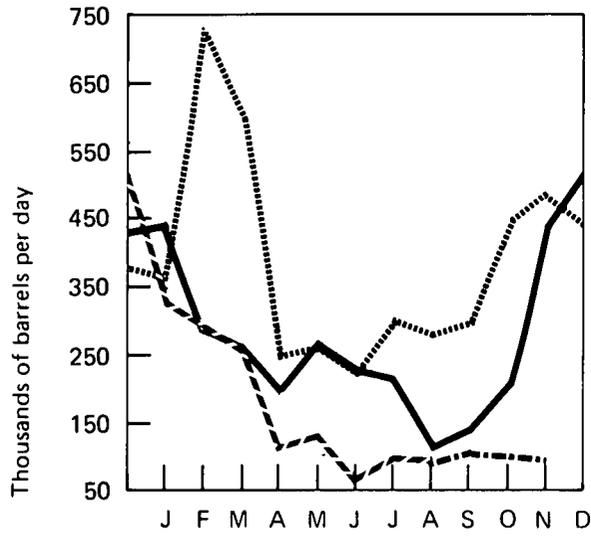
Domestic Demand*



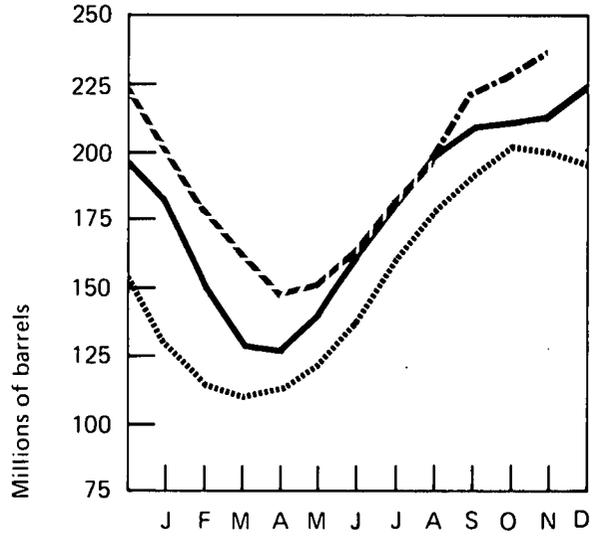
Production*



Imports*



Stocks*



..... 1973
 — 1974 BOM
 - - - 1975 BOM
 - · - 1975 FEA

*See Explanatory Note 3.

Oil Heating Degree-Days

OIL HEATING DEGREE-DAYS*

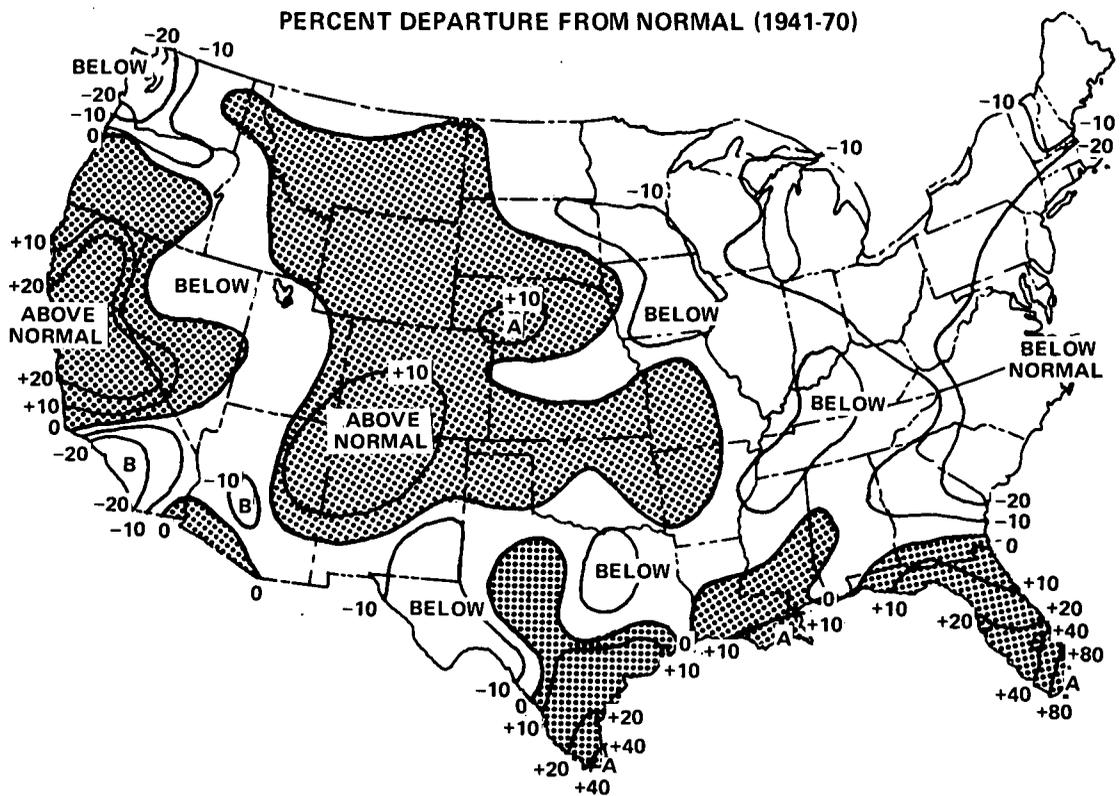
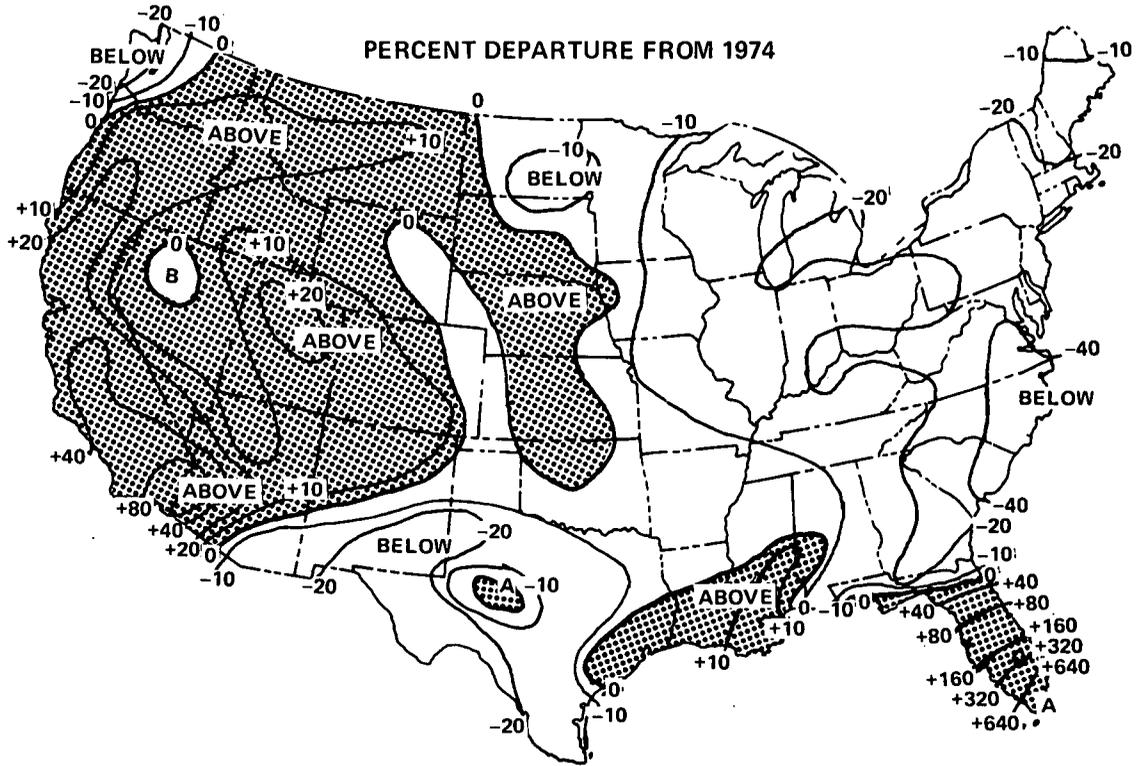
Petroleum Administration for Defense (PAD) Districts	NOVEMBER (October 27 - November 30)			Cumulative Since July 1, 1975		
	1975	1974**	Normal (1941-1970)**	1975	1974	Normal (1941-1970)**
PAD District I	472.4	561.4 (-15.9)	592.4 (-20.3)	711.4	956.2 (-25.6)	847.0 (-16.0)
New England	715.0	846.2 (-15.5)	837.1 (-14.6)	1251.5	1556.1 (-19.6)	1367.8 (- 8.5)
Conn., Maine, Mass., N.H., R.I., Vt.						
Middle Atlantic	463.9	563.1 (-17.6)	626.1 (-25.9)	661.0	941.7 (-29.8)	856.0 (-22.8)
Del., Md., N.J., N.Y., Pa.						
Lower Atlantic	336.6	389.5 (-13.6)	410.0 (-17.9)	443.1	613.7 (-27.8)	526.4 (-15.8)
Fla., Ga., N.C., S.C., Va., W. Va.						
PAD District II	754.0	757.5 (-0.5)	842.4 (-10.5)	1164.6	1262.2 (- 7.7)	1222.6 (-4.7)
Ill., Ind., Iowa, Kans., Ky., Mich., Minn., Mo., Nebr., N. Dak., Ohio, Okla., S. Dak., Tenn., Wisc.						
PAD District III	369.3	359.2 (2.8)	394.8 (-6.5)	477.5	475.8 (0.4)	476.6 (0.2)
Ala., Ark., La., Miss., N. Mex., Tex.						
PAD District IV	931.6	787.4 (18.3)	894.8 (4.1)	1375.0	1199.8 (14.6)	1379.1 (-0.3)
Colo., Idaho, Mont., Utah, Wyo.						
PAD District V	299.8	277.5 (8.0)	302.7 (-1.0)	418.4	366.7 (14.1)	432.2 (-3.2)
Ariz., Calif., Nev., Oreg., Wash.						
U.S. TOTAL	694.5	712.2 (-2.5)	779.4 (-10.9)	1044.0	1159.0 (-9.9)	1128.7 (-7.5)

*See Explanatory Note 4 for explanation of oil heating degree-days.

**Percentage change in parentheses.

HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1, 1975

November 30, 1975



NOTE: Above normal heating degree-days correspond to below normal temperatures.
Source: Department of Commerce-NOAA.

Residual Fuel Oil

	Domestic Demand		Production		Imports		Stocks		
	In thousands of barrels per day								
	BOM	FEA	BOM	FEA	BOM	FEA	BOM	FEA	
1973	January	3,306		1,112		2,019		49,154	
	February	3,382		1,038		2,147		43,058	
	March	3,084		955		2,196		44,711	
	April	2,477		877		1,705		47,044	
	May	2,521		948		1,668		49,207	
	June	2,607		915		1,761		51,811	
	July	2,412		882		1,597		53,363	
	August	2,755		851		1,913		53,586	
	September	2,676		878		1,849		55,091	
	October	2,590		984		1,597		54,964	
	November	3,158		1,061		1,979		51,985	
	December	2,944		1,158		1,826		53,480	
	AVERAGE	2,822		971		1,853			
1974	January	3,035		1,072		1,732		46,548	
	February	3,010		1,029		1,923		45,004	
	March	2,516		912		1,674		47,222	
	April	2,432		984		1,587		51,339	
	May	2,251	2,111	995	992	1,353	1,250	54,356	64,548
	June	2,455	2,177	1,026	1,058	1,549	1,260	57,891	68,646
	July	2,432	2,135	1,056	1,091	1,433	1,197	59,787	73,066
	August	2,539	2,368	1,067	1,126	1,530	1,342	60,988	76,011
	September	2,454	2,419	1,032	1,070	1,400	1,274	60,251	72,723
	October	2,610	2,501	1,099	1,112	1,464	1,369	58,679	72,090
	November	2,819	2,631	1,229	1,226	1,636	1,453	60,363	73,581
	December	2,965	2,881	1,335	1,350	1,612	1,561	74,939	74,521
	AVERAGE	2,624		1,070		1,572			
1975	January	3,242	3,103	1,415	1,399	1,647	1,529	60,233	68,628
	February	2,849	2,723	1,354	1,304	1,402	1,308	66,495	65,061
	March	2,668	2,589	1,299	1,244	1,292	1,252	64,148	61,891
	April	2,225	2,184	1,245	1,204	1,047	1,069	66,340	64,121
	May	2,049	1,909	1,151	1,113	1,123	1,068	73,498	72,088
	June	2,179	2,201	1,152	1,118	904	953	69,660	67,641
	July	2,239	2,141	1,155	1,160	1,144	1,110	71,526	71,358
	August	2,118	2,217	1,146	1,151	982	1,044	71,857	70,489
	September		2,388		1,178		1,319		73,471
	October		R2,025		R1,142		R1,153		R81,192
	November		*2,403		*1,230		*1,153		*80,113
	AVERAGE** (11 months)	2,396		1,223		1,196			

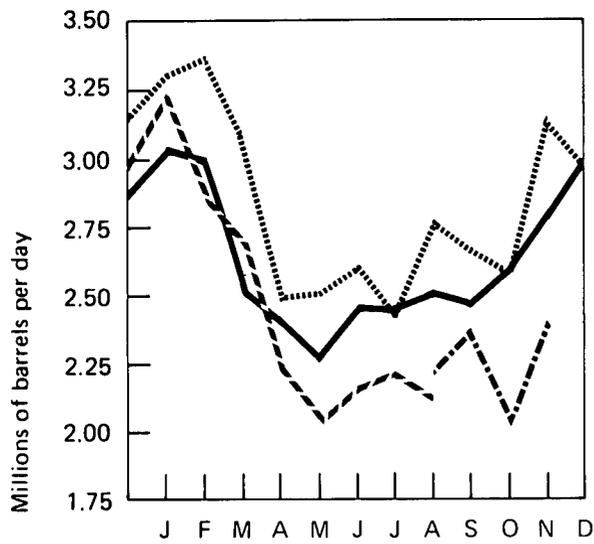
*Preliminary data.

**11-month average is based on Bureau of Mines (BOM) data for January through August and Federal Energy Administration (FEA) data for September through November.

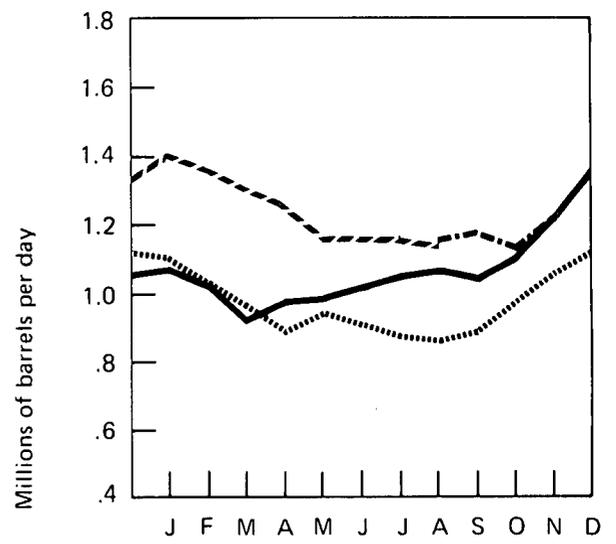
R=Revised data.

Sources: BOM and FEA as indicated.

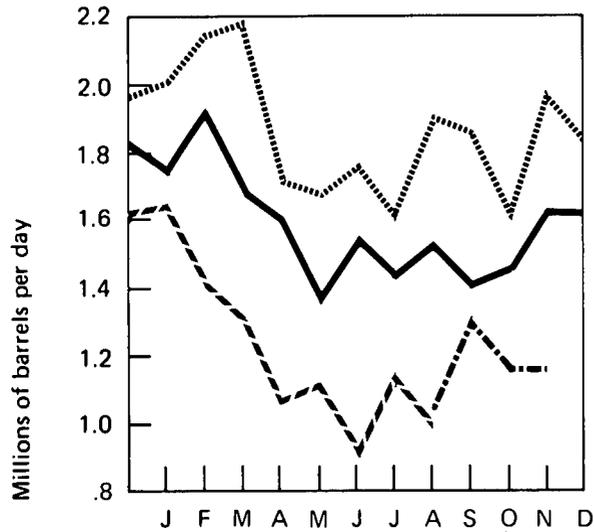
Domestic Demand*



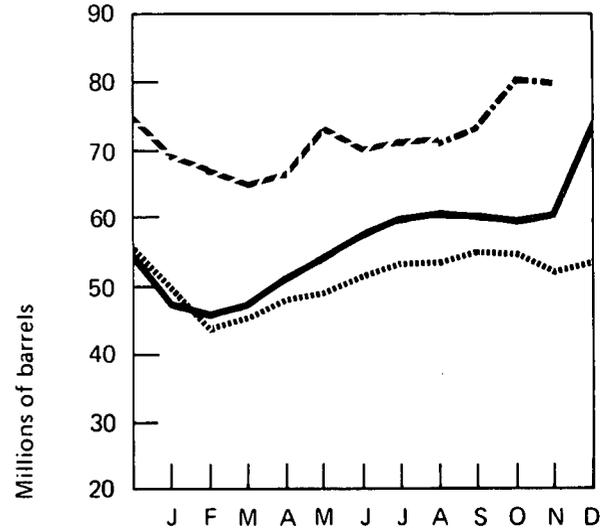
Production*



Imports*



Stocks*



..... 1973
 — 1974 BOM
 - - - 1975 BOM
 - · - 1975 FEA

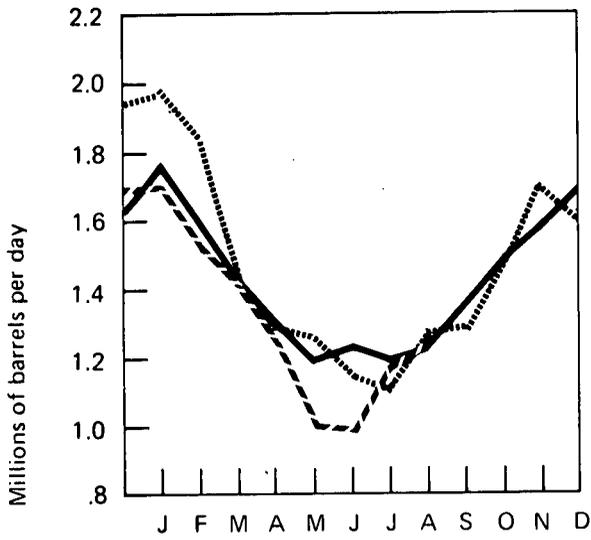
*See Explanatory Note 3.

Natural Gas Liquids

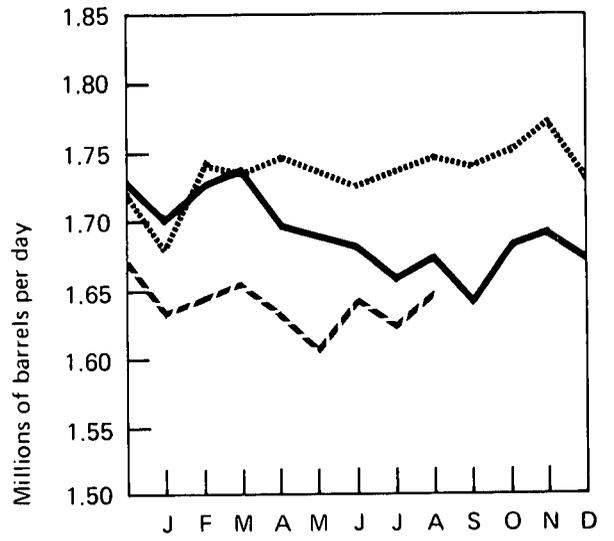
	Domestic Demand*	Production*		Used at Refineries*	Imports	Stocks*
		At processing plants	At refineries			
		In thousands of barrels per day				
1973						
January	1,994	1,680	361	839	312	68,792
February	1,857	1,745	359	836	312	60,606
March	1,407	1,734	378	790	260	63,873
April	1,299	1,750	373	733	201	71,266
May	1,270	1,739	421	733	217	80,650
June	1,149	1,727	388	757	163	89,433
July	1,109	1,737	410	849	199	99,631
August	1,281	1,748	390	858	240	105,068
September	1,297	1,741	370	833	206	110,002
October	1,499	1,756	377	835	249	109,639
November	1,703	1,774	331	876	286	104,192
December	1,607	1,729	338	842	232	98,940
AVERAGE	1,454	1,738	375	815	239	
1974						
January	1,778	1,699	327	794	304	91,210
February	1,593	1,728	337	777	294	90,145
March	1,408	1,741	341	720	224	94,817
April	1,321	1,696	353	690	215	101,352
May	1,180	1,690	340	678	182	110,881
June	1,242	1,684	368	718	199	117,915
July	1,187	1,657	364	723	163	125,427
August	1,221	1,676	361	742	163	131,675
September	1,360	1,638	348	738	166	133,215
October	1,493	1,686	330	788	200	130,557
November	1,596	1,694	301	795	199	124,447
December	1,692	1,670	286	796	230	114,295
AVERAGE	1,422	1,688	338	746	211	
1975						
January	1,708	1,630	307	756	257	105,400
February	1,512	1,646	296	734	181	100,945
March	1,404	1,658	280	731	178	99,168
April	1,242	1,635	273	667	176	100,408
May	1,002	1,607	299	628	97	112,737
June	998	1,646	323	659	166	125,215
July	1,191	1,621	336	701	173	131,359
August	1,227	1,650	357	690	163	137,074
AVERAGE (8 months)	1,284	1,636	309	695	174	

*See Explanatory Note 5.
Source: Bureau of Mines.

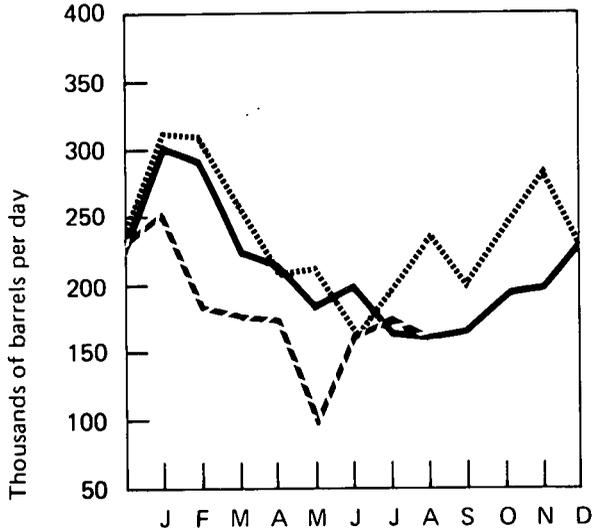
Domestic Demand



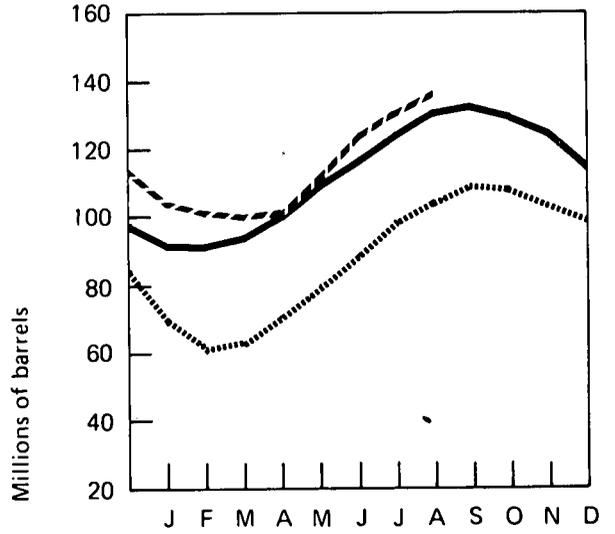
Production at Processing Plants



Imports



Stocks



..... 1973
—— 1974
- - - 1975

Natural Gas

		Domestic Consumption*	Marketed Production*	Domestic Producer Sales to Major Interstate Pipelines	Imports
In billion cubic feet					
1973	January	2,348	1,994	1,069	93
	February	2,126	1,821	963	84
	March	2,015	1,952	1,052	91
	April	1,835	1,864	1,007	88
	May	1,729	1,898	1,026	86
	June	1,534	1,839	963	79
	July	1,558	1,880	999	80
	August	1,582	1,896	994	85
	September	1,527	1,840	956	82
	October	1,708	1,875	1,001	91
	November	1,905	1,863	1,000	85
	December	2,182	1,926	1,038	89
	TOTAL	22,049	22,648	12,067	1,033
1974	January	2,230	1,929	1,033	86
	February	2,054	1,759	941	79
	March	2,003	1,886	1,027	85
	April	1,691	1,793	987	83
	May	1,608	1,846	981	80
	June	1,439	1,740	928	74
	July	1,514	1,818	947	74
	August	1,510	1,790	932	76
	September	1,537	1,755	871	70
	October	1,706	1,767	936	83
	November	1,827	1,729	921	82
	December	2,104	1,790	959	87
	TOTAL	21,223	21,601	11,463	959
1975	January	2,123	1,771	950	81
	February	1,943	1,635	867	75
	March	1,904	1,733	948	83
	April	1,651	1,669	906	83
	May	1,335	1,681	898	81
	June	1,255	1,626	859	78
	July	1,310	1,669	873	79
	August	1,370	R1,668	882	76
	September	R1,372	R**1,600	836	R74
	October	1,600	†1,660		182
	November	1,740	†1,660		180
	TOTAL	17,603 (11 months)	18,372 (11 months)	8,019 (9 months)	872 (11 months)

*See Explanatory Note 6.

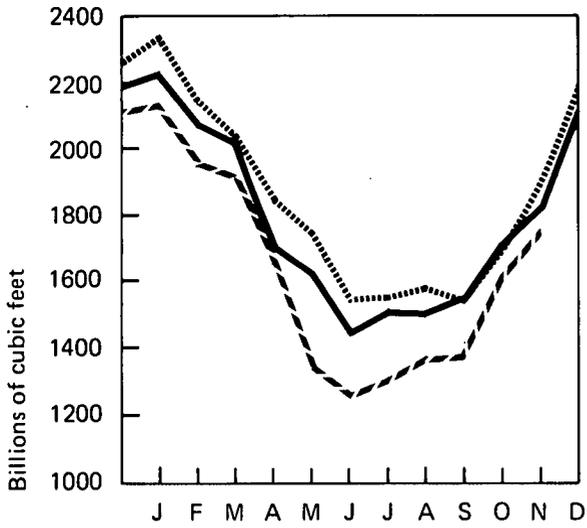
**Preliminary data.

†Projected data.

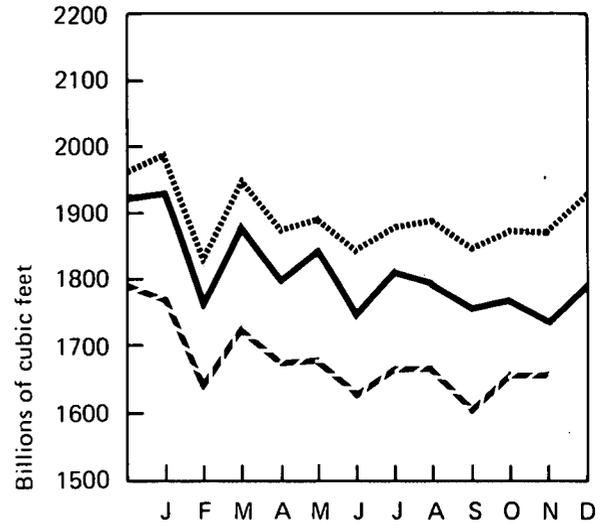
R=Revised data.

Sources: Consumption, Marketed Production, and Imports—Bureau of Mines. Domestic Producer Sales—Federal Power Commission.

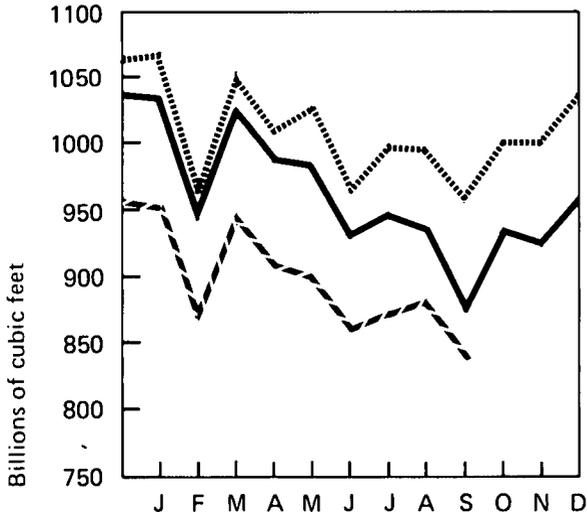
Domestic Consumption



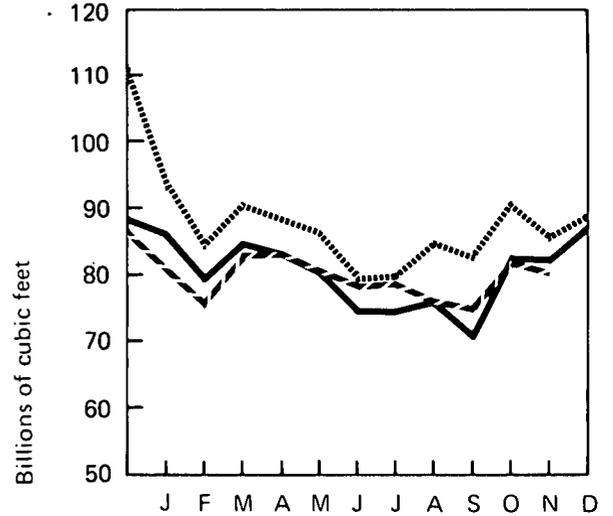
Marketed Production



Domestic Producer Sales to Major Interstate Pipelines



Imports



..... 1973
 ——— 1974
 - - - 1975

Coal

Bituminous and Lignite

		Domestic Consumption*	Production**	Exports	Stocks
		In thousands of short tons			
1973	January	49,838	49,379	2,954	111,120
	February	44,652	45,893	2,669	108,870
	March	44,814	50,547	3,377	111,490
	April	42,689	46,999	5,063	112,585
	May	43,628	51,420	5,140	116,890
	June	45,115	46,613	4,969	109,960
	July	47,715	43,801	4,188	107,390
	August	48,840	55,874	5,133	106,910
	September	45,471	48,338	3,424	106,230
	October	46,427	54,382	5,882	107,490
	November	46,703	49,826	5,214	107,169
	December	50,130	48,666	4,889	103,022
		TOTAL ***	556,022	591,738	52,903
1974	January	50,046	R53,712	2,813	97,836
	February	44,929	R50,053	4,627	95,812
	March	45,858	R51,278	3,179	101,568
	April	43,595	R54,402	4,944	107,167
	May	44,951	R57,662	6,032	112,882
	June	44,315	R48,065	6,369	111,935
	July	48,605	R49,392	5,307	106,160
	August	48,579	R51,808	5,088	105,478
	September	43,844	R52,686	4,893	109,173
	October	45,868	R60,495	7,342	118,670
	November	44,598	R33,702	6,744	109,192
	December	47,521	R40,151	2,587	95,528
		TOTAL ***	552,709	R603,406	59,926
1975	January	49,669	54,885	4,254	96,024
	February	45,725	51,135	4,470	97,164
	March	47,396	51,910	5,653	97,904
	April	43,753	53,135	6,159	102,745
	May	42,683	55,370	7,011	109,796
	June	44,887	55,730	6,269	115,041
	July	47,485	45,560	4,691	109,313
	August	49,091	R51,160	5,859	108,680
	September	43,818	R55,560	4,529	112,102
	October		61,000	4,647	
	November		†53,010		
		TOTAL ***	414,507 (9 months)	588,455 (11 months)	53,542 (10 months)

*See Explanatory Note 7.

**See Explanatory Note 8.

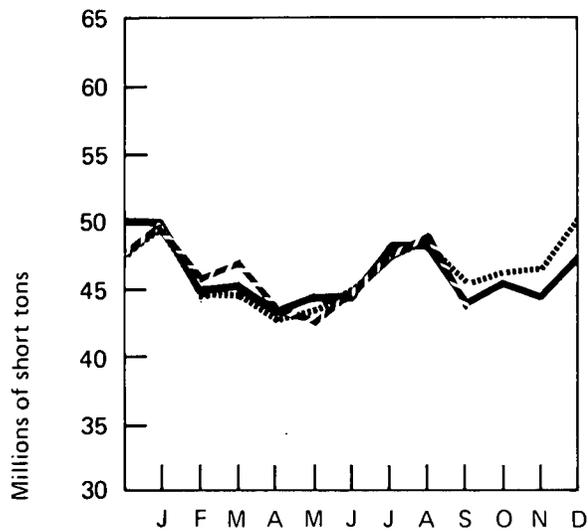
***Totals may not add due to rounding.

†Preliminary data.

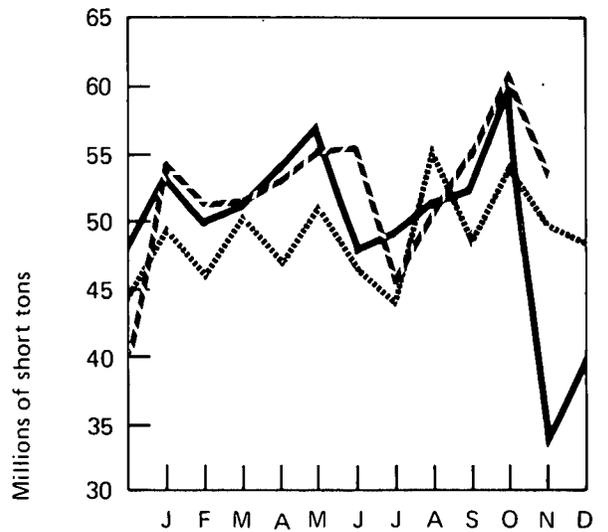
R=Revised data.

Source: Bureau of Mines.

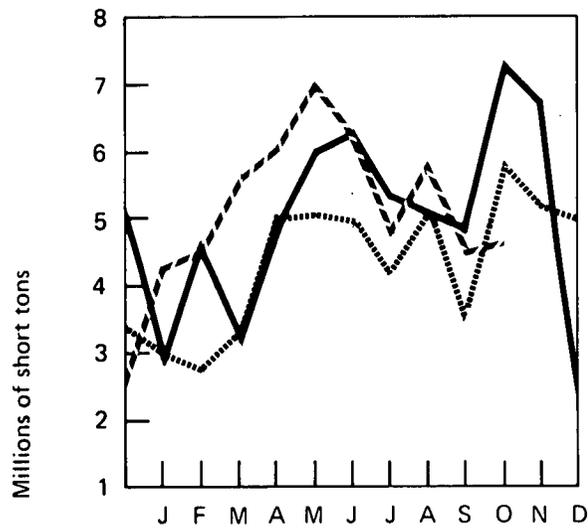
Domestic Consumption



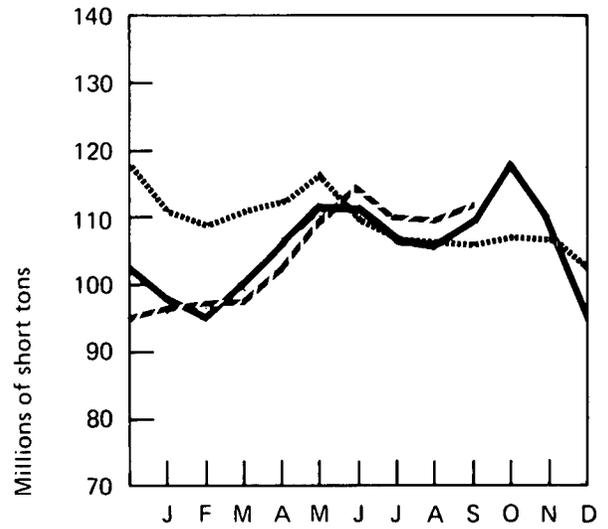
Production



Exports



Stocks



..... 1973
— 1974
- - - 1975

ELECTRIC UTILITIES

Preliminary data indicate that November 1975 production of electricity by utilities was 153.1 billion kilowatt hours, 2.4 percent above the level for November 1974. Production in the first 11 months of 1975 totaled 1,740 billion kilowatt hours, up 2.0 percent from the 1,706 billion kilowatt hours produced during the same period in 1974.

Coal stockpiles at powerplants increased from a 79-day supply at the end of August to a 90-day supply at the end of September; oil stockpiles increased from a 76- to a 102-day supply during the same period.

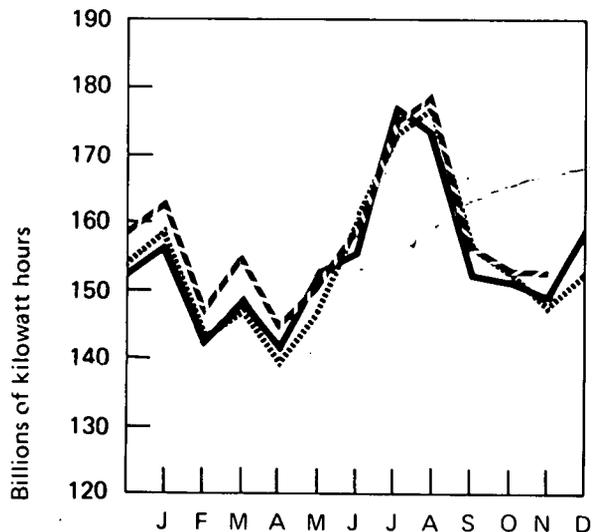
Electric utility consumption of natural gas during September was 315.2 billion cubic feet, 0.7 percent above consumption for September 1974. During the first 9 months of 1975, electric utilities consumed 2.9 percent more coal, but 1.2 percent less oil and 9.5 percent less gas than during the same months in 1974.

Sales of electricity to residential and commercial customers during the first 9 months of 1975 totaled 780.0 billion kilowatt hours, an increase of 6.5 percent for residential customers and 7.4 percent for commercial customers over sales for the corresponding period in 1974. Sales to industry, on the other hand, at 487.4 billion kilowatt hours, were down 5.7 percent from the level for the first 9 months of 1974.

Electric Utilities

		Total Net Production		Percentage Produced from Each Source					
		In millions of kilowatt hours		Coal	Oil	Gas	Nuclear	Hydro-electric	Other*
1973	January	159,320	47.2	19.4	13.1	3.9	16.3	0.1	
	February	143,109	47.4	18.2	14.1	4.1	16.1	0.1	
	March	147,754	45.7	16.2	16.2	4.5	17.3	0.1	
	April	139,273	46.1	14.4	17.9	4.2	17.3	0.1	
	May	147,021	44.3	14.7	20.2	3.9	16.8	0.1	
	June	160,962	43.3	16.1	21.6	4.2	14.7	0.1	
	July	173,461	43.9	16.5	22.6	4.0	12.9	0.1	
	August	177,022	44.4	17.3	21.9	4.4	11.9	0.1	
	September	156,294	45.7	17.3	21.1	4.9	10.9	0.1	
	October	153,797	45.6	17.7	19.9	4.9	11.8	0.1	
	November	147,823	47.2	17.6	16.1	5.5	13.5	0.1	
	December	153,284	47.9	16.3	13.3	5.3	17.0	0.2	
	TOTAL	R1,859,120	AVERAGE 45.7	16.8	18.3	4.5	14.6	0.1	
1974	January	156,906	47.0	16.6	13.3	4.8	18.2	0.1	
	February	142,371	46.6	15.7	13.3	5.6	18.6	0.2	
	March	149,933	45.3	14.6	15.8	5.8	18.4	0.1	
	April	R141,914	44.5	13.9	16.9	4.9	19.6	0.2	
	May	153,439	44.3	14.7	18.4	4.2	18.2	0.2	
	June	156,027	43.3	14.7	20.3	4.4	17.1	0.2	
	July	R177,798	42.9	15.6	20.9	5.6	14.8	0.2	
	August	173,699	43.1	15.6	20.3	7.0	13.8	0.2	
	September	R152,084	42.9	16.4	19.3	7.1	14.1	0.2	
	October	151,786	44.3	16.7	18.6	7.0	13.2	0.2	
	November	149,581	44.9	18.4	15.2	7.2	14.1	0.2	
	December	159,309	45.6	19.3	12.4	8.1	14.4	0.2	
	TOTAL	1,864,847	AVERAGE 44.5	16.1	17.2	6.0	16.1	0.1	
1975	January	163,498	45.8	18.7	12.1	8.1	15.2	0.1	
	February	146,338	46.0	17.0	12.3	8.3	16.3	0.1	
	March	154,932	44.6	15.0	13.0	9.2	18.1	0.1	
	April	145,289	44.2	14.6	14.0	8.7	18.3	0.2	
	May	151,168	42.5	13.9	16.9	8.2	18.3	0.2	
	June	159,963	43.4	14.3	18.0	7.2	16.9	0.2	
	July	175,856	43.1	14.2	19.4	8.6	14.5	0.2	
	August	179,202	43.9	15.6	19.0	8.7	12.6	0.2	
	September	R156,802	44.8	13.7	19.1	9.1	13.1	0.2	
	October	153,655							
	November	153,111							
	TOTAL (11 months)	1,739,814	AVERAGE 44.2 (9 months)	15.2	16.1	8.5	15.8	0.2	

Total Net Production



*Includes electricity produced from geothermal power, wood, and waste.

R=Revised data.

Sources: Federal Power Commission.

Production data for latest 2 months are from Edison Electric Institute.

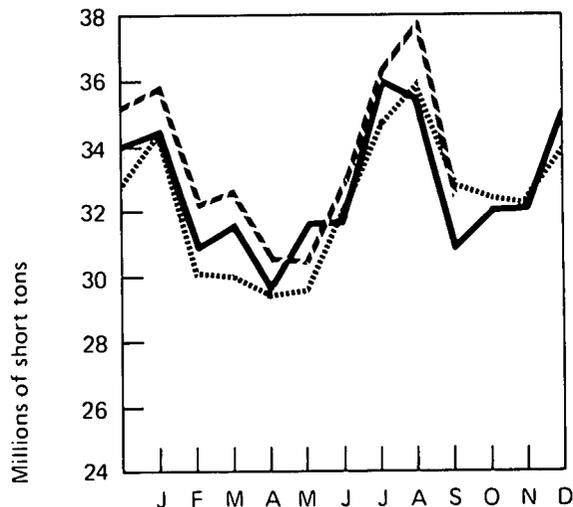
..... 1973
 ——— 1974
 - - - 1975

Fuel Consumption

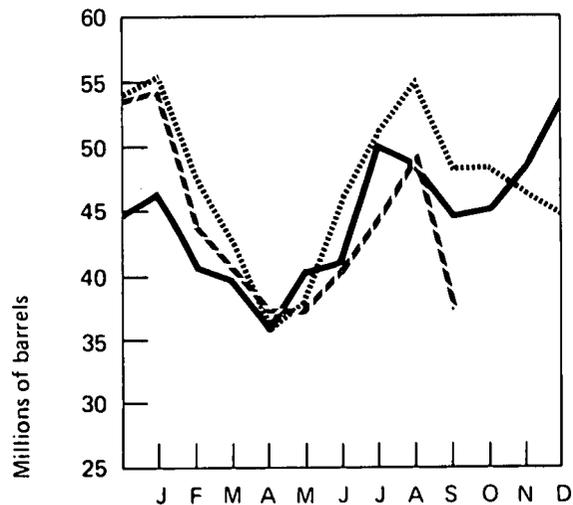
		Coal	Oil	Gas
		In thousands of short tons	In thousands of barrels	In millions of cubic feet
1973	January	34,591	55,773	219,270
	February	30,921	46,978	212,983
	March	30,746	42,701	255,314
	April	29,209	35,845	267,151
	May	29,683	38,097	316,989
	June	31,951	46,421	371,221
	July	34,863	51,352	422,396
	August	36,093	55,356	419,507
	September	32,814	48,103	353,040
	October	32,470	48,188	328,630
	November	32,154	46,420	252,341
	December	34,141	44,850	216,988
TOTAL	389,636	560,084	3,635,830	
1974	January	34,599	46,745	219,338
	February	30,857	40,687	201,587
	March	31,638	39,645	254,175
	April	29,679	35,959	259,313
	May	31,700	40,831	306,945
	June	31,719	41,227	346,584
	July	36,111	50,119	403,391
	August	35,555	48,970	380,585
	September	30,989	44,550	313,079
	October	32,127	45,268	298,109
	November	32,211	48,525	238,908
	December	35,176	53,648	207,095
TOTAL	392,361	536,174	3,429,109	
1975	January	35,853	54,169	204,931
	February	32,104	43,670	188,684
	March	32,783	40,399	210,283
	April	30,452	37,099	213,580
	May	30,410	37,015	271,790
	June	33,058	40,791	306,147
	July	36,367	44,329	359,160
	August	37,839	49,262	359,117
	September	32,488	37,207	315,165
TOTAL	301,354	383,941	2,428,857	

(9 months).

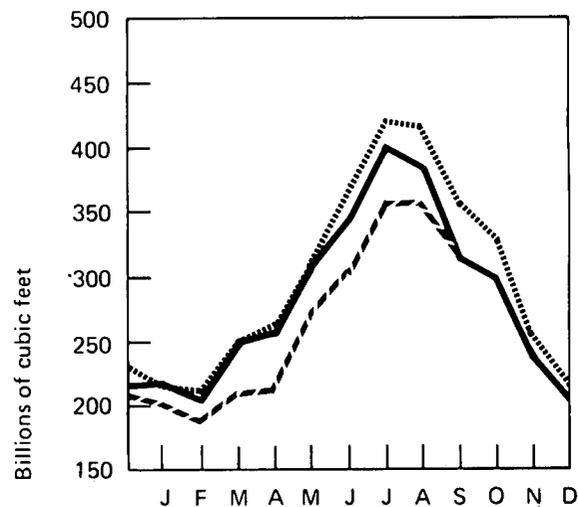
Coal Consumption



Oil Consumption



Gas Consumption



..... 1973
 ——— 1974
 - - - 1975

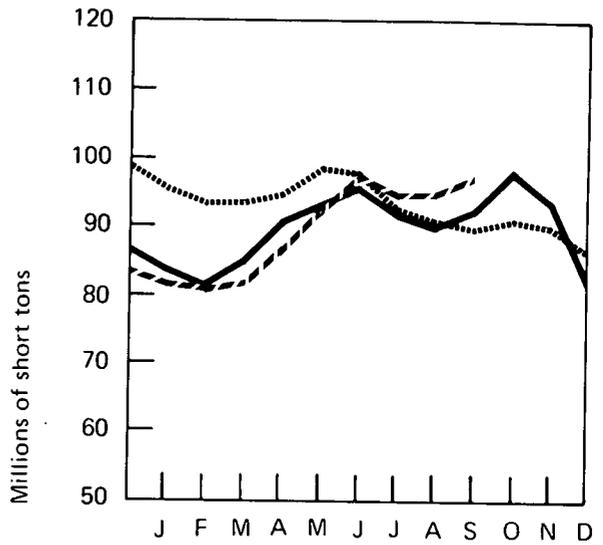
Source: Federal Power Commission.

Electric Utilities (Continued)

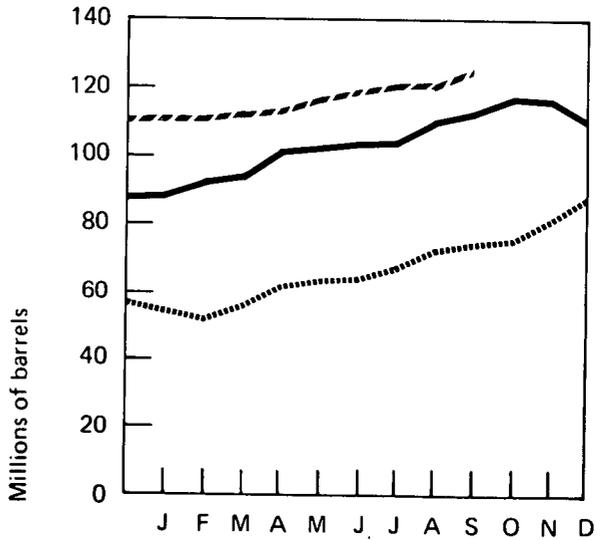
Stocks at End of Month

		Coal	Oil
		In thousands of short tons	In thousands of barrels
1973	January	95,017	53,691
	February	92,993	50,858
	March	93,986	54,885
	April	94,991	62,411
	May	98,722	64,259
	June	97,995	65,003
	July	92,215	67,987
	August	91,356	73,259
	September	90,156	74,863
	October	91,428	76,343
	November	90,369	81,224
	December	86,880	88,228
1974	January	83,366	89,053
	February	80,962	92,645
	March	84,257	94,187
	April	90,901	100,210
	May	93,628	103,606
	June	95,811	104,316
	July	91,616	105,919
	August	89,691	110,997
	September	92,704	113,570
	October	98,373	117,564
	November	93,825	116,558
	December	83,652	111,990
1975	January	81,429	110,304
	February	81,065	111,581
	March	81,872	113,377
	April	86,656	113,930
	May	93,027	116,940
	June	97,834	119,653
	July	94,067	121,076
	August	94,107	120,601
	September	97,790	126,137

Coal Stocks



Oil Stocks

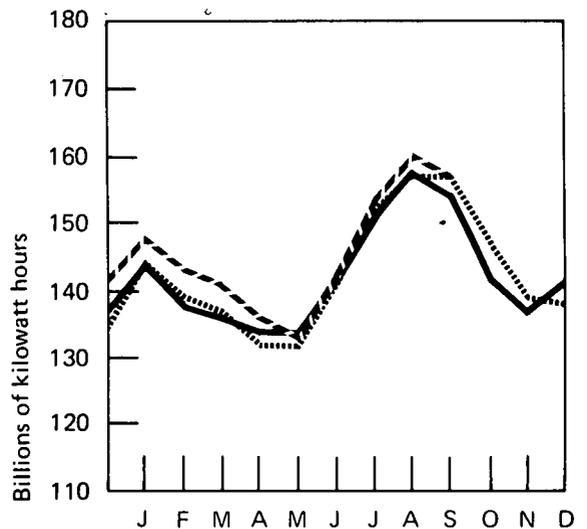


..... 1973
 ——— 1974
 - - - 1975

Sales

		Residential	Commercial	Industrial	Other*	Total
In millions of kilowatt hours						
1973	January	52,840	31,182	55,274	5,209	144,505
	February	49,601	30,445	54,591	4,909	139,546
	March	46,315	30,100	55,866	4,822	137,103
	April	41,821	29,038	55,937	4,571	131,367
	May	39,825	30,060	56,838	4,638	131,361
	June	44,967	33,194	57,368	4,764	140,293
	July	54,123	36,147	57,152	5,140	152,562
	August	56,742	36,820	58,865	5,054	157,481
	September	56,210	36,711	59,178	5,211	157,310
	October	47,207	33,289	60,514	5,032	146,042
	November	43,175	31,363	58,464	5,085	138,087
	December	46,442	29,788	56,190	4,896	137,316
	TOTAL		579,268	388,137	686,237	59,331
1974	January	52,846	30,608	55,754	4,995	144,203
	February	47,832	29,542	54,978	4,708	137,060
	March	46,154	29,309	55,999	4,693	136,155
	April	43,294	28,986	56,497	4,610	133,387
	May	41,215	29,876	57,386	4,685	133,162
	June	46,596	32,800	58,077	4,641	142,114
	July	53,435	35,229	57,899	4,965	151,528
	August	56,558	36,414	59,803	5,069	157,844
	September	53,252	35,830	60,366	4,983	154,431
	October	44,177	32,112	60,053	4,792	141,134
	November	42,773	30,968	57,361	4,969	136,071
	December	50,368	31,757	53,878	4,974	140,977
	TOTAL		578,500	383,431	688,051	58,084
1975	January	55,547	33,026	54,280	5,245	148,098
	February	52,185	32,441	53,142	4,984	142,752
	March	49,974	32,005	53,182	4,914	140,075
	April	46,883	31,335	52,526	4,737	135,481
	May	43,226	31,608	53,364	4,745	132,943
	June	48,461	35,266	54,104	4,777	142,608
	July	56,829	37,891	53,973	5,052	153,745
	August	59,979	38,768	56,067	5,223	160,037
	September	56,982	37,550	56,797	5,320	156,650
	TOTAL (9 months)		470,066	309,890	487,435	44,997

Total Sales



..... 1973
 ——— 1974
 - - - 1975

*Includes street lighting and trolley cars.
 Source: Federal Power Commission.

NUCLEAR POWER

The 50 nuclear powerplants in commercial operation, with a total capacity of 32,828 megawatts, performed at 58 percent of capacity in November, 3 percentage points below the level for October. Brunswick 2, an 808-megawatt boiling water reactor operated by the Carolina Power and Light Company, came into commercial operating status during November.

Trojan, a 1,130-megawatt boiling water reactor owned by Portland General Electric Company, Washington State, was granted power ascension (pre-commercial testing) status in mid-November. This reactor is presently the largest in the Nation.

The Alabama Power Company announced the cancellation of two 1,159-megawatt boiling water reactors, Barton 3 and 4, due to lowered demand for electricity and related financial difficulties. Including the Barton units, orders for 21 reactors, with a total capacity of 23,855 megawatts, have been cancelled since June 1974.

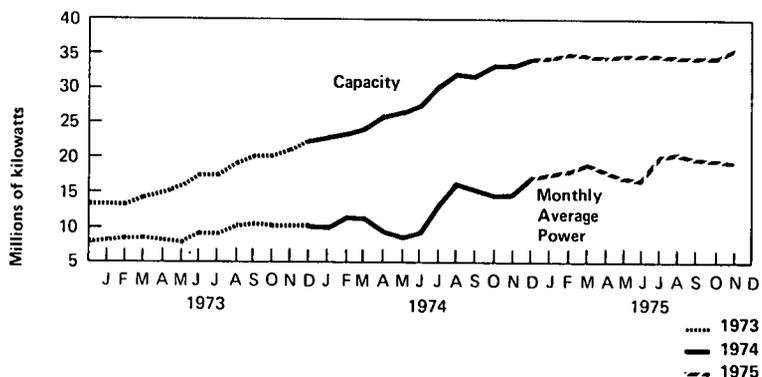
The General Atomic Company, a partnership of Gulf Oil and Royal Dutch Shell, has discontinued marketing nuclear reactors. In the wake of the Nation's decline in electricity demand, high inflation rates, and construction cost increases, General Atomic had received cancellations of 8 out of 10 orders for its high temperature, gas-cooled reactors. A proposal to the Energy Research and Development Administration to construct the 2 remaining units as "demonstration facilities" was rejected, and as a result, GA announced its withdrawal. The company, however, will continue its research activities in the field of nuclear fusion.

The Westinghouse uranium default case has moved a step further as the corporation's plea for suit consolidation (13 suits had been filed by 16 utilities) was approved by the Judicial Panel on Multidistrict Litigation located in Philadelphia. The Panel directed Judge Robert Merhig of the U.S. District Court, Eastern District, Virginia, to jointly hear pretrial matters in private chambers beginning in February 1976. Following this consolidation action, individual cases will be referred to their respective district courts for decision.

U.S. Nuclear Powerplant Operations

		Net Electrical Capacity	Net Monthly Average Power	Percent of Total Domestic Electricity Generation
In thousands of kilowatts				
1973	January	13,594	8,395	3.9
	February	13,594	8,821	4.1
	March	14,382	8,991	4.5
	April	15,253	8,161	4.2
	May	16,126	7,657	3.9
	June	17,827	9,429	4.2
	July	17,827	9,355	4.0
	August	19,349	10,463	4.4
	September	20,400	10,815	4.9
	October	20,400	10,036	4.9
	November	21,271	11,308	5.5
	December	22,826	10,543	5.3
	AVERAGE	17,761	9,513	4.5
1974	January	23,156	10,194	4.8
	February	23,926	11,992	5.6
	March	24,455	11,715	5.8
	April	26,012	9,826	4.9
	May	26,820	8,791	4.2
	June	27,898	9,740	4.4
	July	30,524	13,577	5.6
	August	32,195	16,442	7.0
	September	31,759	15,159	7.1
	October	33,614	14,409	7.1
	November	33,630	14,528	7.2
	December	34,467	17,375	8.1
	AVERAGE	29,071	12,865	6.0
1975	January	34,841	17,843	8.1
	February	35,049	18,063	8.3
	March	34,836	19,091	9.2
	April	34,167	17,516	8.7
	May	34,167	16,613	8.2
	June	34,472	16,097	7.2
	July	34,746	20,297	8.6
	August	34,739	20,618	8.7
	September	34,690	R19,892	R9.1
	October	34,690	*19,489	*8.9
	November	*35,902	*19,431	*9.1
	AVERAGE (11 months)	34,754	18,642	8.6

U.S. Nuclear Powerplants



*Preliminary data.

R=Revised data.

Sources: Average Power for latest 2 months and Capacity are from U.S. Nuclear Regulatory Commission; Percent of Total Domestic Electricity Generation for latest 2 months is based on data from Edison Electric Institute; remaining data are from Federal Power Commission.

Status of Nuclear Powerplants – November 30, 1975

Status	Number of Plants				Total	Capacity In Electrical Megawatts
	Boiling Water Reactors	High- Temperature Gas Reactors	Pressurized Water Reactors	Other*		
Licensed to operate	23	1	31	0	55	38,000
Construction permit granted	19	0	44	0	63	63,000
Construction permit pending	22	0	51	5	78	87,000
Orders placed for plant	7	0	16	0	23	27,000
Publicly announced	—	—	—	19	19	23,000
TOTAL	71	1	142	24	238	238,000

*Includes 1 Liquid Metal Fast Breeder Reactor and 23 announced intentions to order for which a reactor type has not been chosen.

Source: U.S. Nuclear Regulatory Commission.

U.S. Uranium Enrichment – November 1975

	Domestic Customers	Foreign Customers	Total
Separative Work Performed (in metric tons of separative work units)	777.181	573.617	1,350.798
Cost (in millions of dollars)	37.927	29.112	67.039
Product Quantity (in metric tons of uranium)	225.369	118.601	343.970
Average Enrichment (in percent U-235)	2.754	3.298	2.830
Feed Requirement (in metric tons of uranium)	1,055.119	710.502	1,765.621

Source: U.S. Energy Research and Development Administration.

Commercial Nuclear Power Generation by Major Non-Communist Countries – November 1975

Country	Number of Reactors	Capacity In thousands of gross electrical kilowatts	Generation of Electricity		
			Generation November In millions of gross kilowatt hours	Percent of Capacity November Year 1974	
Canada	5	2,380	1,037	61	74
Federal Republic of Germany	7	3,450	2,016	81	57
France	10	3,070	1,533	69	57
Great Britain	29	6,140	*2,660	*60	61
India	3	600	NA	NA	55
Italy	3	630	323	72	61
Japan	10	5,280	2,254	59	61
Spain	3	1,120	680	84	75
Sweden	5	3,310	1,491	63	20
Switzerland	3	1,050	726	96	76
United States	53	36,570	14,754	56	57
TOTAL	131	63,600	27,474	60	58

*Figures are for 4-week operating period.

NA=Not available.

Source: Nucleonics Week Magazine.

Summary of Monthly Nuclear Fuel Cycle — October 1975

Fuel Cycle Activity	Product	Processed Material* In MTU except where noted	Percent Utilization of Industry Capacity	Energy Content of Processed Material**	Energy Consumed in Fuel Cycle Activity***	Cost Contribution to Electric Power† In mills per kilowatt hour
					In billion Btu	
Milling	Yellowcake (U ₃ O ₈) Deliveries	304	23	104,000	170,000	0.54
Conversion	Uranium Hexafluoride (UF ₆) Deliveries	92	6	31,000	20,000	0.07
Enrichment	Enriched UF ₆ Deliveries	213 (754 MT-SWU)	††	436,000	62,000	0.86
Fabrication	Finished Fuel Assemblies Produced	41	17	84,000	60	0.46
Powerplant Operation	New Fuel Receipts	163	—	334,000	—	—
	Electricity Generated	15,490 (million kWh)	58	153,000	2,650	8.37
	Spent Fuel Discharged	68	—	—	—	—
Reprocessing	Spent Fuel Received	8	—	—	—	0.02
	Spent Fuel Reprocessed	0	—	—	—	—

*Units of measure are discussed in Explanatory Notes 9 and 10.

**Assumes 25,000 MWD/MTU for heat content of enriched uranium and a 6:1 feed-to-product ratio at the enrichment plant.

***Energy requirements for processing are obtained from U.S.A.E.C. Report No.WASH 1248.

†Cost contribution is computed from unit prices paid for current month's production and requirement for a model 1000-MWe reactor operating at 80 percent capacity factor, given in U.S.A.E.C. Report No.WASH 1174-74. Because of the long lead time required for nuclear fuel processing, the sum of the numbers in this column does not necessarily reflect the fuel cost of current electricity production.

††ERDA's enrichment plants are presently operating at maximum utilization of available electric power, with the excess production being placed in the "preproduction stockpile" in anticipation of high demand for enriched uranium in the 1980's.

Source: FEA.

ENERGY CONSUMPTION

Domestic energy consumption in October 1975 totaled 5.817 quadrillion Btu, about 4 percent below the level for the same month of the previous 2 years. No sectoral breakdown is available for the month as yet.

The revised consumption total for September was 5.441 quadrillion Btu. Of the total, 1.845 quadrillion Btu was consumed by the residential and commercial sector, up 2.9 percent from the level for September 1974, but down 0.8 percent from the September 1973 level. Direct consumption of primary fuels amounted to 43.7 percent of this sector's consumption (coal, 0.8 percent, dry natural gas, 15.2 percent, and petroleum products, 27.7 percent). Consumption of electricity accounted for the remaining 56.3 percent.

The industrial sector consumed 2.132 quadrillion Btu in September, down 10.1 percent from the level for September 1974 and down 8.1 percent from the September 1973 level. Of the total, 14.3 percent was coal, 35.6 percent was dry natural gas, 21.9 percent was petroleum products, and 28.2 percent was electricity.

Consumption in the transportation sector was 1.463 quadrillion Btu, 0.8 percent below the level for September 1974 and 2.4 percent below September 1973. Petroleum products comprised 96.4 percent of the total energy used by this sector. Natural gas used for pipeline transportation of fuels and electricity used by railroads and for street and highway lighting accounted for the balance.

NOTE: The natural gas numbers for the residential and commercial and industrial sectors have changed slightly due to a methodological improvement.

PETROLEUM CONSUMPTION AND FORECAST

Total domestic demand for petroleum products during November 1975 was 15.869 million barrels per day. This was 1.35 million barrels per day (7.8 percent) below both the forecast level and the level for last November.

Domestic demand for motor gasoline in November was 6.425 million barrels per day, which was 96,000 barrels per day (1.5 percent) below the forecast level of 6.521 million barrels per day. Motor gasoline demand was also below the level for last November by 122,000 barrels per day (1.9 percent).

Domestic demand for distillate fuel oil was 2.642 million barrels per day in November. This was 447,000 barrels per day (14.5 percent), below the forecast level and 503,000 barrels per day (16.0 percent) below the demand level for last November.

Domestic demand for residual fuel oil during November was 2.403 million barrels per day, which was 669,000 barrels per day (21.8 percent) below the forecast level of 3.072 million barrels per day and 416,000 barrels per day (14.8 percent) below the demand level for last November.

Energy Consumption

Energy Consumption by Economic Sector and Primary Source — September 1975 [In quadrillion (10^{15}) Btu]

Sector ¹	Primary Energy Source					Primary Energy Consumption
	Coal ²	Natural Gas (dry) ³	Petroleum ⁴	Hydroelectric ⁵	Nuclear ⁶	
Residential and Commercial	0.015	0.281	0.511	—	—	0.807
Industrial	0.304	0.759	0.466	0.003	—	1.533
Transportation	0.001	0.038	1.410	—	(⁹)	1.448
Electric Utilities	0.726	0.323	0.228	0.224	0.153	1.653
TOTAL	1.045	1.401	2.615	0.227	0.153	5.441

¹ See Explanatory Note 11 for definitions of the Residential and Commercial, Industrial, Transportation, and Electric Utilities Sectors.

² Data are from the Bureau of Mines. Includes anthracite and bituminous coal and lignite.

³ Aggregate data are from the Bureau of Mines. FPC provided data on natural gas consumed by electric utilities. Data from the American Gas Association are used for the Residential and Commercial Sector, adjusted to include a portion of the AGA "Other" category. Natural gas used in transportation, mostly for pipeline use, is estimated to be 3.5 percent of total natural gas consumption less electric utilities. This percentage is derived from 1974 Bureau of Mines data on consumption. The Industrial Sector is then the difference between the total and the sum of the other sectors.

⁴ Aggregate petroleum data are from the Bureau of Mines. FPC provided data on oil consumed by electric utilities. Petroleum consumed in transportation was calculated based on Department of Transportation data as follows: Motor gasoline - 100 percent; naphtha jet fuel - 100 percent; kerosine jet fuel - 97 percent; distillate fuel oil - 30.3 percent; residual fuel oil - 11.2 percent; all other products - 4.7 percent. The remainder is distributed to economic sectors using the following percentage shares, derived from 1974 Bureau of Mines data on consumption: Residential and Commercial - 52.3 percent; Industrial - 47.7 percent.

⁵ FPC hydroelectric power production plus net imports of electricity from Canada. These imports, estimated at 0.011 quadrillion Btu per month, were assumed to be from hydroelectric power sources. Monthly industrial hydroelectric power consumption is estimated to be one-twelfth of the preliminary Bureau of Mines annual figure for 1974.

⁶ FPC nuclear power production.

⁷ Electricity was distributed using FPC and Edison Electric Institute data on kilowatt-hour sales to ultimate customers. Electrical energy consumed by railroads and for street and highway lighting was distributed to the Transportation Sector. All "other" sales, largely for use in government buildings, were distributed to the Residential and Commercial Sector.

⁸ 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., ultimate energy disposition), the electricity losses are allocated to the final end-use sectors in proportion to their direct kilowatt-hour usage.

⁹ Negligible.

Electricity Distributed ⁷	Net Energy Consumption	Electrical Energy Loss Distributed ⁸	Ultimate Energy Disposition
0.336	1.143	0.703	1.845
0.194	1.726	0.406	2.132
0.005	1.453	0.010	1.463
—	—	—	—
0.534	4.322	1.119	5.441

Percent Changes in Energy Consumption for September 1975 by Sources

	September 1975 Consumption	Percent Change from September 1974	Cumulative Percent Change from 1974 (January through September)
	In quadrillion (10 ¹⁵) Btu		
Refined Petroleum Products	2.615	- 1.2	- 1.2
Motor Gasoline	1.061	+ 5.5	+ 2.5
Jet Fuel	0.160	-14.3	+ 2.1
Distillate	0.382	- 8.1	- 0.2
Residual	0.450	- 2.7	- 5.0
Other Petroleum Products	0.562	- 3.5	- 6.9
Natural Gas (Dry)	1.401	-10.7	- 8.5
Coal (Anthracite, bituminous, and lignite)	1.045	- 0.3	- 0.2
Electricity (Sales)	0.534	+ 1.4	+ 1.7
TOTAL ENERGY USE	5.441	- 3.1	- 2.4
Economic Sector Consumption			
Residential and Commercial	1.845	+ 2.9	+ 3.3
Industrial	2.132	-10.1	-10.2
Transportation	1.463	+ 0.8	+ 1.4

Energy Consumption (Continued)

Energy Consumption by the Residential and Commercial Economic Sector¹

		Coal	Natural Gas (dry)	Petroleum ²	Electricity Distributed	Electrical Energy Loss Distributed	Total Energy Use	Cumulative Total Energy Use
		In quadrillion (10 ¹⁵) Btu						
1973	January	0.038	1.257	0.707	0.299	0.716	3.017	3.017
	February	0.032	1.113	0.653	0.285	0.610	2.693	5.710
	March	0.025	0.925	0.620	0.272	0.629	2.471	8.181
	April	0.016	0.745	0.527	0.253	0.569	2.109	10.290
	May	0.017	0.539	0.562	0.250	0.612	1.980	12.270
	June	0.017	0.354	0.511	0.279	0.714	1.873	14.143
	July	0.017	0.279	0.503	0.321	0.814	1.934	16.077
	August	0.018	0.253	0.560	0.332	0.835	1.997	18.074
	September	0.024	0.276	0.538	0.330	0.690	1.859	19.933
	October	0.028	0.344	0.592	0.287	0.651	1.902	21.835
	November	0.031	0.610	0.658	0.266	0.615	2.180	24.015
	December	0.033	0.882	0.648	0.271	0.665	2.500	26.515
		TOTAL	0.295	7.577	7.077	3.445	8.120	26.515
1974	January	0.041	1.158	0.663	0.296	0.705	2.863	2.863
	February	0.035	1.027	0.593	0.275	0.607	2.537	5.400
	March	0.028	0.902	0.567	0.268	0.650	2.416	7.816
	April	0.019	0.754	0.532	0.258	0.602	2.164	9.980
	May	0.017	0.499	0.499	0.254	0.661	1.930	11.910
	June	0.016	0.357	0.510	0.282	0.692	1.857	13.767
	July	0.015	0.293	0.506	0.315	0.852	1.981	15.748
	August	0.021	0.265	0.522	0.330	0.817	1.954	17.702
	September	0.026	0.278	0.513	0.316	0.659	1.783	19.495
	October	0.028	0.395	0.591	0.271	0.643	1.930	21.425
	November	0.028	0.569	0.575	0.263	0.644	2.079	23.504
	December	0.032	0.930	0.630	0.292	0.745	2.629	26.133
		TOTAL	0.306	7.427	6.701	3.420	8.277	26.133
1975	January	0.036	1.124	0.651	0.315	0.772	2.898	2.898
	February	0.023	1.105	0.556	0.300	0.661	2.645	5.543
	March	0.025	1.018	0.568	0.291	0.711	2.613	8.155
	April	0.011	0.905	0.508	0.278	0.649	2.353	10.508
	May	0.011	0.522	0.459	0.267	0.678	1.937	12.445
	June	0.015	0.332	0.454	0.297	0.754	1.854	14.299
	July	0.017	0.293	0.484	0.336	0.873	2.004	16.303
	August	0.014	0.264	0.463	0.350	0.890	1.981	18.284
	September	0.015	0.281	0.511	0.336	0.703	1.845	20.129
		TOTAL	0.168	5.843	4.657	2.769	6.692	20.129

Energy Consumption by the Industrial Economic Sector¹

		Coal	Natural Gas (dry)	Petroleum ³	Hydroelectric	Electricity Distributed	Electrical Energy Loss Distributed	Total Energy Use	Cumulative Total Energy Use
		In quadrillion (10 ¹⁵) Btu							
1973	January	0.393	0.832	0.640	0.003	0.189	0.452	2.508	2.508
	February	0.362	0.764	0.591	0.003	0.186	0.399	2.305	4.813
	March	0.369	0.802	0.561	0.003	0.191	0.441	2.366	7.179
	April	0.363	0.794	0.477	0.003	0.191	0.430	2.257	9.436
	May	0.369	0.846	0.508	0.003	0.194	0.475	2.395	11.831
	June	0.351	0.787	0.462	0.003	0.196	0.502	2.301	14.132
	July	0.345	0.836	0.455	0.003	0.195	0.494	2.328	16.459
	August	0.340	0.888	0.506	0.003	0.201	0.505	2.444	18.903
	September	0.329	0.876	0.487	0.003	0.202	0.422	2.320	21.223
	October	0.363	1.010	0.535	0.003	0.206	0.469	2.587	23.809
	November	0.374	1.012	0.595	0.003	0.199	0.460	2.644	26.453
	December	0.412	1.046	0.586	0.003	0.192	0.470	2.708	29.161
		TOTAL	4.370	10.493	6.403	0.036	2.341	5.518	29.161
1974	January	0.390	0.824	0.605	0.003	0.190	0.452	2.465	2.465
	February	0.365	0.798	0.541	0.003	0.188	0.414	2.309	4.774
	March	0.370	0.821	0.518	0.003	0.191	0.463	2.365	7.139
	April	0.364	0.657	0.485	0.003	0.193	0.451	2.152	9.291
	May	0.354	0.783	0.455	0.003	0.196	0.510	2.300	11.592
	June	0.337	0.719	0.465	0.003	0.198	0.486	2.208	13.800
	July	0.336	0.802	0.462	0.003	0.198	0.535	2.335	16.135
	August	0.347	0.848	0.476	0.003	0.204	0.505	2.384	18.518
	September	0.336	0.928	0.468	0.003	0.206	0.430	2.372	20.890
	October	0.359	0.992	0.539	0.003	0.205	0.486	2.583	23.474
	November	0.323	0.996	0.525	0.003	0.196	0.479	2.521	25.995
	December	0.319	0.939	0.575	0.003	0.184	0.470	2.490	28.484
		TOTAL	4.200	10.108	6.111	0.036	2.348	5.679	28.484
1975	January	0.356	0.767	0.594	0.003	0.185	0.454	2.359	2.359
	February	0.355	0.625	0.507	0.003	0.181	0.399	2.070	4.429
	March	0.378	0.651	0.518	0.003	0.181	0.443	2.175	6.604
	April	0.353	0.510	0.464	0.003	0.179	0.418	1.928	8.532
	May	0.333	0.525	0.419	0.003	0.182	0.463	1.925	10.457
	June	0.314	0.601	0.414	0.003	0.185	0.468	1.986	12.443
	July	0.298	0.642	0.442	0.003	0.184	0.479	2.049	14.492
	August	0.305	0.730	R0.422	0.003	0.191	0.486	R2.138	R16.630
	September	0.304	0.759	0.466	0.003	0.194	0.406	2.132	18.762
		TOTAL	2.996	5.810	4.247	0.027	1.663	4.018	18.762

Energy Consumption (Continued)

Energy Consumption by the Transportation Economic Sector¹

		Coal	Natural Gas (dry) ⁴	Petroleum	Electricity Distributed	Electrical Energy Loss Distributed	Total Energy Use	Cumulative Total Energy Use
		In quadrillion (10 ¹⁵) Btu						
1973	January	0.001	0.085	1.511	0.005	0.013	1.615	1.615
	February	0.001	0.076	1.417	0.005	0.011	1.510	3.125
	March	0.001	0.070	1.502	0.005	0.012	1.589	4.714
	April	0.001	0.062	1.412	0.005	0.010	1.490	6.204
	May	0.001	0.056	1.540	0.004	0.011	1.612	7.816
	June	0.001	0.046	1.471	0.004	0.011	1.533	9.350
	July	0.001	0.045	1.528	0.004	0.011	1.589	10.939
	August	0.001	0.046	1.588	0.005	0.011	1.651	12.590
	September	0.001	0.047	1.437	0.005	0.010	1.499	14.089
	October	0.001	0.055	1.520	0.005	0.011	1.592	15.681
	November	0.001	0.066	1.523	0.005	0.012	1.607	17.288
	December	0.001	0.078	1.491	0.005	0.013	1.589	18.877
	TOTAL	0.009	0.733	17.940	0.058	0.137	18.877	
1974	January	0.001	0.072	1.398	0.005	0.013	1.489	1.489
	February	0.001	0.066	1.300	0.005	0.011	1.384	2.873
	March	0.001	0.063	1.416	0.005	0.012	1.496	4.369
	April	0.001	0.051	1.397	0.005	0.011	1.465	5.834
	May	0.001	0.047	1.484	0.005	0.012	1.547	7.381
	June	0.001	0.039	1.449	0.005	0.011	1.505	8.885
	July	0.001	0.040	1.513	0.005	0.012	1.570	10.456
	August	0.001	0.040	1.532	0.005	0.012	1.590	12.046
	September	0.001	0.044	1.392	0.005	0.010	1.452	13.497
	October	0.001	0.050	1.506	0.005	0.012	1.574	15.072
	November	0.001	0.057	1.453	0.005	0.013	1.529	16.600
	December	0.001	0.068	1.546	0.006	0.014	1.634	18.234
	TOTAL	0.007	0.636	17.386	0.060	0.145	18.234	
1975	January	0.001	0.069	1.499	0.006	0.014	1.587	1.587
	February	0.001	0.063	1.334	0.005	0.012	1.415	3.002
	March	0.001	0.061	1.456	0.005	0.013	1.536	4.538
	April	0.001	0.051	1.456	0.005	0.012	1.524	6.062
	May	0.001	0.038	1.481	0.005	0.012	1.536	7.598
	June	0.001	0.034	1.466	0.005	0.012	1.517	9.115
	July	0.001	0.034	1.498	0.005	0.013	1.550	10.665
	August	0.001	0.036	R1.510	0.005	0.012	R1.563	R12.228
	September	0.001	0.038	1.410	0.005	0.010	1.463	13.691
	TOTAL	0.005	0.423	13.109	0.045	0.109	13.691	

¹ See Explanatory Note 11 for definitions of the Residential and Commercial, Industrial, and Transportation Sectors. The methodology used for sector calculations is provided in the footnotes of the previous table. Printed totals may differ slightly from the sum of their row/column components due to independent rounding.

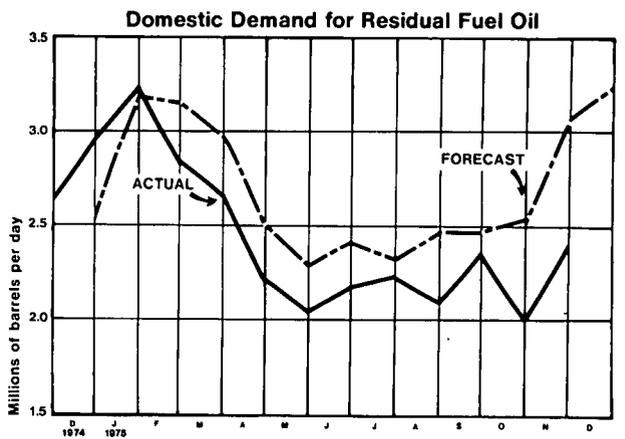
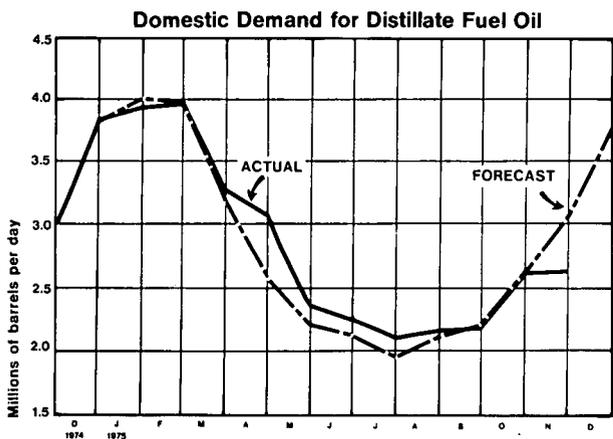
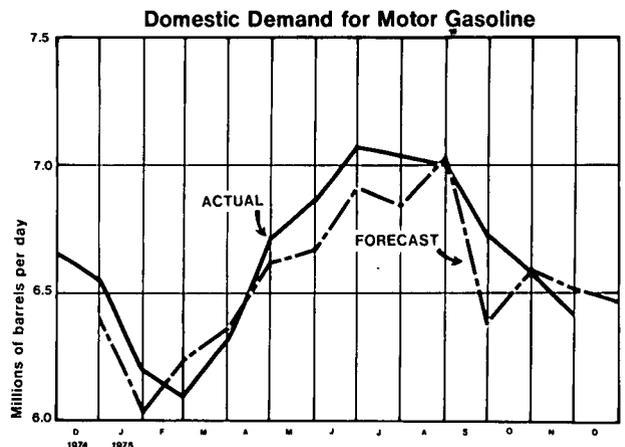
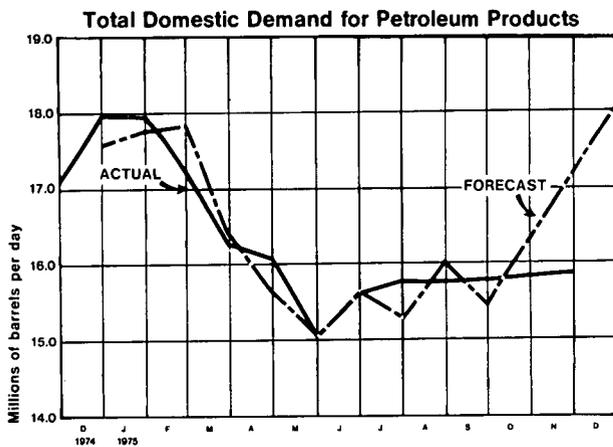
² The percentage share used in calculating Residential and Commercial consumption of petroleum was 52.5 percent for 1973 and 52.3 percent for 1974 and 1975.

³ The percentage share used in calculating Industrial consumption of petroleum was 47.5 percent for 1973 and 47.7 percent for 1974 and 1975.

⁴ The percentage share used in calculating Transportation consumption of natural gas was 3.9 percent for 1973 and 3.5 percent for 1974 and 1975.

R=Revised data.

Petroleum Consumption and Forecast



Notes:

Domestic Demand – Demand for products, in terms of real consumption, is not available; production plus imports plus withdrawals from primary stocks is used as a proxy for consumption. Secondary stocks, not measured by FEA, are substantial for some products.

Actuals – Based on BOM data except for 3 most recent months, which are based on FEA data.

Forecast – Forecast petroleum product demand assumes normal weather conditions and projected economic activity. The forecast is periodically revised to take into account actual weather conditions and actual values of other predictor variables as they become available.

OIL AND GAS EXPLORATION

The number of seismic crews exploring for oil and gas dropped for the third month in a row during November. Although a decline is normal for the year-end slack period, the November total of 265 crews (238 land and 27 marine) represented a 13-percent decrease from the 306 crews reported active during November 1974.

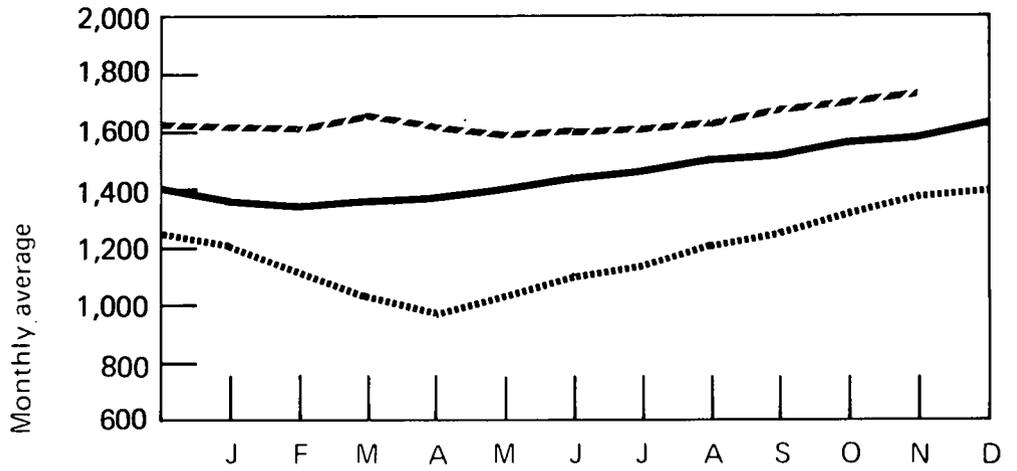
November statistics on drilling activity, on the other hand, presented a much brighter picture. The number of rotary rigs drilling for oil and gas reached 1,757, the highest level for November since 1961, and an increase of 10 percent over the rig count for last November. Moreover, the number of wells drilled during the first 11 months of the year (33,019) has already surpassed the number drilled during all of 1974 (31,698).

Oil and Gas Exploration

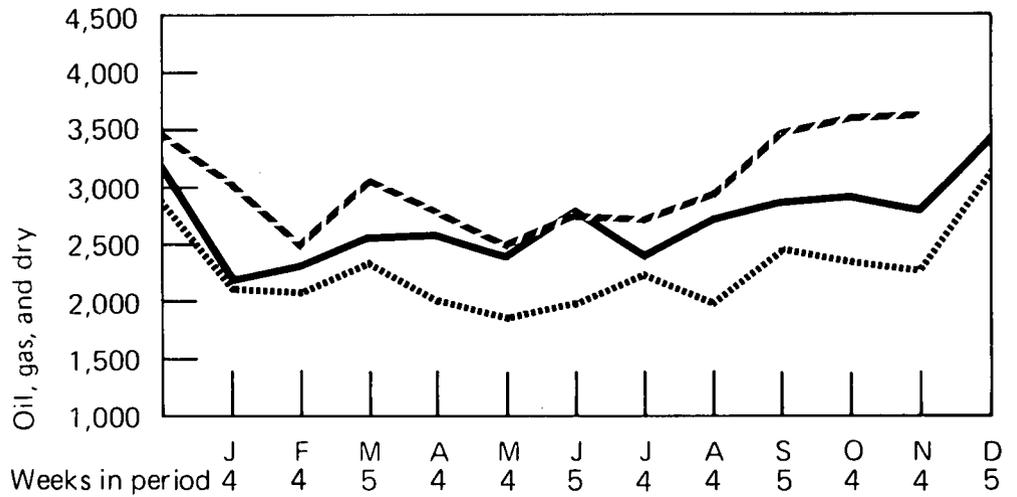
		Rotary Rigs in Operation		Wells Drilled			Total Footage of Wells Drilled	
		Monthly average	Oil	Gas	Dry	Total	In thousands of feet	
1973	January	1,219	758	406	899	2,063	10,973	
	February	1,126	777	487	765	2,029	10,656	
	March	1,049	953	504	909	2,366	12,318	
	April	993	699	489	777	1,965	10,434	
	May	1,046	749	407	647	1,803	9,622	
	June	1,118	767	432	795	1,994	10,815	
	July	1,155	912	504	840	2,256	10,996	
	August	1,222	724	456	739	1,919	9,633	
	September	1,266	854	690	940	2,484	12,075	
	October	1,334	790	554	958	2,302	11,694	
	November	1,390	822	606	865	2,293	11,823	
	December	1,405	1,087	827	1,208	3,122	15,530	
		AVERAGE	1,194	*TOTAL 9,902	6,385	10,305	26,592	136,391
1974	January	1,372	763	577	803	2,143	10,392	
	February	1,355	901	600	816	2,317	12,160	
	March	1,367	936	638	1,003	2,577	12,844	
	April	1,381	947	700	945	2,592	13,349	
	May	1,412	957	520	870	2,347	11,460	
	June	1,432	1,238	586	982	2,806	12,976	
	July	1,480	1,008	461	884	2,353	11,802	
	August	1,518	1,210	555	968	2,733	12,410	
	September	1,527	1,200	600	1,091	2,891	12,676	
	October	1,584	1,131	551	1,241	2,923	14,081	
	November	1,596	1,088	626	1,053	2,767	11,795	
	December	1,643	1,339	791	1,274	3,404	15,707	
		AVERAGE	1,475	*TOTAL 12,784	7,240	11,674	31,698	150,551
1975	January	1,615	1,299	655	1,040	2,994	13,189	
	February	1,611	1,097	458	933	2,488	12,071	
	March	1,651	1,341	658	1,091	3,090	15,472	
	April	1,604	1,181	506	1,071	2,758	13,545	
	May	1,592	1,100	451	891	2,442	12,054	
	June	1,613	1,246	509	1,022	2,777	13,540	
	July	1,616	1,229	557	920	2,706	12,545	
	August	1,645	1,272	587	1,122	2,981	14,221	
	September	1,699	1,504	831	1,165	3,500	15,636	
	October	1,716	1,633	682	1,310	3,625	16,689	
	November	1,757	1,619	776	1,270	3,665	15,788	
		AVERAGE (11 months)	1,648	*TOTAL 14,519 (11 months)	6,673	11,827	33,019	154,728

*Totals reflect subsequent data revisions and therefore may not agree with cumulative monthly data.
Sources: Rotary Rigs - Hughes Tool Company.
Wells - American Petroleum Institute.

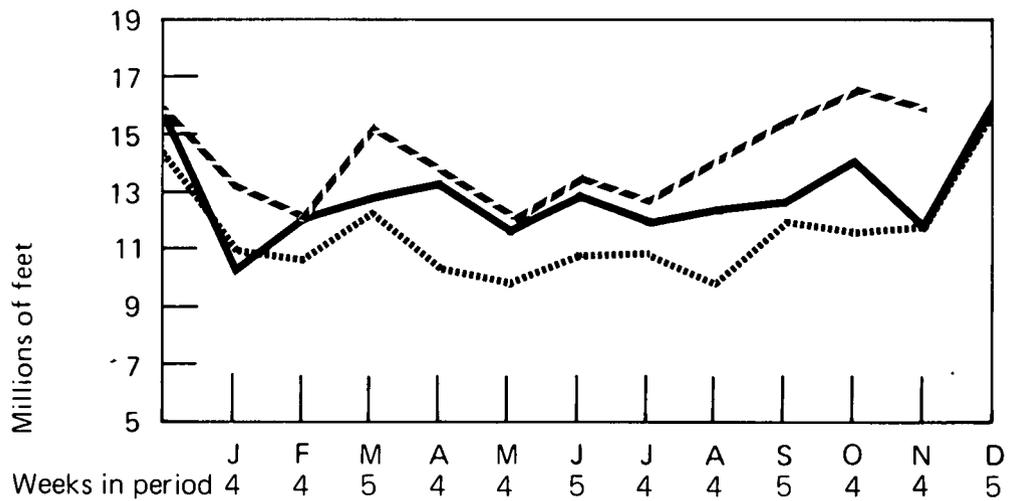
Rotary Rigs in Operation



Total Wells Drilled



Total Footage of Wells Drilled

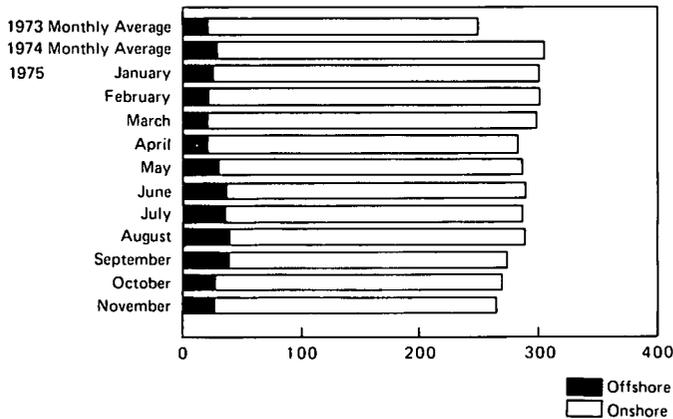


..... 1973
 ——— 1974
 - - - 1975

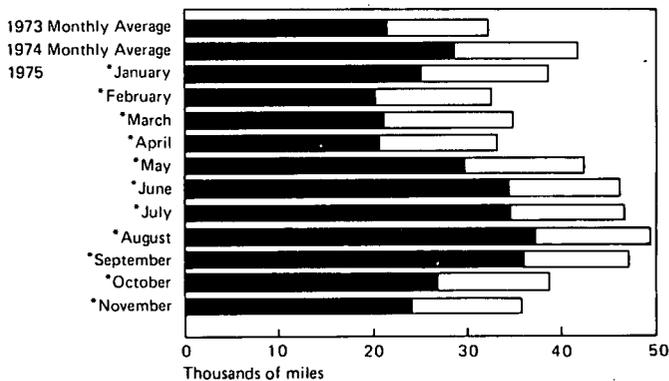
Oil and Gas Exploration (Continued)

	Crews Engaged in Seismic Exploration			Line Miles of Seismic Exploration		
	Offshore	Onshore	Total	Offshore	Onshore	Total
1972 Monthly Average	12	239	251	10,306	9,333	19,639
1973 Monthly Average	23	227	250	21,579	10,597	32,175
1974 Monthly Average	31	274	305	28,482	13,219	41,701
					Estimates*	
May	35	278	313	32,550	13,677	46,227
June	38	279	317	34,200	13,283	47,483
July	35	299	334	32,550	14,710	47,260
August	34	287	321	31,620	14,120	45,740
September	34	287	321	30,600	13,664	44,264
October	32	288	320	29,760	14,169	43,929
November	30	276	306	27,000	13,140	40,140
December	25	275	300	23,250	13,529	36,779
1975						
January	27	274	301	25,110	13,480	38,590
February	24	278	302	20,160	12,353	32,513
March	23	276	299	21,390	13,578	34,968
April	23	260	283	20,700	12,379	33,079
May	32	254	286	29,760	12,496	42,256
June	38	251	289	34,200	11,950	46,150
July	37	249	286	34,410	12,250	46,660
August	40	249	289	37,200	12,250	49,450
September	40	234	274	36,000	11,141	47,141
October	29	241	270	26,970	11,856	38,826
November	27	238	265	24,300	11,331	35,631
AVERAGE (11 months)	31	255	286	28,272	12,302	40,574

Crews Engaged in Seismic Exploration



Line Miles of Seismic Exploration



*See Explanatory Note 12.

Source: Society of Exploration Geophysicists.

MOTOR GASOLINE

The national average retail price of regular gasoline dropped 0.5 cent in November to 58.4 cents per gallon. This change reflected price decreases in late October by several of the Nation's largest gasoline marketers. The average price that retailers paid for regular gasoline declined by the same amount, leaving the dealer margin unchanged at 8.2 cents per gallon.

HEATING OIL

The national average price of heating oil sold to residential customers increased 0.1 cent per gallon during November to 39.4 cents.

CRUDE OIL

During October, the average domestic "new" oil price was \$12.73 per barrel, 27 cents above the September price.

The preliminary estimate for the average cost of domestic crude purchased by refiners during October rose 10 cents per barrel to \$8.59.

The preliminary estimate for the refiner acquisition cost of imported crude during October was \$14.66 per barrel, 62 cents above the September price. This increase can be attributed to the OPEC price increase on October 1, 1975.

The preliminary estimate for the composite cost of crude petroleum purchased by refiners during October was \$10.95 per barrel, up 16 cents from the September figure.

NATURAL GAS

During November, the average retail price of natural gas sold to residential customers for heating use advanced 6.0 cents per thousand cubic feet to 162.3 cents. This was the largest increase this year.

UTILITY FOSSIL FUELS

The national average cost of fossil fuels delivered to utilities during August was 103.8 cents per million Btu, 1.3 cents above the cost in July. The Middle Atlantic Region had the largest regional fuel cost decrease (10.0 cents per million Btu), reflecting a

shift in purchases back to less expensive coal from more expensive oil. The Pacific Region, which experienced a shift away from natural gas to oil, had the largest regional fuel cost increase (24.2 cents per million Btu).

The national average cost of coal rose 1.3 cents during August to 82.1 cents per million Btu. Contract coal prices exhibited an increase of 59 cents per short ton, while spot prices remained relatively unchanged. The increase in the average contract price was due to the resumption of purchases of higher-cost coal from regions where union miners had returned from their July vacations.

The national average cost of residual fuel advanced 1.9 cents in August to 200.8 cents per million Btu. The most significant increase (4.3 cents) in terms of the volume of purchases affected occurred in the Pacific Region, while the most significant decrease (1.6 cents) occurred in the South Atlantic Region.

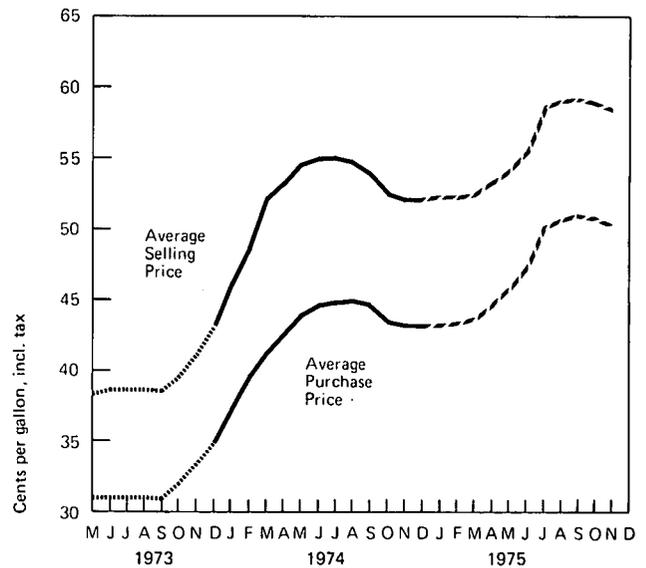
The national average cost of natural gas delivered to utilities increased 4.3 cents to 79.1 cents per million Btu during August. The two largest utility gas consuming regions, the West South Central and the Pacific, reported cost advances of 3.0 and 21.4 cents per million Btu, respectively.

Motor Gasoline

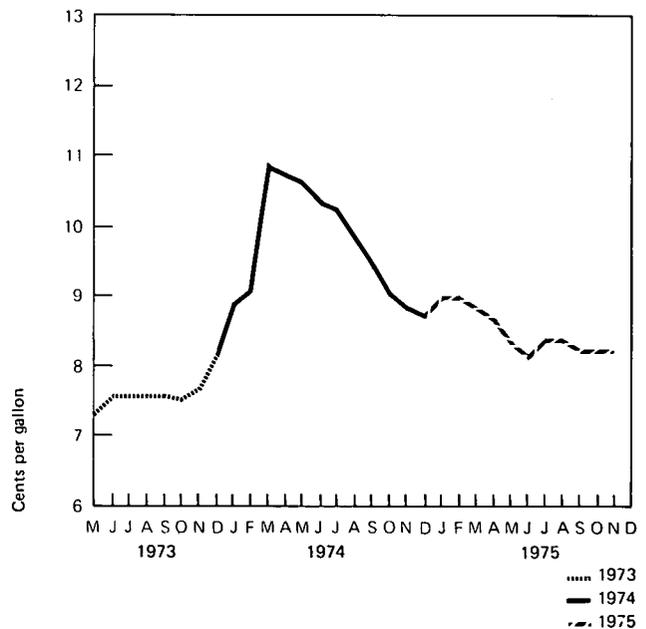
Regular Gasoline at Retail Outlets

		Average Selling Price	Average Purchase Price	Average Dealer Margin
Cents per gallon, including tax*				
1973	January	37.3	30.5	6.8
	February	36.8	30.1	6.7
	March	37.9	30.8	7.1
	April	38.3	31.0	7.3
	May	38.5	31.2	7.3
	June	38.8	31.2	7.6
	July	38.8	31.2	7.6
	August	38.8	31.2	7.6
	September	38.7	31.1	7.6
	October	39.7	32.2	7.5
	November	41.3	33.6	7.7
	December	43.3	35.1	8.2
AVERAGE		39.0	31.6	
1974	January	46.3	37.4	8.9
	February	48.8	39.7	9.1
	March	52.3	41.4	10.9
	April	53.4	42.7	10.7
	May	54.7	44.1	10.6
	June	55.1	44.8	10.3
	July	55.2	45.0	10.2
	August	54.9	45.1	9.8
	September	54.2	44.8	9.4
	October	52.4	43.4	9.0
	November	52.0	43.2	8.8
	December	52.0	43.3	8.7
AVERAGE		52.8	43.1	
1975	January	52.4	43.4	9.0
	February	52.5	43.5	9.0
	March	52.6	43.8	8.8
	April	53.5	44.9	8.6
	May	54.3	46.0	8.3
	June	55.6	47.5	8.1
	July	58.7	50.3	8.4
	August	59.2	50.8	8.4
	September	59.3	51.1	8.2
	October	58.9	50.7	8.2
	November	58.4	50.2	8.2

Average Retail Prices For Regular



Average Margins For Regular



*To derive prices excluding taxes, 12.0 cents per gallon may be deducted for 1973 and 12.2 cents per gallon may be deducted for 1974 and 1975.

Sources: Platts Oilgram through September 1973. FEA from October 1973 through December 1974. Lundberg Survey, Inc., from January 1975 forward.

Average Selling Prices at Major and Independent Retail Outlets – November 1975

	Cents per gallon, including tax
Regular Gasoline	
Major	59.2
Independent	54.5
National Average	58.4
Premium Gasoline	
Major	63.8
Independent	58.6
National Average	63.2
Diesel Fuel*	
Truck Stops	
Major	54.3
Independent	49.0
National Average	52.0
Service Stations	
Major	54.5
Independent	51.7
National Average	53.0

*See Explanatory Note 13.
Source: Lundberg Survey, Inc.

Average Margins for Major and Independent Retail Dealers – November 1975

	Cents per gallon
Regular Gasoline	
Major	8.5
Independent	6.6
National Average	8.2
Diesel Fuel*	
Truck Stops	
Major	6.0
Independent	4.6
National Average	5.3
Service Stations	
Major	5.2
Independent	7.6
National Average	6.5

*See Explanatory Note 13.
Source: Lundberg Survey, Inc.

Average Regional Retail Selling Prices and Dealer Margins for Regular Gasoline – November 1975

FEA Region	Selling Price	Margin
	Cents per gallon, including tax	
1A New England	57.9	8.4
1B Mid Atlantic	59.7	7.9
1C Lower Atlantic	59.0	8.5
2 Mid Continent	58.2	7.7
3 Gulf Coast	56.1	9.4
4 Rock Mountain	59.0	9.4
5 West Coast	59.8	8.4
NATIONAL AVERAGE	58.4	8.2

Source: Lundberg Survey, Inc.

Motor Gasoline (Continued)

Retail Gasoline Price Changes for 21 Leading Refiners During November 1975
and Entitlement Position* During October

Company	Effective Date of Change	Amount of Change Cents per gallon	Entitlement Position (October)
Amerada Hess		None	Seller
American Petrofina		None	Seller
Ashland		None	Seller
Atlantic Richfield	November 18	-1.00	Seller
B.P.		None	Seller
Cities Service		None	Buyer
Champlin	November 4	-0.80	Buyer
Continental		None	Buyer
Exxon		None	Buyer
Getty		None	Seller
Gulf		None	Buyer
Kerr-McGee		None	Buyer
Mobil		None	Buyer
Phillips		None	Seller
Shell		None	Buyer
Standard Oil of California		None	Seller
Standard Oil of Indiana		None	Buyer
Standard Oil of Ohio		None	Seller
Sun	November 21	-1.00	Buyer
Texaco		None	Seller
Union Oil of California		None	Buyer

*See definitions.

Source: FEA.

Jobber Prices for Regular Gasoline Sold by 21 Leading Refiners

		Northeast	Mid-Atlantic	Southeast	Central	Western	Southwest	Pacific	National Average
Cents per gallon, excluding tax									
1974	January	21.4	21.4	21.1	21.3	22.2	20.1	21.0	21.2
	February	23.7	23.6	22.5	23.9	23.5	22.5	22.6	23.2
	March	25.4	25.2	24.1	25.3	24.5	24.2	25.2	24.8
	April	26.7	26.1	24.8	26.0	25.6	24.7	25.0	25.6
	May	28.5	28.4	26.8	28.2	27.7	26.3	26.3	27.5
	June	29.8	29.4	28.0	29.3	29.3	27.1	27.2	28.6
	July	29.9	29.3	28.0	29.4	28.9	27.8	28.0	28.8
	August	29.7	29.4	28.6	29.6	29.1	28.1	28.6	29.0
	September	29.3	28.9	28.0	28.8	28.7	27.4	27.8	28.4
	October	28.0	27.2	26.6	27.5	27.0	26.2	26.6	27.0
	November	27.8	27.3	26.6	27.5	27.5	26.3	27.3	27.2
	December	27.7	27.6	26.9	27.7	27.9	26.7	27.3	27.4
	AVERAGE								26.7
1975	January	27.8	27.8	27.4	28.2	28.5	27.2	27.8	27.8
	February	28.4	28.2	27.8	28.7	28.3	27.6	27.5	28.1
	March	28.9	28.8	28.4	29.1	29.0	27.8	28.0	28.6
	April	29.6	29.9	29.4	30.4	29.8	29.2	29.8	29.7
	May	30.9	31.0	30.5	31.6	31.2	30.4	31.0	30.9
	June	32.4	32.5	32.0	33.1	32.6	31.6	32.6	32.4
	July	34.4	34.6	33.9	34.9	34.5	33.4	33.7	34.2
	August	35.3	35.1	34.6	35.6	35.2	34.1	34.5	34.9
	September	35.2	35.1	34.5	35.4	35.0	34.1	34.5	34.8
	October	34.3	34.6	34.0	34.9	34.3	33.8	34.2	34.3
	November	34.1	34.3	33.9	34.6	34.3	33.6	34.0	34.1

Source: FEA.

Heating Oil

Retail Heating Oil Price Changes for 21 Leading Refiners During November 1975

Company	Effective Date	Amount of Change Cents per gallon
Amerada Hess		None
American Petrofina		None
Ashland		None
Atlantic Richfield	November 11	1.00
B.P.		None
Cities Service	November 3	1.00
Champlin	November 4	.50
Continental	November 8	1.00
Exxon		None
Getty	November 8	2.00
Gulf	November 24	1.00
Kerr-McGee		None
Mobil		None
Phillips		None
Shell		None
Standard Oil of California		None
Standard Oil of Indiana		None
Standard Oil of Ohio		None
Sun	November 1	1.50
Texaco		None
Union Oil of California	November 4	1.00

Source: FEA.

Residential Heating Oil Prices

		Average Selling Price	Average Purchase Price	Average Dealer Margin
In cents per gallon				
1974	January	31.1	23.4	7.7
	February	32.8	25.4	7.4
	March	33.8	25.9	7.9
	April	34.0	25.9	8.1
	May	35.1	26.8	8.3
	June	35.3	27.5	7.8
	July	35.2	28.1	7.1
	August	35.8	28.1	7.7
	September	36.3	28.7	7.6
	October	35.6	28.9	6.7
	November	37.9	29.1	8.8
	December	36.9	28.5	8.4
	AVERAGE	34.7	26.9	
1975	January	37.4	29.1	8.3
	February	37.0	28.7	8.3
	March	36.6	28.4	8.2
	April	36.1	29.3	6.8
	May	36.7	30.0	6.7
	June	36.1	30.3	5.8
	July	37.2	30.6	6.6
	August	38.0	31.2	6.8
	September	38.4	31.0	7.4
	October	39.3	31.8	7.5
	November	39.4	32.1	7.3

Source: FEA.

Residential Heating Oil Prices by Region

		New England	Mid Atlantic	Southeast	East North Central	East South Central	West North Central	West South Central	Mountain	West Coast
		In cents per gallon								
1974	January	31.9	31.6	30.8	30.3	29.8	31.3	NA	30.4	30.5
	February	33.8	33.5	32.8	30.9	32.0	32.9	NA	37.2	32.8
	March	31.9	33.7	33.9	34.2	30.6	34.5	NA	NA	NA
	April	34.3	34.8	32.5	33.5	33.7	30.1	NA	34.2	32.6
	May	34.8	35.6	36.2	34.2	34.4	32.6	NA	34.8	37.8
	June	35.9	36.2	35.8	34.9	31.1	33.6	NA	35.9	39.1
	July	35.2	35.5	35.6	34.4	30.2	34.9	NA	36.1	36.3
	August	36.3	36.1	37.8	35.1	33.7	35.2	NA	NA	35.9
	September	37.2	36.5	36.1	35.0	33.6	35.8	NA	32.3	35.1
	October	36.7	35.9	36.9	33.3	34.1	33.8	NA	35.6	36.3
	November	39.0	38.7	37.4	36.4	35.3	35.6	NA	37.3	36.4
	December	38.3	38.7	36.8	34.2	34.7	33.5	NA	35.8	33.9
1975	January	40.2	38.9	36.5	33.2	34.7	34.0	NA	37.5	38.0
	February	39.2	38.4	36.8	33.4	34.7	33.3	NA	36.6	37.7
	March	38.0	37.8	36.4	34.2	33.2	34.3	NA	NA	36.8
	April	37.4	36.8	36.8	33.2	33.7	34.5	NA	38.9	36.8
	May	37.6	36.9	36.4	35.1	34.7	35.4	NA	37.0	37.8
	June	37.7	37.7	36.4	35.8	NA	35.9	NA	37.6	37.6
	July	37.9	36.9	36.9	36.4	34.7	36.8	NA	NA	38.8
	August	38.8	38.2	37.9	36.3	35.7	36.3	NA	41.3	39.3
	September	39.4	38.7	37.6	36.5	35.7	36.8	NA	38.9	40.1
	October	40.3	39.9	38.3	37.4	36.6	37.9	NA	39.0	41.0
	November	41.0	39.6	38.7	37.9	NA	38.1	NA	40.2	41.3

NA=Not available.
Source: FEA.

Average Distributor Purchase Prices for Heating Oil by Region

		New England	Mid Atlantic	Southeast	East North Central	East South Central	West North Central	West South Central	Mountain	West Coast
					In cents per gallon					
1974	January	22.3	23.4	23.3	23.8	23.5	24.0	NA	22.5	23.0
	February	24.9	25.5	25.3	24.8	25.2	26.4	NA	29.7	25.3
	March	24.9	25.0	26.3	25.6	24.0	27.0	NA	NA	NA
	April	25.7	26.0	26.0	27.1	26.3	24.0	NA	26.8	26.0
	May	26.3	27.0	27.5	27.3	27.4	25.8	NA	27.1	26.2
	June	27.5	27.6	27.8	29.0	25.4	27.4	NA	27.3	28.0
	July	28.1	28.2	28.3	27.5	25.2	28.5	NA	28.2	29.1
	August	28.1	28.2	27.9	27.5	29.3	28.8	NA	NA	28.2
	September	29.2	28.9	28.5	27.8	28.2	28.4	NA	29.3	28.8
	October	29.9	29.4	28.8	27.7	28.3	27.4	NA	29.9	29.2
	November	29.8	29.7	28.8	27.8	29.1	27.6	NA	27.9	29.8
	December	29.3	29.4	28.4	27.4	28.8	26.7	NA	29.3	27.0
1975	January	30.3	29.7	28.5	27.2	28.8	27.5	NA	28.5	29.7
	February	29.6	29.3	28.6	27.2	28.8	27.3	NA	29.4	28.5
	March	29.5	29.3	29.1	28.1	26.8	28.1	NA	NA	27.6
	April	29.4	29.5	29.7	28.3	27.8	29.5	NA	29.0	28.5
	May	30.5	30.0	30.0	30.0	28.8	29.4	NA	30.9	28.7
	June	30.4	30.2	30.6	30.5	NA	30.7	NA	31.8	29.0
	July	30.7	30.1	29.9	31.6	28.8	31.4	NA	NA	30.4
	August	31.6	30.8	30.9	31.2	29.8	30.2	NA	31.6	32.8
	September	31.4	30.9	30.7	30.6	29.8	30.6	NA	31.9	31.4
	October	32.0	31.9	31.3	31.5	31.1	31.4	NA	34.4	32.5
	November	32.5	31.7	32.0	32.1	NA	32.0	NA	34.1	32.3

NA=Not available.
Source: FEA.

Crude Oil

Percentage of Domestic Production Sold at Controlled and Uncontrolled Prices

		Controlled		Uncontrolled	
		Old Oil	New Oil	Released	Stripper
1974	January	60	17	10	13
	February	62	15	10	13
	March	60	16	11	13
	April	60	16	11	13
	May	62	15	10	13
	June	63	15	9	13
	July	64	15	9	12
	August	66	14	8	12
	September	67	13	8	12
	October	66	14	8	12
	November	67	13	8	12
	December	66	14	8	12
	AVG.	64	15	9	12
1975	*January	58	19	10	12
	*February	61	17	9	12
	March	60	18	10	12

*Total does not add to 100 due to rounding.
Source: FEA.

Domestic Crude Petroleum Prices at the Wellhead

		Old	New
		Dollars per barrel	
1974	January	5.25	9.82
	February	5.25	9.87
	March	5.25	9.88
	April	5.25	9.88
	May	5.25	9.88
	June	5.25	9.95
	July	5.25	9.95
	August	5.25	9.98
	September	5.25	10.10
	October	5.25	10.74
	November	5.25	10.90
	December	5.25	11.08
	AVG.	5.25	10.13
1975	January	5.25	11.28
	February	5.25	11.39
	March	5.25	11.47
	April	5.25	11.64
	May	5.25	11.69
	June	5.25	11.73
	July	5.25	12.30
	August	5.25	12.38
	September	5.25	12.46
	October	5.25	*12.73

Total Unrecouped Costs* for all Refined Products for 30 Largest Refiners

		Billions of dollars
1975	January	1.4
	February	1.5
	March	1.2
	April	1.7
	May	1.6
	June	1.3
	July	1.1
	August	1.3
	September	1.4
	October	1.3

*See definitions.
Source: FEA.

*Preliminary figure based on early reports.
Source: FEA.

Refiner Acquisition Cost of Crude Petroleum*

		Domestic	Imported	Composite
Dollars per barrel				
1974	January	6.72	9.59	7.46
	February	7.08	12.45	8.57
	March	7.05	12.73	8.68
	April	7.21	12.72	9.13
	May	7.26	13.02	9.44
	June	7.20	13.06	9.45
	July	7.19	12.75	9.30
	August	7.20	12.68	9.17
	September	7.18	12.53	9.13
	October	7.26	12.44	9.22
	November	7.46	12.53	9.41
	December	7.39	12.82	9.28
	AVERAGE	7.18	12.52	9.07
1975	January	7.78	12.77	9.48
	February	8.29	13.05	10.09
	March	8.38	13.28	9.91
	April	8.23	13.26	9.83
	May	8.33	13.27	9.79
	June	8.33	14.15	10.33
	July	8.37	14.03	10.57
	August	8.48	14.25	10.81
	September	8.49	14.04	10.79
	October	**8.59	**14.66	**10.95

*See Explanatory Note 14.

**Preliminary data.

Source: FEA.

Estimated Landed Cost of Imported Crude Petroleum From Selected Countries*

		Algeria	Canada	Indonesia	Iran	Nigeria	Saudi Arabia	U. A. Emirates	Venezuela
Dollars per barrel									
1973	December	NA	6.32	6.42	6.37	8.54	5.49	NA	6.70
1974	January	NA	6.70	NA	8.53	12.13	NA	NA	10.28
	February	NA	10.90	NA	12.11	12.74	NA	NA	11.31
	March	NA	11.14	12.13	13.02	13.26	NA	NA	11.78
	April	13.63	11.02	12.49	12.83	13.67	11.59	NA	11.38
	May	14.67	11.47	12.95	13.84	13.83	11.53	NA	11.28
	June	14.43	12.56	13.21	13.44	13.03	11.32	13.06	10.39
	July	13.65	12.65	13.77	13.02	12.75	11.97	12.34	10.64
	August	13.96	12.49	14.38	12.31	12.70	12.16	12.69	11.20
	September	13.83	12.51	13.42	11.87	12.28	11.45	NA	11.01
	October	13.20	12.53	14.24	12.07	12.12	11.51	12.84	10.95
	November	13.43	12.33	13.45	12.15	12.83	12.15	13.54	11.15
	December	13.08	12.15	14.15	11.63	12.88	11.75	14.59	11.37
1975	January	12.72	12.43	13.30	12.11	12.07	12.07	13.14	11.37
	*February	12.11	12.15	13.52	11.86	12.18	11.94	12.67	11.56
	*March	12.46	12.79	13.94	12.08	12.56	11.78	13.40	11.66
	*April	12.36	12.95	13.71	12.34	12.46	12.16	12.55	11.61
	*May	12.41	12.08	13.71	11.93	12.34	12.27	13.29	11.54
	*June	12.37	11.90	13.73	12.51	12.49	11.93	12.48	11.51
	*July	12.69	12.15	13.98	11.83	12.37	12.08	12.78	11.46
	*August	12.68	12.27	13.85	12.17	12.32	12.10	12.60	11.44
	*September	12.52	12.63	13.75	11.97	12.42	12.17	12.49	11.42
	*†October	13.45	13.02	14.00	12.27	13.18	12.64	12.85	12.08

NA=Not available.

*See Explanatory Note 14.

†Preliminary data.

Source: FEA.

Natural Gas

Natural Gas Prices Reported by Major Interstate Pipeline Companies

		PURCHASES			SALES		
		From Domestic Producers	From Canadian and Mexican Sources	Total Purchases	To Industrial Users*	To Resellers**	Total Sales
		Cents per thousand cubic feet					
1973	December	24.5	47.6	26.3	46.4	52.2	52.3
1974	January	24.3	42.7	25.7	48.1	55.0	55.1
	February	25.4	43.2	26.8	49.8	56.4	56.4
	March	25.7	43.2	27.0	50.8	56.9	56.9
	April	25.8	46.4	27.4	49.3	57.6	57.4
	May	25.7	49.3	27.5	49.9	58.6	57.9
	June	26.0	47.7	27.5	50.8	59.4	58.5
	July	26.3	58.7	28.6	52.5	62.0	61.1
	August	26.1	57.5	28.4	55.2	64.4	63.5
	September	27.3	58.8	29.5	54.7	65.2	64.3
	October	27.5	58.9	29.9	56.3	64.4	64.0
	November	28.5	70.9	31.7	58.7	66.8	66.6
	December	32.6	74.5	35.8	60.3	67.2	67.4
1975	January	29.8	104.0	35.2	67.6	71.1	71.4
	February	29.5	105.8	35.2	70.1	74.1	74.4
	March	31.6	102.5	37.0	70.4	77.8	77.9
	April	32.9	102.8	38.3	71.1	82.3	81.9
	May	34.7	100.6	39.8	71.1	83.7	82.8
	June	35.3	98.3	40.2	72.2	85.2	84.0
	July	36.9	101.1	41.8	73.9	84.7	83.6
	August	35.5	141.0	43.3	73.4	85.6	84.3
	September	36.5	141.2	44.5	72.8	85.9	84.6

* Represents direct sales by pipelines to industrial users. Does not include sales to industrial users by resellers.

** Includes the cost of gas to the distributing utility at entrance of distribution system or point of receipt.

Source: Federal Power Commission.

Average Retail Prices for Natural Gas Sold to Residential Customers for Heating Use

	Price
	In cents per thousand cubic feet
1974	
January	113.3
February	115.2
March	116.9
April	118.2
May	119.9
June	120.3
July	122.0
August	124.2
September	125.6
October	127.4
November	131.4
December	134.2
1975	
January	137.9
February	141.3
March	142.7
April	147.1
May	150.1
June	152.1
July	151.1
August	151.8
September	155.7
October	156.3
November	162.3

Source: Bureau of Labor Statistics.

Utility Fossil Fuels

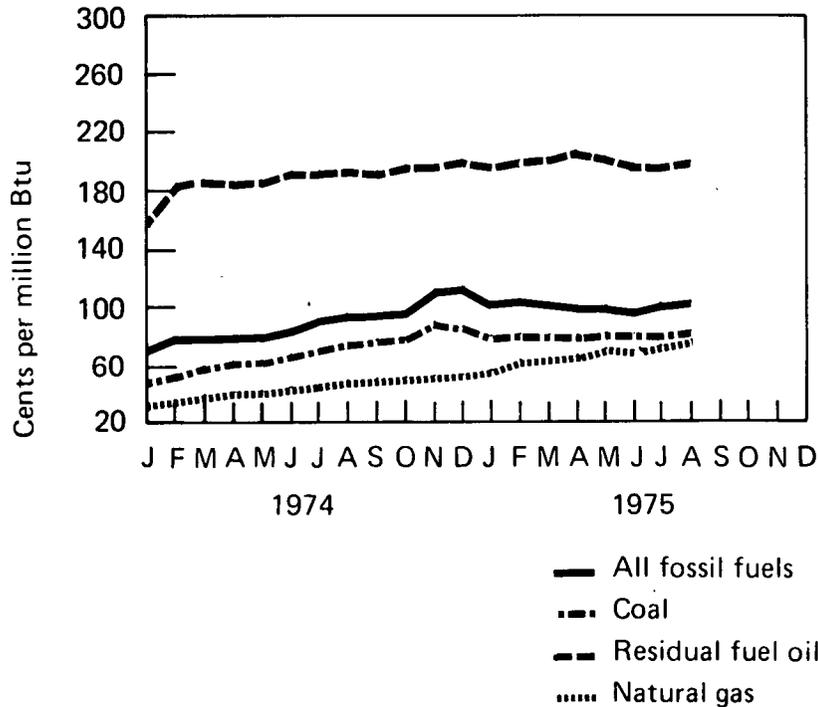
COST OF FOSSIL FUELS DELIVERED TO STEAM-ELECTRIC UTILITY PLANTS

All Fossil Fuels*

Region	1974					1975							
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
New England	191.4	191.6	192.6	198.7	196.6	193.6	198.8	192.2	196.3	190.5	192.7	189.5	188.0
Middle Atlantic	147.8	137.5	139.1	170.7	181.6	145.2	147.1	141.3	138.3	138.5	140.4	154.5	144.5
East North Central	82.7	82.5	84.6	102.0	100.9	86.6	85.6	86.9	86.6	87.4	87.5	89.2	90.1
West North Central	50.3	51.0	50.0	60.0	63.3	63.5	69.0	85.5	64.5	60.3	62.8	63.0	62.7
South Atlantic	128.2	132.3	128.4	144.3	144.2	125.1	120.2	120.4	120.4	120.1	122.5	126.8	125.2
East South Central	68.2	69.7	75.2	86.7	86.4	79.4	83.1	83.0	83.0	84.8	85.3	86.2	84.5
West South Central	57.1	52.1	53.7	58.0	57.5	59.8	67.4	68.9	70.0	72.9	71.2	76.0	77.5
Mountain	46.8	45.0	47.8	45.8	46.8	54.6	62.9	54.5	51.7	52.1	50.9	51.8	50.4
Pacific	118.8	127.3	132.8	157.7	191.3	190.0	194.4	196.3	209.7	187.3	154.5	147.1	171.3
NATIONAL AVG.	95.4	95.9	97.7	111.3	114.7	104.3	106.4	104.2	101.5	101.0	99.3	102.5	103.8

*See Explanatory Note 15.

National Average



Coal													
Cents per million Btu													
Region	1974					1975							
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
New England	93.7	93.9	110.3	108.0	93.5	113.0	134.8	126.9	135.4	125.7	116.5	119.2	127.3
Middle Atlantic	97.4	95.2	94.6	117.4	114.4	99.1	104.7	99.7	98.2	101.7	101.6	105.5	103.8
East North Central	77.7	78.1	79.5	95.0	92.2	80.0	78.4	79.3	80.4	82.0	82.4	82.3	84.3
West North Central	48.3	50.5	48.7	57.0	56.0	56.7	57.9	59.4	60.9	57.7	58.9	60.8	60.7
South Atlantic	107.5	114.5	112.6	126.8	125.8	102.3	97.0	97.4	100.8	98.8	98.4	101.6	101.4
East South Central	61.6	64.1	69.7	77.8	80.7	76.3	79.5	80.1	80.1	81.5	80.5	79.5	79.1
West South Central	17.7	17.7	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	24.0	24.0
Mountain	25.1	25.1	26.7	28.3	26.4	27.9	30.6	32.0	30.3	31.1	31.0	33.1	32.2
Pacific	38.3	39.0	38.5	38.6	38.5	38.4	57.7	57.2	56.8	57.0	58.4	58.2	58.8
NATIONAL AVG.	77.3	79.1	80.9	90.3	88.9	80.9	81.7	80.6	80.5	81.8	81.4	80.8	82.1

Residual Fuel Oil*

Cents per million Btu													
Region	1974					1975							
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
New England	201.8	199.8	202.0	207.5	207.5	202.5	204.1	204.3	202.9	200.1	201.7	196.3	192.6
Middle Atlantic	204.5	200.7	205.4	205.7	211.5	202.7	204.1	204.4	203.2	200.1	201.5	200.4	199.3
East North Central	164.4	161.5	161.3	167.1	164.6	144.9	165.0	163.4	183.1	157.0	168.3	185.2	191.7
West North Central	178.1	182.6	179.5	190.7	190.6	189.6	182.3	171.5	167.8	163.9	165.5	161.1	157.5
South Atlantic	178.9	179.3	183.3	182.2	182.2	180.9	181.6	186.8	188.9	187.7	189.3	185.4	183.8
East South Central	172.6	173.9	171.8	167.9	172.0	174.0	171.6	163.4	159.7	161.0	165.5	167.8	175.0
West South Central	179.3	108.8	186.0	179.7	171.7	177.1	178.2	175.8	191.5	177.7	182.0	186.2	185.2
Mountain	179.0	186.7	185.0	185.1	180.0	192.3	192.4	190.3	206.0	198.0	199.0	209.1	221.3
Pacific	220.3	222.3	223.8	219.5	233.0	223.6	235.0	241.1	261.1	260.6	245.6	253.8	258.1
NATIONAL AVG.	194.6	194.3	198.2	198.9	202.1	197.7	202.0	204.8	209.3	205.6	200.0	198.9	200.8

Natural Gas

Cents per million Btu													
Region	1974					1975							
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
New England	141.2	132.5	NA	NA	NA	NA	NA	97.1	112.4	110.8	121.7	122.1	154.1
Middle Atlantic	74.2	80.5	64.8	70.0	64.3	86.1	84.5	82.4	101.7	98.3	92.7	91.2	87.6
East North Central	80.5	84.3	83.3	80.3	93.9	91.0	92.7	93.0	105.5	120.8	111.6	103.4	104.6
West North Central	43.3	43.8	43.0	44.8	42.3	43.6	43.8	51.5	54.5	58.6	58.1	59.2	56.9
South Atlantic	58.3	55.8	58.5	60.2	64.7	60.3	68.5	72.6	70.2	71.2	72.2	68.9	69.7
East South Central	58.9	71.2	74.3	76.9	87.8	76.2	79.5	82.2	82.7	76.4	77.0	91.0	95.9
West South Central	46.8	46.0	47.8	51.5	52.2	55.6	63.0	64.5	67.0	71.3	69.2	72.7	75.7
Mountain	49.5	52.1	55.7	56.6	70.7	66.9	66.7	63.7	67.4	68.1	69.6	71.8	71.1
Pacific	64.0	64.7	65.9	64.0	68.4	83.2	83.6	80.5	90.1	82.4	84.1	89.7	111.1
NATIONAL AVG.	51.8	52.4	53.2	54.0	55.0	58.2	65.2	66.4	68.9	72.6	71.3	74.8	79.1

NA=Not available.

*See Explanatory Note 15.

**Includes small quantities of coke oven gas, refinery gas, and blast furnace gas.

Source: Federal Power Commission.

Utility Fossil Fuels (Continued)

U.S. Average Delivered Prices of Coal at Utilities

		Contract	Spot
		In dollars per short ton	
1973	January	8.09	9.91
	February	8.31	10.01
	March	8.42	10.07
	April	8.43	10.44
	May	8.51	10.24
	June	8.62	10.43
	July	8.44	10.40
	August	8.45	10.44
	September	8.71	10.67
	October	8.86	11.24
	November	9.13	12.05
	December	9.19	13.34
1974	January	9.83	17.02
	February	10.40	20.57
	March	10.63	22.54
	April	11.28	23.70
	May	11.80	24.21
	June	11.87	25.84
	July	12.05	27.99
	August	12.50	28.87
	September	12.89	30.64
	October	13.30	30.67
	November	14.16	31.95
	December	14.20	31.05
1975	January	14.57	28.12
	February	15.71	25.93
	March	15.68	25.02
	April	15.88	24.52
	May	16.45	23.78
	June	16.40	23.36
	July	16.06	22.35
	August	16.65	22.39

PETROLEUM CONSUMPTION

Petroleum consumption figures for all the nations belonging to the International Energy Agency are now available for August 1974 through August 1975 and show a drop in consumption of 1.5 million barrels per day. Because of unseasonably warm fall weather, most of the countries considered their supplies adequate for the coming winter.

CRUDE OIL PRODUCTION

Following a new high of close to 57 million barrels per day in September, worldwide crude oil production dropped more than 5 million barrels per day in October to 51.6 million barrels per day. Half of the decline was due to a 2.6-million-barrel-per-day production cut by Saudi Arabia. Kuwait and Iran reduced production 1.2 and 1.4 million barrels per day, respectively. The amount of productive capacity shut in by OPEC countries increased from 21.7 percent in September to 35.3 percent in October, reflecting efforts by marketers to bring supply in line with consumption.

Petroleum Consumption

Petroleum Consumption for Major Free World Industrialized Countries

	Total IEA*	Japan**	West Germany	France***	United Kingdom	Canada	Italy†	Other IEA††	
In thousands of barrels per day									
1973	Jan	35,100	4,121	2,868	2,743	2,315	1,667	1,781	3,681
	Feb	36,800	4,532	2,850	2,687	2,313	1,747	1,866	4,551
	Mar	33,500	4,450	2,707	2,528	2,271	1,584	1,710	3,585
	Apr	31,000	4,008	2,809	2,296	2,038	1,431	1,420	3,371
	May	30,900	3,822	2,546	1,890	1,939	1,486	1,285	3,219
	Jun	30,600	3,950	2,674	1,685	1,697	1,474	1,255	3,079
	July	29,600	3,783	2,196	1,566	1,637	1,490	1,303	2,855
	Aug	31,600	3,790	2,738	1,495	1,615	1,557	1,255	3,232
	Sept	31,000	3,813	2,618	1,932	1,727	1,427	1,462	3,333
	Oct	33,600	4,212	2,969	2,482	2,150	1,680	1,610	3,777
	Nov	35,200	4,562	2,883	2,593	2,258	1,801	1,551	3,653
	Dec	33,700	4,716	2,481	2,768	1,906	1,828	1,698	3,533
	AVG.	32,692	4,144	2,693	2,219	1,974	1,597	1,525	3,482
1974	Jan	33,200	4,273	2,556	2,523	2,045	1,823	1,755	3,478
	Feb	33,200	4,708	1,969	2,389	2,127	1,863	1,751	3,411
	Mar	31,200	4,508	2,173	2,249	2,133	1,658	1,621	3,062
	Apr	30,200	3,804	2,539	1,970	1,899	1,560	1,396	3,083
	May	29,600	3,718	2,403	1,915	1,704	1,572	1,349	3,134
	Jun	29,600	3,710	2,414	2,103	1,545	1,455	1,290	3,010
	July	29,900	3,573	2,548	1,703	1,531	1,534	1,368	3,045
	Aug	30,100	3,787	2,476	1,506	1,513	1,463	1,237	3,078
	Sept	30,600	3,868	2,473	1,996	1,663	1,414	1,487	3,701
	Oct	32,300	3,843	2,613	2,045	2,049	1,680	1,536	3,554
	Nov	R32,600	4,086	2,432	2,260	2,108	1,713	1,587	R3,459
	Dec	R33,700	4,401	2,261	2,492	1,983	1,831	1,707	R3,520
	AVG.	R31,341	4,019	2,408	2,094	1,857	1,630	1,521	R3,294
1975	Jan	32,900	3,850	2,183	2,185	1,993	1,691	1,725	3,475
	Feb	33,000	4,242	2,455	2,238	1,913	1,870	1,737	3,535
	Mar	30,300	3,978	2,234	1,948	1,773	R1,558	1,482	R2,659
	Apr	30,200	3,463	2,431	2,202	1,872	R1,592	1,403	R3,398
	May	27,700	3,304	2,253	1,640	1,488	R1,474	1,171	2,992
	Jun	28,200	3,323	2,106	1,643	1,404	R1,550	1,194	3,012
	July	28,300	R3,421	2,319	R1,483	1,324	1,536	1,135	2,803
	Aug	28,600	R3,397	2,360	R1,294	1,200	1,445	1,021	2,936
	Sept	NA	3,583	2,309	R1,776	1,474	1,475	1,341	NA
	Oct	NA	NA	NA	1,895	NA	NA	NA	NA
	AVG.	29,867	3,613	2,297	1,826	1,601	1,574	1,353	3,095
	(through last available date)								

Note: All recent figures are estimates.

*The 18 signatory nations of the International Energy Agency (IEA) are: Austria, Belgium, Canada, Denmark, Federal Republic of Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States. Except for the United States, inland consumption excludes bunkers, refinery fuel, and losses.

**Excludes liquefied petroleum gases and condensates.

***Not a member of IEA.

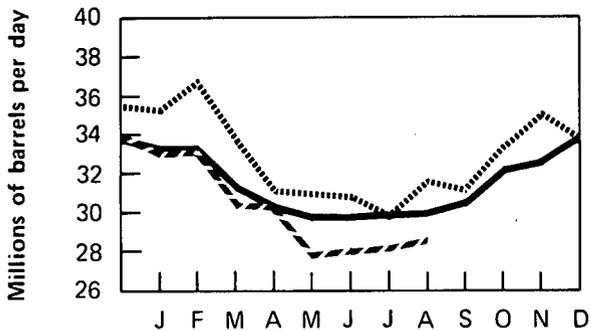
†Principal products only.

††Excludes the United States.

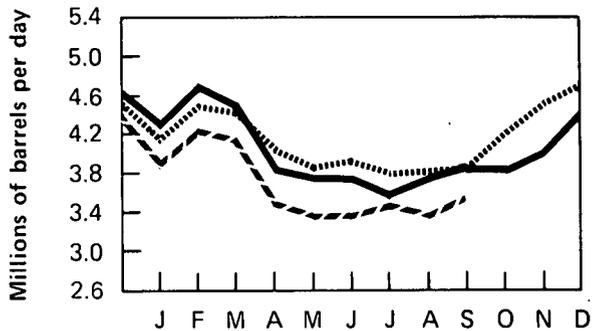
NA=Not available.

Source: Central Intelligence Agency.

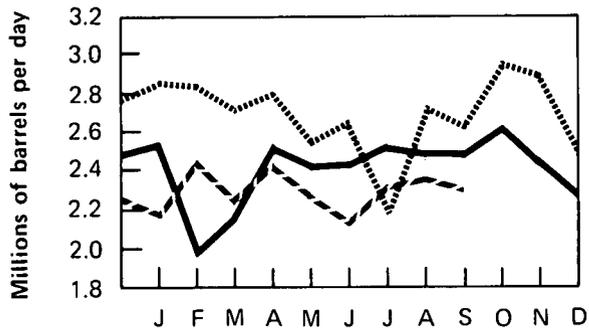
Total IEA



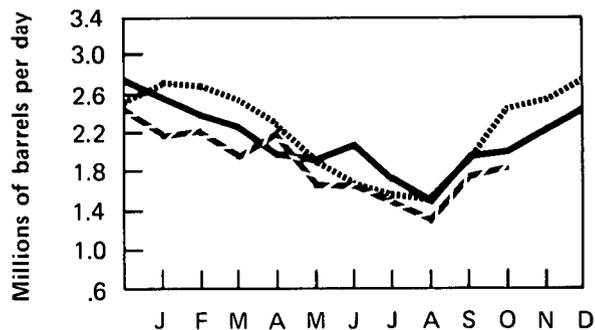
Japan*



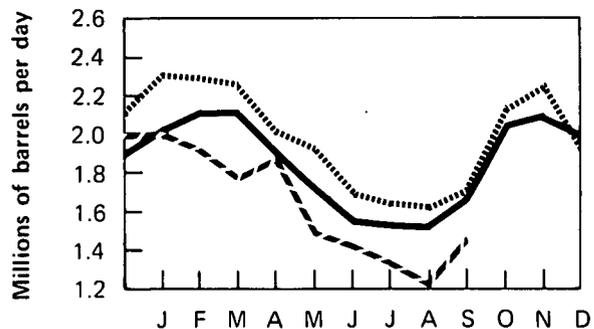
West Germany



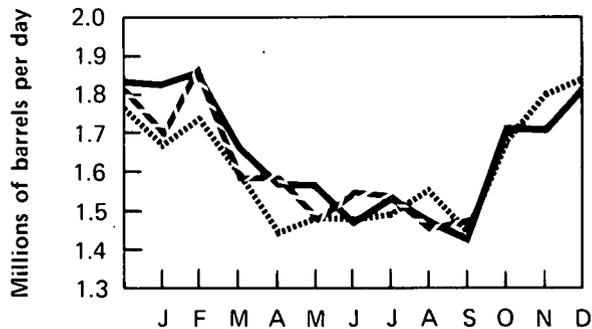
France**



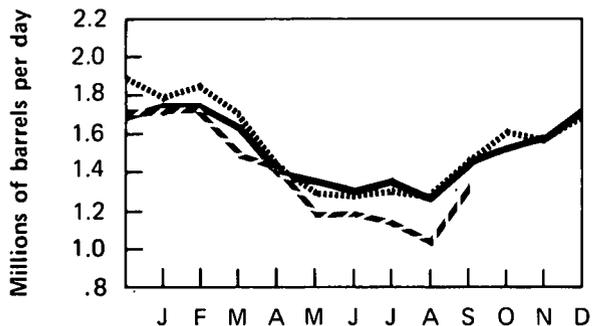
United Kingdom



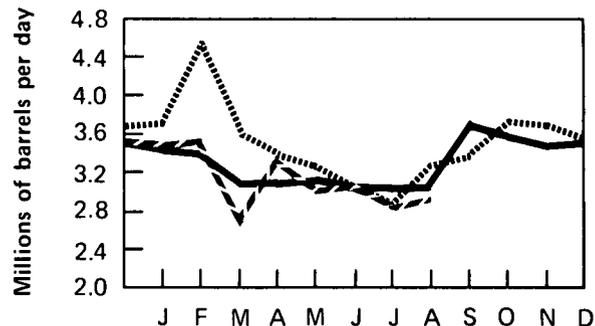
Canada



Italy***



Other IEA†



*Excludes liquefied petroleum gases and condensates.

**Not a member of IEA.

***Principal products only.

†Excludes the United States.

..... 1973

— 1974

- - - 1975

Crude Oil Production

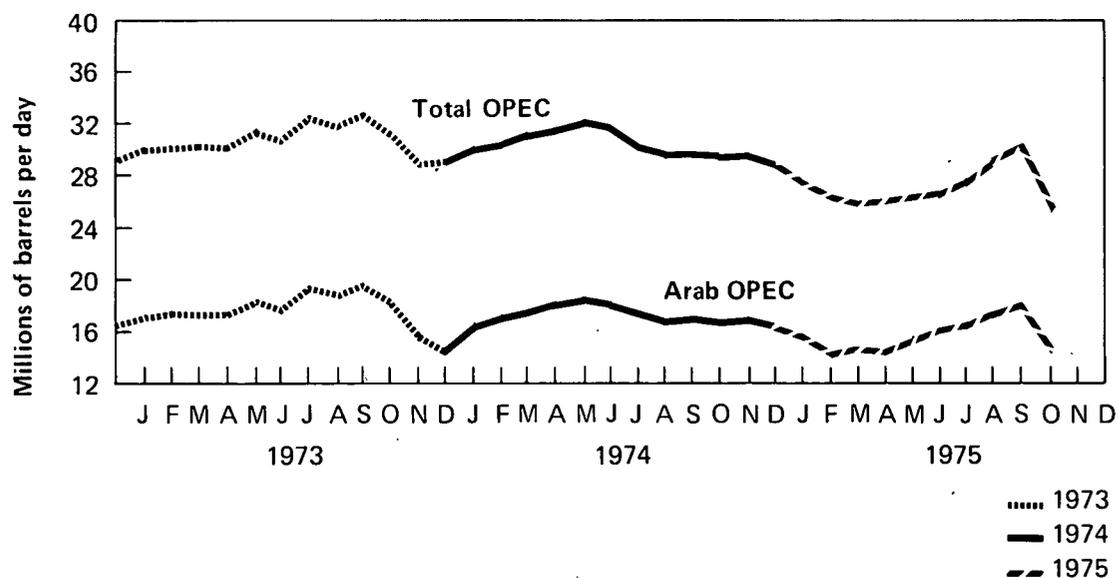
Crude Oil Production for Major Petroleum Exporting Countries – October 1975

Country	Production				Production Capacity	Production Shut in
	1973	1974	1975 (10 months)	October	October	October
	In thousands of barrels per day					In percent
Algeria	1,070	940	918	900	1,000	10.0
Iraq	1,964	1,820	2,284	2,490	3,000	17.0
Kuwait*	3,024	2,550	2,106	1,530	3,500	56.3
Libya	2,187	1,520	1,452	1,650	2,500	34.0
Qatar	570	520	405	390	700	44.3
Saudi Arabia*	7,607	8,480	7,037	5,860	11,500	49.0
United Arab Emirates	1,518	1,680	1,647	700	2,340	27.4
Subtotal: Arab OPEC	17,940	17,510	15,858	14,520	24,540	40.8
Ecuador	204	160	159	160	250	36.0
Gabon	147	180	208	200	250	20.0
Indonesia	1,339	1,380	1,293	1,370	1,700	19.4
Iran	5,861	6,040	5,434	4,730	6,800	30.4
Nigeria	2,053	2,260	1,749	1,910	2,500	23.6
Venezuela	3,364	2,970	2,436	2,350	3,000	21.7
Subtotal: Non-Arab OPEC	12,968	12,990	11,279	10,720	14,500	26.1
Total: OPEC	30,908	30,500	27,137	25,240	39,040	35.3
Canada	1,798	1,695	1,446	1,430	2,016	29.1
Mexico	465	580	695	780	840	7.1
Total: OPEC, Canada Mexico	33,171	32,775	29,278	27,450	41,896	34.5
Total World	55,715	55,855	53,107	51,570		

*Includes about one-half of Neutral Zone production which amounted to approximately 460,000 barrels per day in October.

Source: Central Intelligence Agency.

OPEC Countries Crude Oil Production



Definitions

Base Production Control Level

The total number of barrels of domestic crude petroleum produced from a particular property in the corresponding month of 1972.

Branded Independent Marketer

A firm which is engaged in the marketing or distribution of refined petroleum products pursuant to (1) an agreement or contract with a refiner (or a firm which controls, is controlled by, or is under common control with such refiner) to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner (or any such firm), or (2) an agreement or contract under which any such firm engaged in the marketing or distribution of refined petroleum products is granted authority to occupy premises owned, leased, or in any way controlled by a refiner (or firm which controls, is controlled by, or is under common control with such refiner), but which is not affiliated with, controlled by, or under common control with any refiner (other than by means of a supply contract, or an agreement or contract described in parts (1) or (2) of this definition), and which does not control such refiner.

Ceiling Price

The maximum permissible selling price for a particular grade of domestic crude petroleum in a particular field is the May 15, 1973, posted price plus \$1.35 per barrel.

Controlled Crude Oil

Domestically produced crude petroleum that is subject to the ceiling price for crude oil. For a particular property which is not a stripper-well lease, the volume of controlled oil equals the base production control level minus an amount of released oil equal to the new oil production from that property.

Crude Oil Domestic Production

The volume of crude oil flowing out of the ground. Domestic 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 Imports

The monthly volume of crude oil imported which is reported by receiving refineries, including crude oil entering the U.S. through pipelines from Canada.

Crude Oil Input to Refineries

Total crude oil used as input for the refining process, less crude oil lost or used for refinery fuel.

Crude Oil Stocks

Stocks held at refineries and at pipeline terminals. Does not include stocks held on leases (storage facilities adjacent to the wells), which historically total approximately 13 million barrels.

Dealer Tankwagon (DTW) Price

The price at which a retail dealer purchases gasoline from a distributor or a jobber.

Distillate Fuel Oil

The lighter fuel oils distilled off during the refining process. Included are products known as ASTM grades Nos. 1 and 2 heating oils, diesel fuels, and No. 4 fuel oil. The major uses of distillate fuel oils include heating, fuel for on- and off-highway diesel engines, and railroad diesel fuel. Minor quantities of distillate fuel oils produced and/or held as stocks at natural gas processing plants are not included in this series.

Domestic Demand for Refined Petroleum Products

A calculated value, computed as domestic production plus net imports (imports less exports), less the net increase in primary stocks. It, therefore, represents the total disappearance of refined products from primary supplies.

Domestic Uncontrolled Crude Oil

That portion of domestic crude oil production including new, released, and stripper oil which may be sold at a price exceeding the ceiling price.

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 purchase "old" oil. A refiner must purchase entitlements for the amount of "old" oil he processes in excess of the national "old" oil supply ratio, defined as total "old" oil purchases by refiners as a percent of total crude runs to stills.

Firm Natural Gas Service

High priority gas service in which the pipeline company is under contract to deliver a specified volume of gas to the customer on a non-interruptible basis. Residential and small commercial facilities usually fall into this category.

Interruptible Natural Gas Service

Low priority gas service in which the pipeline company has the contractual option to temporarily terminate deliveries to customers by reason of claim of firm service

customers or higher priority users. Large commercial facilities, industrial users, and electric utilities usually fall into this category.

Jet Fuel

Includes both naphtha-type and kerosine-type fuels meeting standards for use in aircraft turbine engines. Although most jet fuel is used in aircraft, some is used for other purposes, such as for generating electricity in gas turbines.

Jobber

A petroleum distributor who purchases refined product from a refiner or terminal operator for the purpose of reselling to retail outlets and commercial accounts or for the purpose of retailing through his own retail outlets.

Jobber Margin

The difference between the price at which a jobber purchases refined product from a refiner or terminal operator and the price at which the jobber sells to retail outlets. This does not reflect margins obtained by jobbers through retail sales or commercial accounts.

Jobber Price

The price at which a petroleum jobber purchases refined product from a refiner or terminal operator.

Landed Cost

The cost of imported crude oil equal to actual cost of crude at point of origin plus transportation cost to the United States.

Line Miles of Seismic Exploration

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

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 20 or more States.

Motor Gasoline Production

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

Motor Gasoline Stocks

Primary motor gasoline stocks held by gasoline producers. Stocks at natural gas processing plants are not included.

Natural Gas Liquids (NGL)

Products obtained from natural gasoline plants, cycling plants, and fractionators after processing the natural gas.

Included are ethane, liquefied petroleum (LP) gases (propane, butane, and propane-butane mixtures), natural gasoline, plant condensate, and minor quantities of finished products such as gasoline, special naphthas, jet fuel, kerosine, and distillate fuel oil.

New Oil

The volume of domestic crude petroleum produced from a property in a specific month which exceeds the base production control level for that property.

Nonbranded Independent Marketer

A firm which is engaged in the marketing or distribution of refined petroleum products, but which (1) is not a refiner, (2) is not a firm which controls, is controlled by, is under common control with, or is affiliated with a refiner (other than by means of a supply contract), and (3) is not a branded independent marketer.

Old Oil

Same as controlled crude oil.

Power Ascension Nuclear Powerplant

A nuclear powerplant that has been licensed by the Nuclear Regulatory Commission to operate, but which 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.

Primary Stocks of Refined Petroleum Products

Stocks held at refineries, bulk terminals, and pipelines. They do not include stocks held in secondary storage facilities, such as those held by jobbers, dealers, independent marketers, and consumers.

Refiner Acquisition Cost

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

Released Oil

That portion of the base production control level for a property which is equal to the volume of new oil produced in that month and which may be sold above the ceiling price. The amount of released oil may not exceed the base production control level for that property.

Residual Fuel Oil

The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery oper-

ations. Included are products known as ASTM grades Nos. 5 and 6 oil, heavy diesel oil, Navy Special Oil, Bunker C oil, and acid sludge and pitch used as refiner fuels. Residual fuel oil is used for the production of electric power, for heating, and for various industrial purposes.

or service wells. This is a standard definition of the American Petroleum Institute.

Rotary Rig

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

Separative Work Unit (SWU)

The measure of work required to produce enriched uranium from natural uranium. Enrichment plants separate natural uranium feed material into two groups, an enriched product group with a higher percentage of U-235 than the feed material and a depleted tails group with a lower percentage of U-235 than the feed material. To produce 1 kilogram of enriched uranium containing 2.8 percent U-235, and a depleted tails assay containing 0.3 percent U-235, it requires 6 kilograms of natural uranium feed and 3 kilograms of separative work units (3 SWU).

Stripper Well Lease

A property of which the average daily production of crude petroleum and petroleum condensates, including natural gas liquids, per well did not exceed 10 barrels per day during the preceding calendar year.

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.

Total Refined Petroleum Products Imports

Imports of motor gasoline, naphtha-type jet fuel, kerosine-type jet fuel, liquefied petroleum gases, kerosine, distillate fuel oil, residual fuel oil, petro-chemical feedstocks, special naphthas, lubricants, waxes, and asphalt. Imports of bonded bunkers, jet fuel, distillate and residual fuel oils for onshore military use, and receipts from Puerto Rico, the Virgin Islands, and Guam are based on data reported to the FEA Office of Oil Imports.

Unrecouped Costs

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

Well

Hole drilled for the purpose 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,

Explanatory Notes

1. Domestic production of energy includes production of crude oil and lease condensate, natural gas (wet), and coal (anthracite, bituminous, and lignite), as well as electricity output from hydroelectric and nuclear powerplants and industrial hydroelectric power production.

The volumetric data were converted to approximate heat contents (Btu-values) of the various energy sources using conversion factors listed in the Units of Measure.

2. Domestic consumption of energy includes domestic demand for refined petroleum products, consumption of coal (anthracite, bituminous, and lignite) and natural gas (dry), electricity output from hydroelectric and nuclear powerplants, industrial hydroelectric power production, and imports of electric power. Approximate heat contents (Btu-values) were derived using conversion factors listed in the Units of Measure. Electricity imports were converted using the Btu-content of hydroelectric power. 1975 electricity imports were estimated on the basis of imports levels during 1974.

3. Graphic presentations of petroleum volumetric data show Bureau of Mines (BOM) figures for 1973 through August 1975 and FEA figures for September 1975 forward. FEA monthly data for May 1974 through March 1975 were based on the *Weekly Petroleum Statistics Report* which presented volumetric data on domestic petroleum receipts and imports for all refiners and bulk terminal operators, as well as production and stock levels for each major petroleum product. In April 1975, the FEA weekly report was replaced by the *Monthly Petroleum Statistics Report* which presents essentially the same data on a monthly basis.

Conceptually, the major difference between FEA and BOM data occurs in the "Stocks" series. Stock levels reported by FEA for the major petroleum products are higher than those reported by BOM, because the FEA series includes stocks of independent terminal operators not counted by BOM. Beginning in December 1974, however, BOM data reflect the inclusion of approximately 100 additional bulk terminals in the coverage of primary stocks, bringing the data base for the 2 series into closer agreement.

In the current issue, cumulative 1973 and 1974 petroleum data presented in the text are based on BOM figures. Discussions of cumulative 1975 data are based on BOM figures for January through August and FEA figures for September forward.

4. Oil heating degree-days relate demand for distillate heating fuel to outdoor air temperature. Heating degree-days are defined as deviations of the mean daily temper-

ature at a sampling station below a base temperature equal to 65° F by convention. Numerous studies have shown that when the outside temperature is 65°, most buildings can maintain an indoor air temperature of 70° without the use of heating fuels.

Mean daily temperature information is forwarded to the National Oceanic and Atmospheric Administration, Department of Commerce, from approximately 200 weather stations around the country. These data are used to calculate statewide heating degree-day averages based on population. The population-weighted State figures are aggregated into Petroleum Administration for Defense Districts and the national average, using a weighting scheme based on each State's consumption of distillate fuel oil per degree-day (1974 data base).

5. Domestic demand figures for natural gas liquids (NGL) as reported by BOM and reproduced 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. 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 NGL stock series shown in this volume includes liquids held as stocks at both natural gas processing plants and at refineries.

6. 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.

7. Bituminous coal and lignite consumption data reported by the Bureau of Mines are derived from information provided by the Federal Power 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 a calculated value representing total disappearance from primary supplies.

8. Bituminous coal and lignite production is calculated from the number of railroad cars loaded at mines, based on the assumption that approximately 60 percent of the coal produced is transported by rail. Production data are

estimated by the Bureau of Mines from Association of American Railroads reports of carloadings.

9. Quantities of uranium are measured by various units at different stages in the fuel cycle. At the mill, quantities are usually expressed as pounds or short tons of U_3O_8 . After the conversion stage, the units of measure are either metric tons (MT) of UF_6 or metric tons of uranium (MTU). The latter designation expresses only the elemental uranium content of UF_6 .

Following the enrichment stage, the same units are used, but the U-235 content has been enhanced at the expense of loss of material. At the fabrication stage, UF_6 is changed to UO_2 , and the standard unit of measure is the MTU. We have chosen to present all uranium quantities as MTU; conversion factors to other units are given in the section on Units of Measure.

10. The units used to describe power generation at nuclear plants are all 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 thermal 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 either as megawatt hours (MWh) or kilowatt hours (KWh). Tables in the nuclear section show generated electricity as average electrical power. This enables a more direct comparison to design capacity and to previous months' performances. To obtain the quantity of electricity generated during a given time period (in megawatt hours), multiply the average power level (in megawatts) by the number of hours during that period.

The energy extracted from uranium fuel is expressed as thermal megawatt days per metric ton of uranium (MWD/MTU). The production of plutonium in the fuel rods is expressed as kilograms of plutonium per metric ton of discharged uranium (kg/MTU).

11. 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.

12. Monthly mileage estimates for 1974 and 1975 are based on the average number of miles traversed per crew day in 1974.

13. Prior to January 1975, diesel fuel prices were obtained from retail gasoline dealers that also sold diesel fuel. Beginning in January 1975, the diesel fuel survey was expanded to include selected truck stops plus additional retail gasoline dealers that sold diesel fuel. Consequently, diesel fuel prices for January 1975 forward are not exactly comparable to prior data. Selling price estimates are based on a survey of 31 cities. Margins are based on a survey of 10 cities.

14. The refiner acquisition cost of imported crude petroleum is the average landed cost of imported crude petroleum 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.

The estimated landed cost of imported crude petroleum 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 petroleum 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.

15. The weighted average utility fuel cost for the total United States includes distillate fuel oil delivered to utilities whereas the regional breakdown for residual fuel oil prices represents only No. 6 fuel oil prices.

Units of Measure

Weight

1 metric ton *contains* 1.102 short tons

Conversion Factors for Crude Oil

Average gravity

1 barrel (42 gallons) *weighs* 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

Approximate Heat Content of Various Fuels

Petroleum

Crude Oil 5.800 million Btu/barrel

Refined products

 Imports, average 6.000 million Btu/barrel

 Consumption, average 5.517 million Btu/barrel

Gasoline

Jet Fuel, average

 Naphtha-type 5.592 million Btu/barrel

 Kerosine-type 5.355 million Btu/barrel

 5.670 million Btu/barrel

Distillate fuel oil 5.825 million Btu/barrel

Residual fuel oil 6.287 million Btu/barrel

Natural gas liquids 4.031 million Btu/barrel

Natural gas

Wet 1,093 Btu/cubic foot

Dry 1,021 Btu/cubic foot

Coal

Bituminous and lignite

 Production 24.01 million Btu/short ton

 Consumption 23.65 million Btu/short ton

Anthracite 25.40 million Btu/short ton

Electricity Conversion Heat Rates

Fossil fuel steam-electric

Coal 10,176 Btu/kilowatt hour

Gas 10,733 Btu/kilowatt hour

Oil 10,826 Btu/kilowatt hour

Nuclear steam-electric 10,660 Btu/kilowatt hour

Hydroelectric 10,389 Btu/kilowatt hour

Electricity Consumption 3,412 Btu/kilowatt hour



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