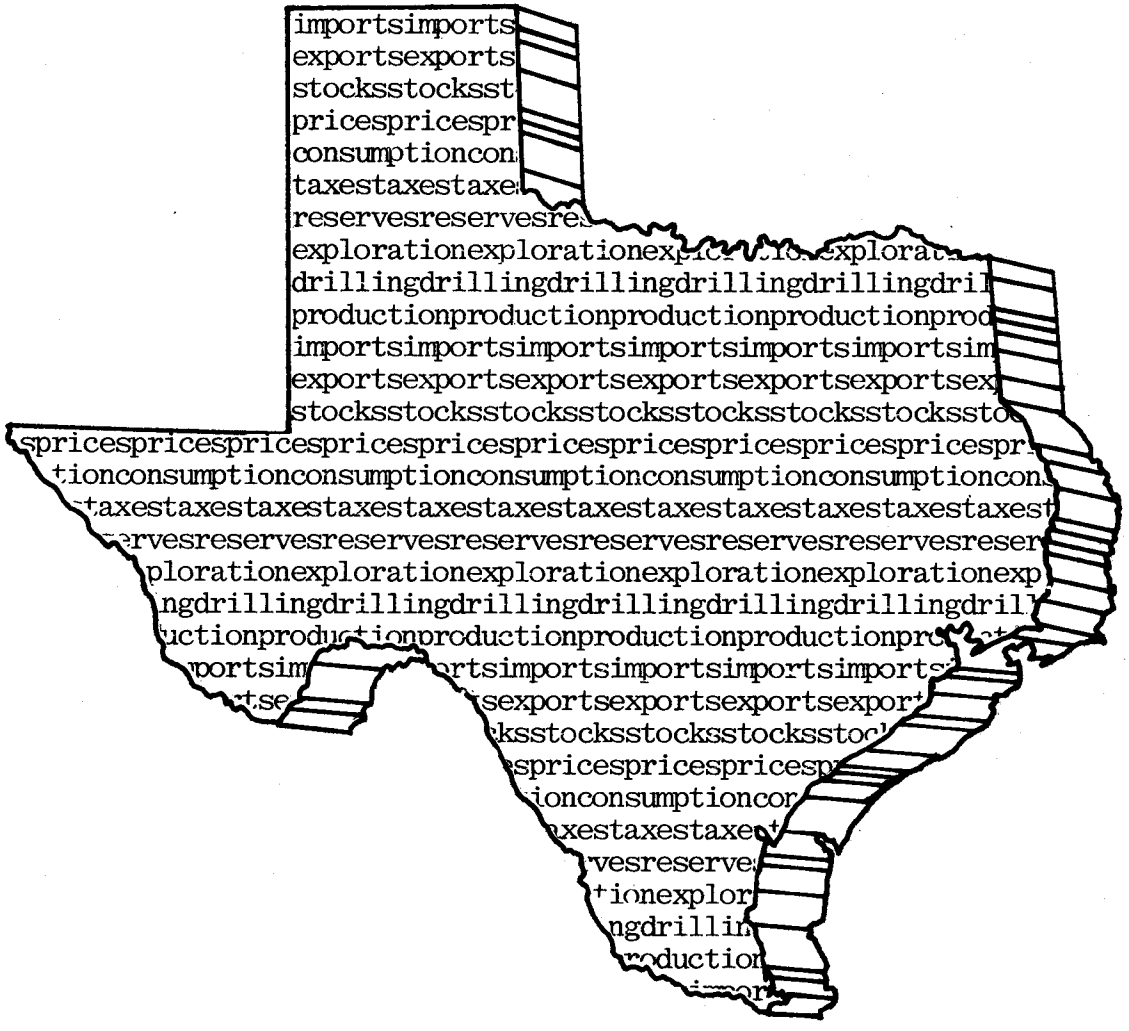

TEXAS ENERGY: A TWENTY-FIVE YEAR HISTORY

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TEXAS ENERGY:
A TWENTY-FIVE YEAR HISTORY

BY
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AND GINNY CUMMING

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FORECASTING & POLICY ANALYSIS DIVISION
AUSTIN, TEXAS
AUGUST, 1977

PREFACE AND ACKNOWLEDGEMENTS

The Energy Policy Planning Act of 1975, enacted by the 64th Legislature of the State of Texas, established the Governor's Energy Advisory Council as a separate state agency responsible for energy policy planning in Texas. One of the functions for which this agency is responsible is the development and maintenance of an energy data base system for Texas. The purpose of this Energy Data Bank is to provide data items that give an overview of the historical production, reserves, transmission, conversion and consumption of energy in Texas and to provide data for analytic purposes required in econometric and engineering analysis work of the Council.

This book summarizes selected information contained in the data base and presents it graphically for reference use. Energy data were compiled for the period 1952-1976. In some cases, the methods of reporting or definitions of items changed during the 25-year period and a complete series of data could not be obtained. However, 1952 is the initial year for coverage of most data items in this report. The focus of this book is to provide energy statistics in a historical framework; various other data with shorter histories have been compiled but are not included in the data base at this time.

The information contained in this book has been reorganized in many cases and does not represent the entire contents of the Texas Energy Data Bank. A list of data base items is included in the appendix for use when requesting information from this office.

Development of the Texas Energy Data Bank began in early 1976 and was completed in mid-1977. Two GEAC staff members were responsible for the completion of the Data Bank. Ms. Marla Stevens researched and organized the contents of the data base and supervised the collection of data. Ms. Ginny Cumming provided the system analysis and programming for the development of the data bank computer software. The data base work was completed under the general direction of Dr. Milton L. Holloway, who also provided expertise on technical matters. The contents of this book were organized and the format designed by Ms. Stevens, and the computerized data reports and graphs were prepared by Ms. Cumming.

Every effort has been made to provide information that is accurate and reliable. Data has been checked and rechecked with the original source for accuracy in compilation. If any questions arise relating to information provided here, this office may be contacted for clarification or additional information.

Collection of timely data required the assistance of many individuals associated with various state and federal government agencies and industry associations. The authors wish to thank generally these many people for their willingness to assist and regret that they cannot be acknowledged individually. For their contributions to data research and technical interpretations of energy data special thanks are extended to Mr. Leonard Fanelli, Mr. James Diehl and Ms. Lulie Crump of the U.S. Bureau of Mines and Mr. Tom Woods of the Federal Power Commission.

Individuals within the GEAC made significant contributions to this book. Ms. Brenda Sanders compiled and checked quantities of data, and Ms. Jennifer Evans, as editor, was responsible for the production of the book. The authors thank Dr. Holloway for providing constant encouragement in the various stages of the project.

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INTRODUCTION

ENERGY IN TEXAS

Major events occurred in the 1970s to reverse many of the long-standing trends in Texas energy production, processing and consumption. Declining production of oil and gas and rapidly increasing energy prices have prompted the beginnings of a shift from the historical near-total reliance in Texas on oil and gas for energy to coal and other developing resources.

Prior to the early years of this decade, crude oil and natural gas production increased rapidly with the growth in demand. Relative prices to purchasers were both inexpensive and stable due to product availability. In the 1970s, after a decade of lessened drilling activity and several years of decreasing reserves, the patterns changed. Demand began to surpass productive capacity. Production peaked in 1972 and declined each year thereafter; wellhead prices began to rise rapidly in 1973. Drilling activity has been increasing since 1973; however, total petroleum production is expected to continue its decline in the near term because it will take several years for the increased drilling to result in discovery and production of new reserves.

Changing petroleum production levels in Texas affect the rest of the nation as well, since a major portion of the state's production has historically been exported. Texas has contributed 37 percent of the nation's oil and gas production to date. Declining production levels in Texas result in declining levels of exports, but the ratio of exports to production will remain fairly constant in the near future due to the existence of long-term natural gas contracts and a stable refinery structure.

The combination of declining oil production and increasing demand for petroleum products has effected changes in the state's petroleum refining industry. A total reliance on domestically produced oil for refinery input in the late 1960s has shifted to a one-third reliance on imported oil in 1976. Refining industry growth in Texas is closely aligned with national product demand increases; more than one-fourth of the nation's refinery capacity is located in Texas, a significant portion of which is devoted to manufacture of feedstock for nearby petrochemical facilities. More than two-thirds of total refinery output in Texas is exported to consumers in other states throughout the nation.

After many years of steady growth, total energy consumption in the state declined in 1974 and 1975. The economic recession contributed significantly to the reduction in industrial energy use, and higher real prices had an important effect on residential and commercial consumption. Overall, natural gas prices increased most rapidly and that increase led to the greatest reduction in final consumer demand. Total electricity consumption in the state continued to increase, but at a much slower rate than in the past. Higher electricity prices resulted from the increased natural gas prices and contributed to the slower growth in electricity demand. More than 90 percent of the state's electricity was generated from natural gas prior to recent years.

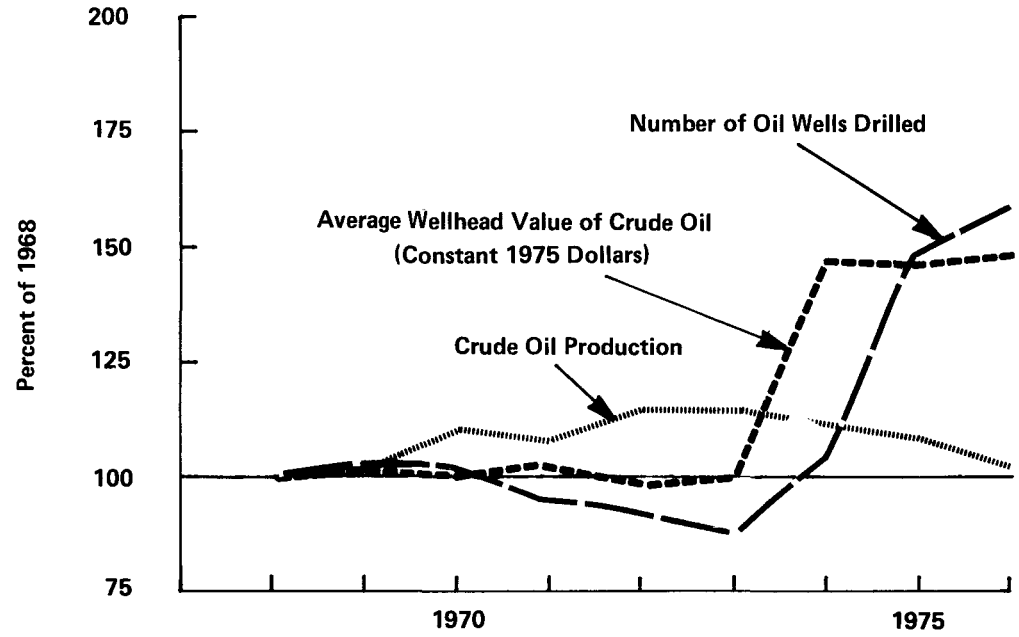
Texas has historically led the nation in energy consumption, as it has led in energy production. A major reason is that oil and gas-related industries, such as pipeline transportation systems, and the petroleum refining and petrochemical industries, consume large quantities of energy and have developed in Texas primarily because of the proximity to petroleum production. In 1975, petrochemical fuel use alone constituted over one-third of the state's total consumption.

A shift from natural gas to increased use of coal has already begun in the electric power sector. Development and substitution of alternate fuels for heat and process steam by industry will result in an adequate supply of petroleum for feedstock uses as well as for those industries which cannot switch from oil or natural gas.

The energy industry is one of the main pillars of the economy of Texas. Growth or decline in energy-related and energy-consuming industries contributes in a major way to levels of employment and income in the state. The level of energy production, through tax revenues, directly affects the state's ability to provide services to Texas citizens. The economy of Texas should continue to prosper if adequate energy is available in the future. Any changes in patterns of energy production, and to a lesser extent consumption will have far-reaching economic effects.

COMPARATIVE GRAPHS

CRUDE OIL PRODUCTION, PRICE AND WELLS DRILLED



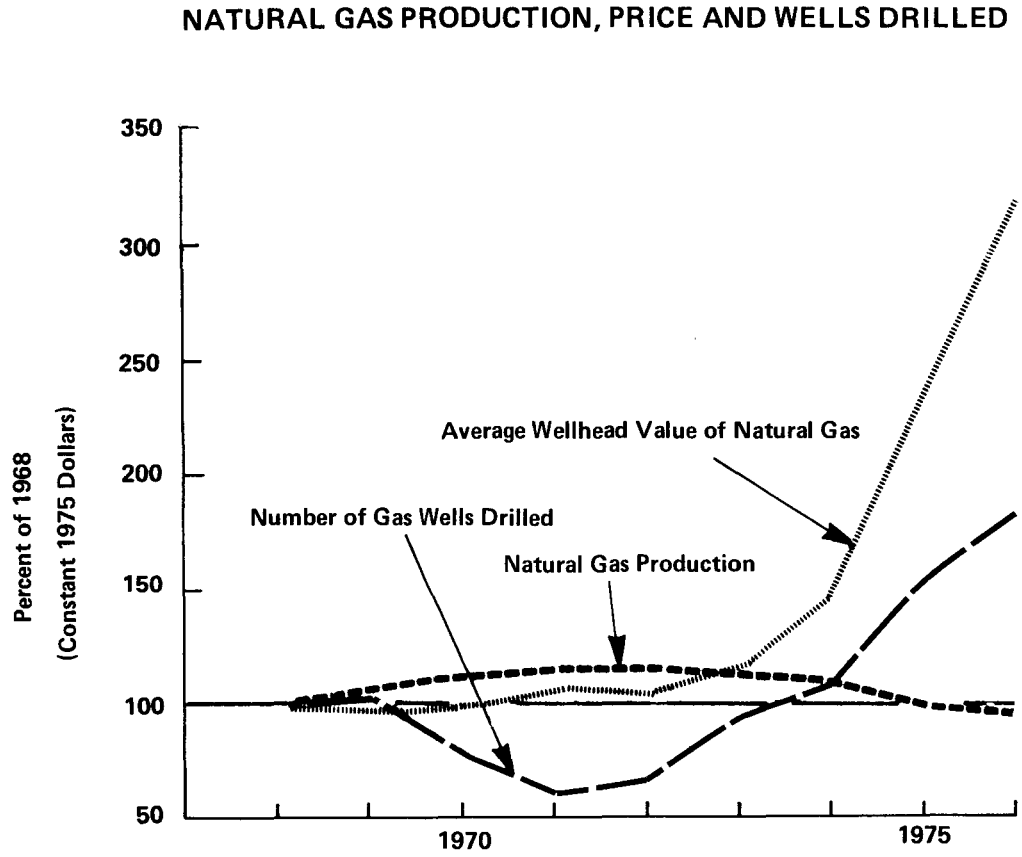
Using 1968 as an index year, the increase in oil wells drilled from 1968 to 1976 was more rapid than the increase in the wellhead value of crude oil or crude oil production. The large rise in the number of wells drilled in 1975 resulted primarily from the increased wellhead prices for "new" oil in 1974.

Crude oil production increased 14.9 percent over the 1968 level by 1972, then declined to 1.8 percent below the 1968 production level by 1976.

The average wellhead value of crude oil (in constant dollars) declined 1.5 percent over the 1968 level by 1972, registered a large increase in 1974, and in 1976 was 48.6 percent greater than the 1968 value.

The number of oil wells drilled declined 12.0 percent below the 1968 level by 1973, increased a rapid 42 percent in 1975, and by 1976 was 58.5 percent higher than the 1968 total.

COMPARATIVE GRAPHS



The dramatic increase in the wellhead value of natural gas beginning in 1973 was followed by a similar increase in the number of gas wells drilled.

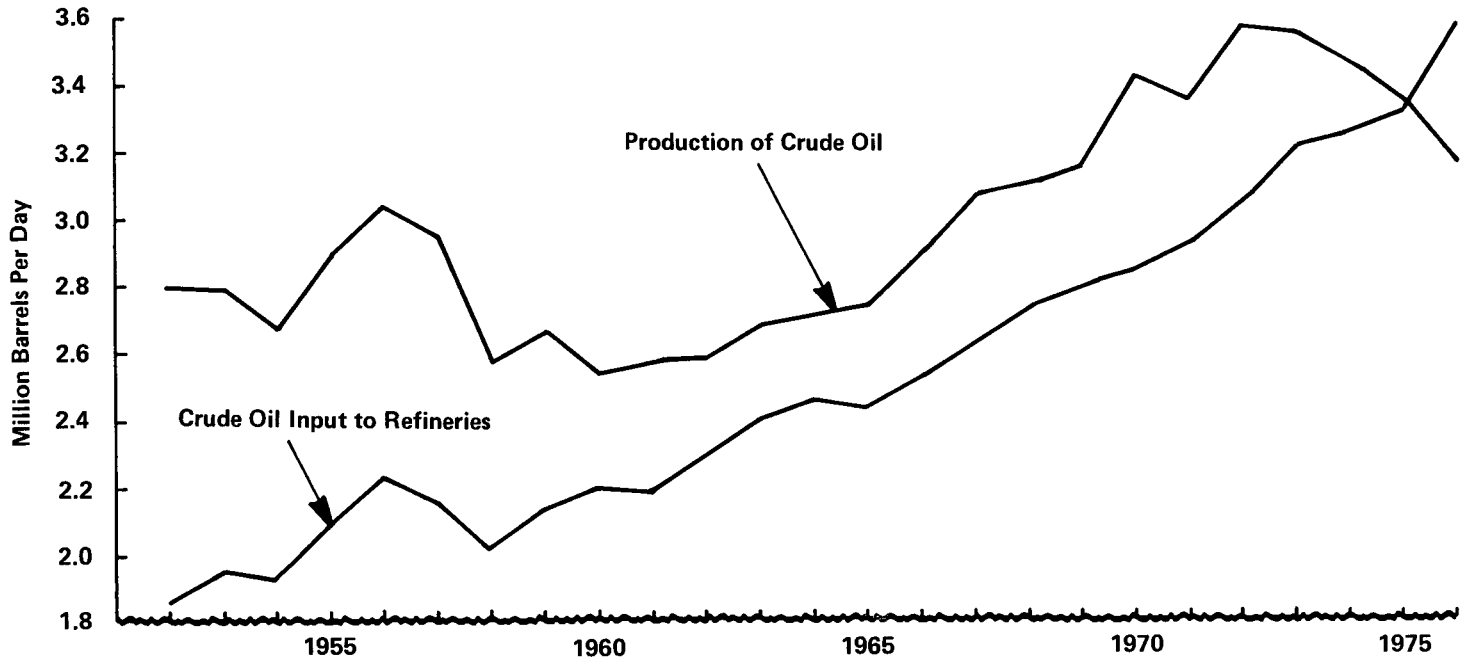
Natural gas production increased to 15.5 percent over the 1968 level by 1972, then declined annually to reach 4.0 percent below the 1968 level in 1976.

The number of gas wells drilled in 1971 was 39.4 percent below the 1968 level. Drilling increased annually after 1971; the largest increase, 42.4 percent, was registered in 1975. Another large rise in the number of gas wells drilled occurred in 1976. The total for that year was 82.2 percent greater than the 1968 level of drilling.

The average wellhead value of natural gas was 14.9 percent above the 1968 level in 1973. The average value increased 28.3 percent in 1974, 52.8 percent in 1975, and 32.3 percent in 1976, resulting in a 198.1 percent rise over the 1968 level by 1976.

COMPARATIVE GRAPHS

COMPARISON OF CRUDE OIL PRODUCTION AND CRUDE OIL INPUT TO REFINERIES



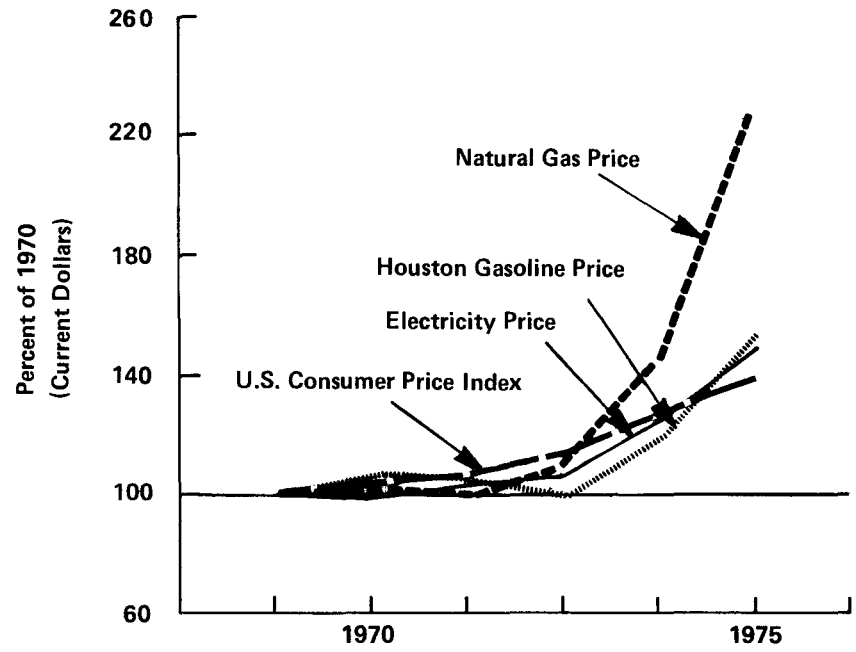
In 1976, more crude oil was refined at Texas refineries than was produced in the state. From the beginning of the state's oil and gas history up until 1975 the reverse was true, but an increasing refinery capacity coupled with declining production brought about the change.

In 1972, 3.6 million barrels of oil were produced daily and Texas refineries received 3.0 million barrels of oil per day. In 1976, 3.2 million barrels of oil were produced daily while 3.6 million barrels per day entered Texas refineries.

A portion of the crude oil produced in Texas is exported to other states, and a portion of the crude oil input to Texas refineries is imported from other states. Since 1973 imported oil has supplied a significant portion of the crude oil input to Texas refineries. In fact, in 1976 foreign oil supplied 35 percent of the state's total refinery receipts.

COMPARATIVE GRAPHS

ENERGY PRICES AND U.S. CONSUMER PRICE INDEX

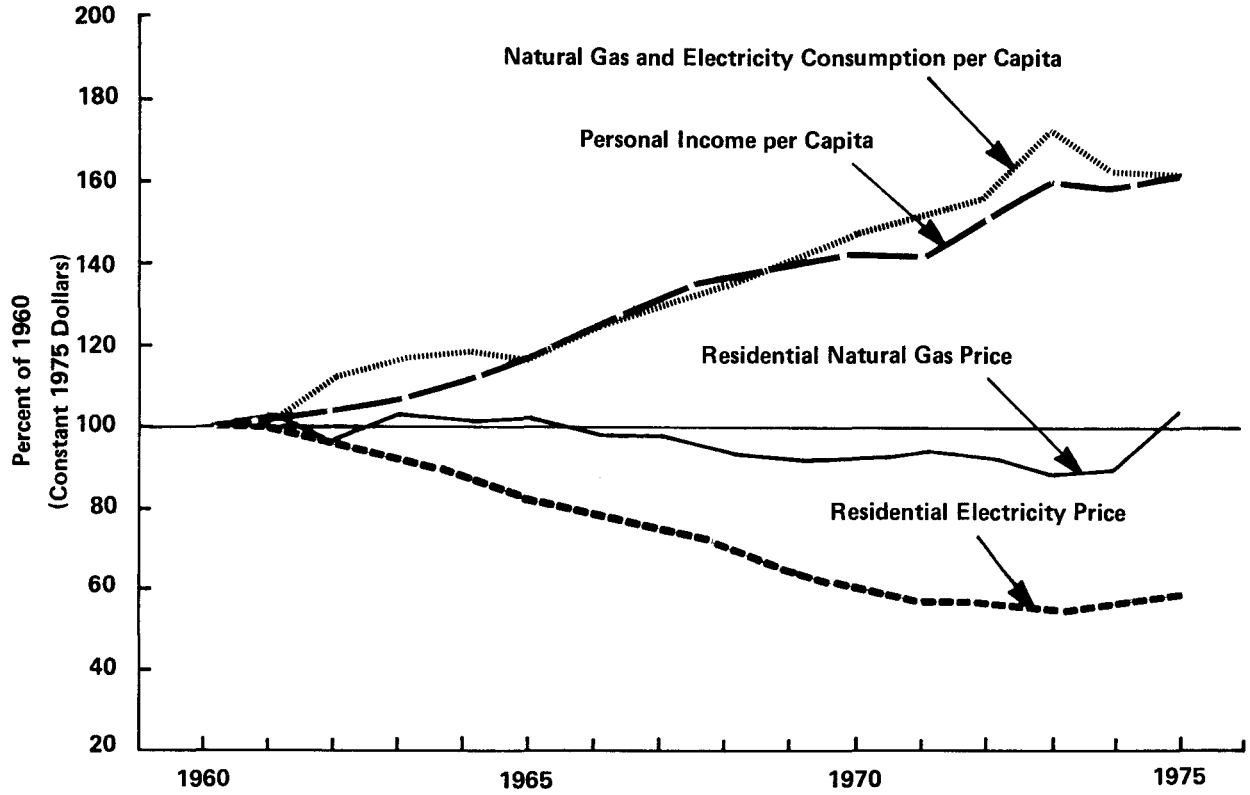


Energy prices paid by the final consumer in Texas increased more rapidly from 1970 to 1975 than the U.S. consumer price index (CPI) increased. The average natural gas price increased most rapidly, 126 percent in the five-year period. The Houston gasoline price increased 52 percent from 1970 to 1975, the average electricity price increased 50 percent, and the U.S. CPI increased 39 percent. Although gasoline and electricity prices in current year dollars have increased substantially, when compared to the overall price index of consumer goods (CPI), these commodities are still a good buy.

During the period 1970-1973, the U.S. CPI increased steadily while energy prices increased slightly. Rapid price increases for gasoline, electricity, and natural gas in 1974 and 1975 outpaced the CPI increase by 1975.

COMPARATIVE GRAPHS

COMPARISON OF PERSONAL INCOME AND ENERGY PRICES AND CONSUMPTION



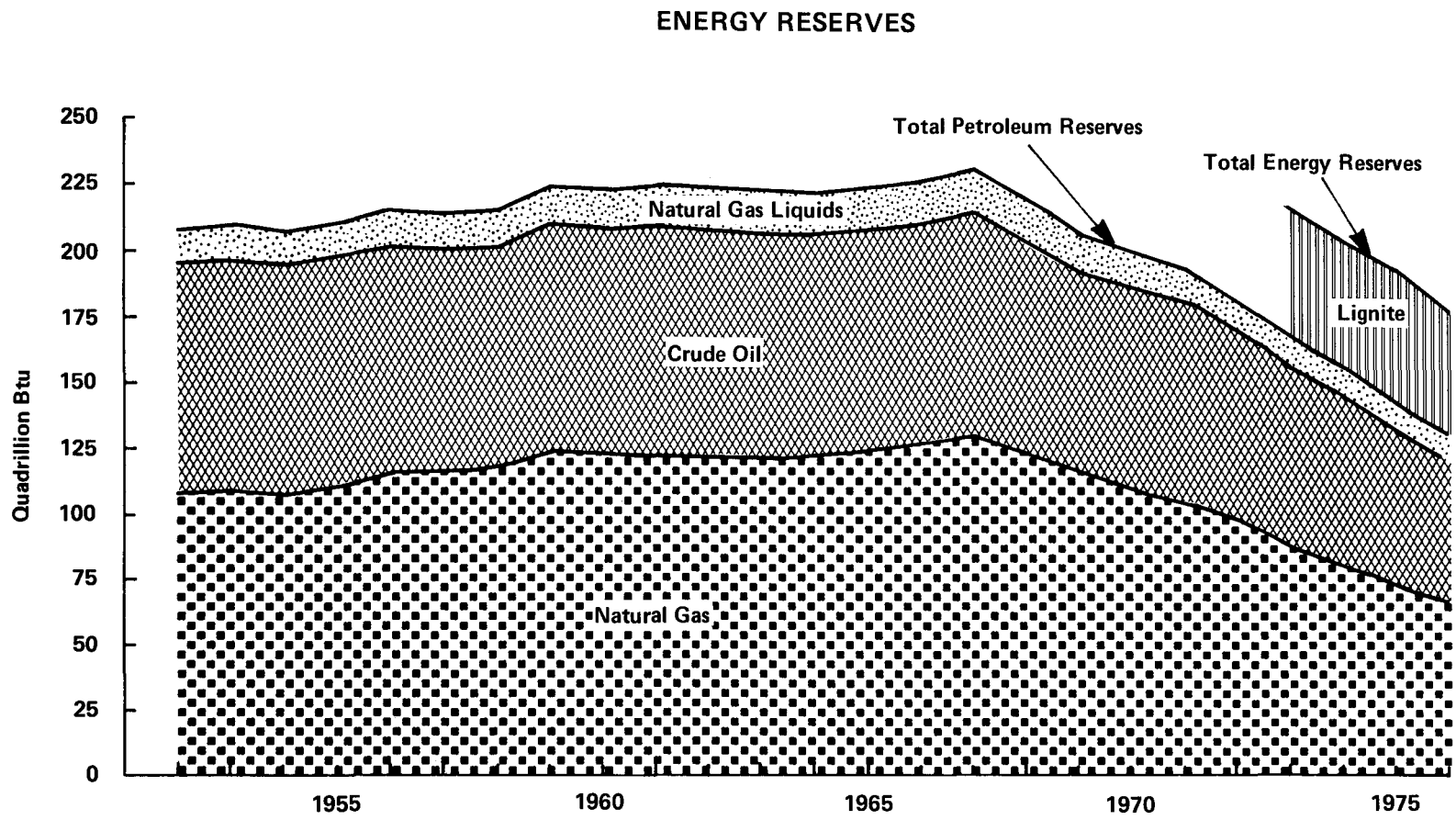
In the period 1960-1973, as residential electricity and natural gas prices (in constant dollars) decreased and per capita personal income increased, residential per capita consumption of natural gas and electricity increased. In 1974, prices increased and personal income declined as did consumption. From the index year of 1960 to 1975, consumption increased 61.5 percent, personal income, 60.1 percent, and natural gas price, 3.9 percent. The price of electricity decreased 42.1 percent.

From 1961 to 1973, the price of electricity declined each consecutive year and from 1965 to 1973 the natural gas price declined steadily. In 1974 and 1975 electricity and natural gas prices increased. Per capita consumption of electricity and natural gas increased steadily from 1965 to 1973 and decreased in 1974 and 1975. Per capita personal income increased steadily from 1960 to 1973, decreased slightly in 1974 and increased in 1975.

CHAPTER I.

RESERVES

TOTAL ENERGY RESERVES



Total proved petroleum reserves in Texas reached a peak in 1967 and have declined steadily ever since. Reaching the lowest level ever recorded, 1976 reserves of 130.3 quadrillion Btu amounted to approximately an 8½-year supply at current levels of production. Current total petroleum reserves (crude oil, natural gas liquids, and natural gas) are only slightly greater than the natural gas reserves in place in 1967.

High levels of production from reserves without significant new supply discoveries is the cause of the annual decline in reserves.

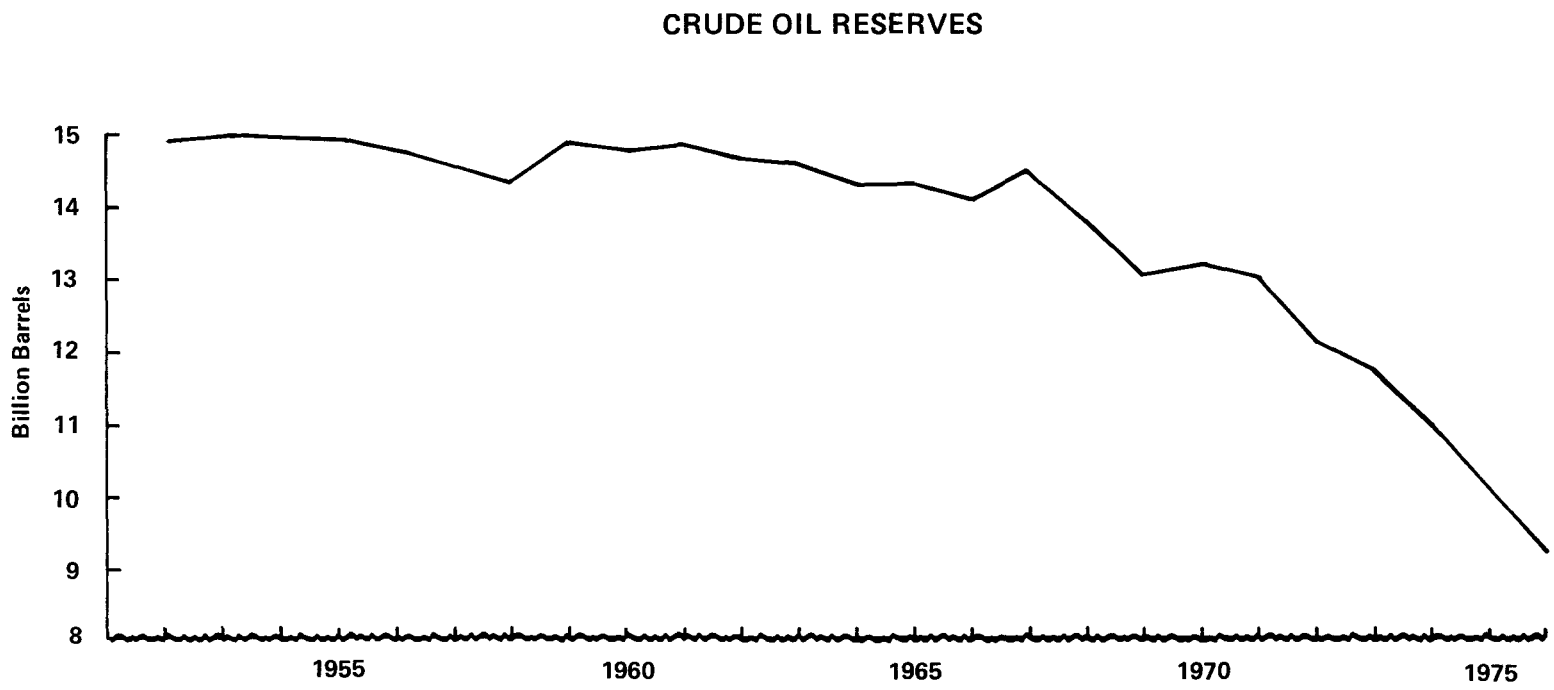
Lignite reserves at year-end 1973 were estimated to be 45.8 Quads, approximately one-fifth of the state's total fossil energy reserves. A consistent set of reserves data for lignite are not available for the historical period 1952-1976; therefore the graph portrays Texas lignite reserves for 1973-1976 only.

ESTIMATES OF PROVED PETROLEUM RESERVES, AS OF DECEMBER 31
(Quadrillion Btu)

Year	Petroleum Liquids			Natural Gas	Total Petroleum Reserves
	Crude Oil	Natural Gas	Total		
1952	86.5	12.5	99.0	108.5	207.6
1953	87.0	13.1	100.1	109.3	209.4
1954	86.9	11.7	98.6	107.9	206.5
1955	86.6	12.2	98.8	111.1	210.0
1956	85.7	13.6	99.3	115.7	215.0
1957	84.4	13.1	97.5	116.1	213.6
1958	83.1	13.6	96.7	118.1	214.8
1959	86.2	13.8	99.9	123.7	223.6
1960	85.6	14.4	100.0	122.6	222.7
1961	86.1	15.1	101.2	123.0	224.2
1962	85.0	15.4	100.3	122.7	223.0
1963	84.5	16.2	100.7	121.6	222.3
1964	82.9	15.9	98.8	122.7	221.5
1965	83.0	16.3	99.2	124.5	223.7
1966	81.6	16.5	98.1	127.6	225.7
1967	84.1	16.5	100.5	129.4	230.0
1968	80.1	16.1	96.2	122.8	219.0
1969	75.8	14.6	90.4	116.0	206.4
1970	76.5	13.4	89.9	109.8	199.6
1971	75.5	12.4	88.0	104.7	192.7
1972	70.4	11.6	82.0	98.1	180.1
1973	68.2	11.4	79.5	87.7	167.2
1974	63.8	11.2	75.0	81.1	156.1
1975	58.5	10.7	69.1	73.3	142.4
1976	53.5	10.1	63.6	66.7	130.4

Note: Data may not add to totals shown due to rounding.
SOURCE: American Gas Association, American Petroleum Institute, and Canadian Petroleum Association, *Reserves of Crude Oil, Natural Gas Liquids, and Natural Gas in the United States and Canada and United States Productive Capacity* (annual volumes).

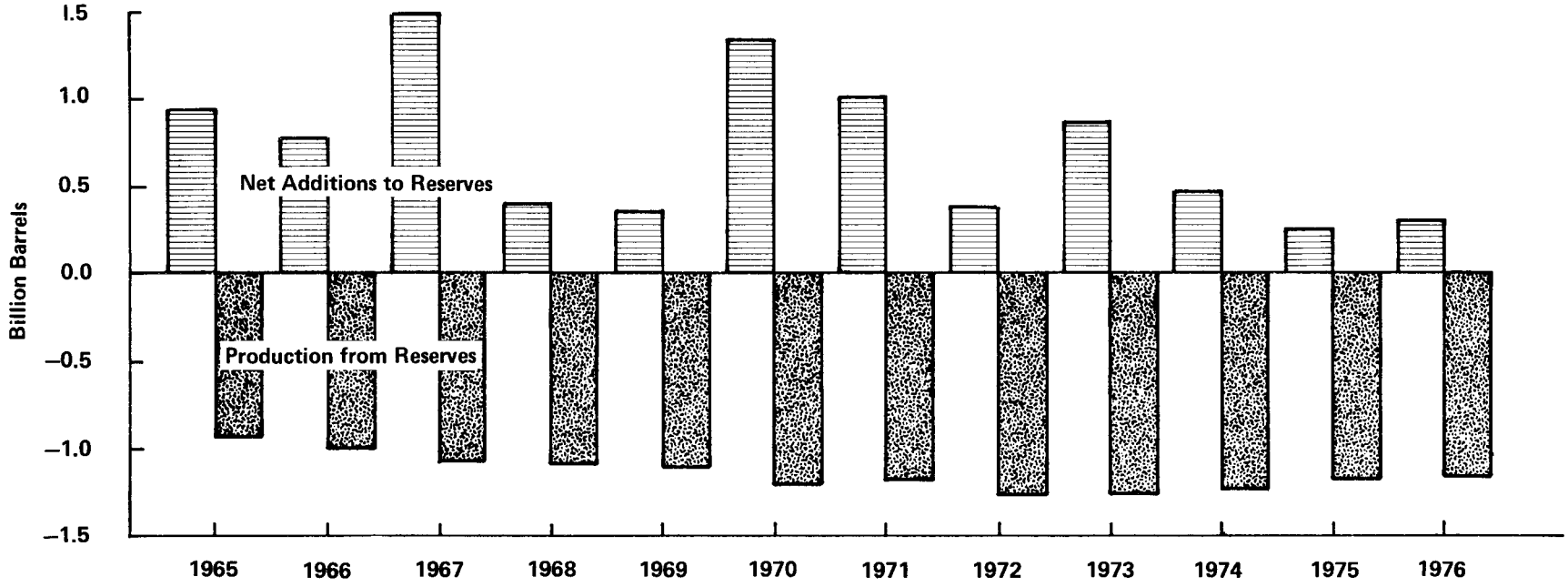
PETROLEUM LIQUIDS RESERVES



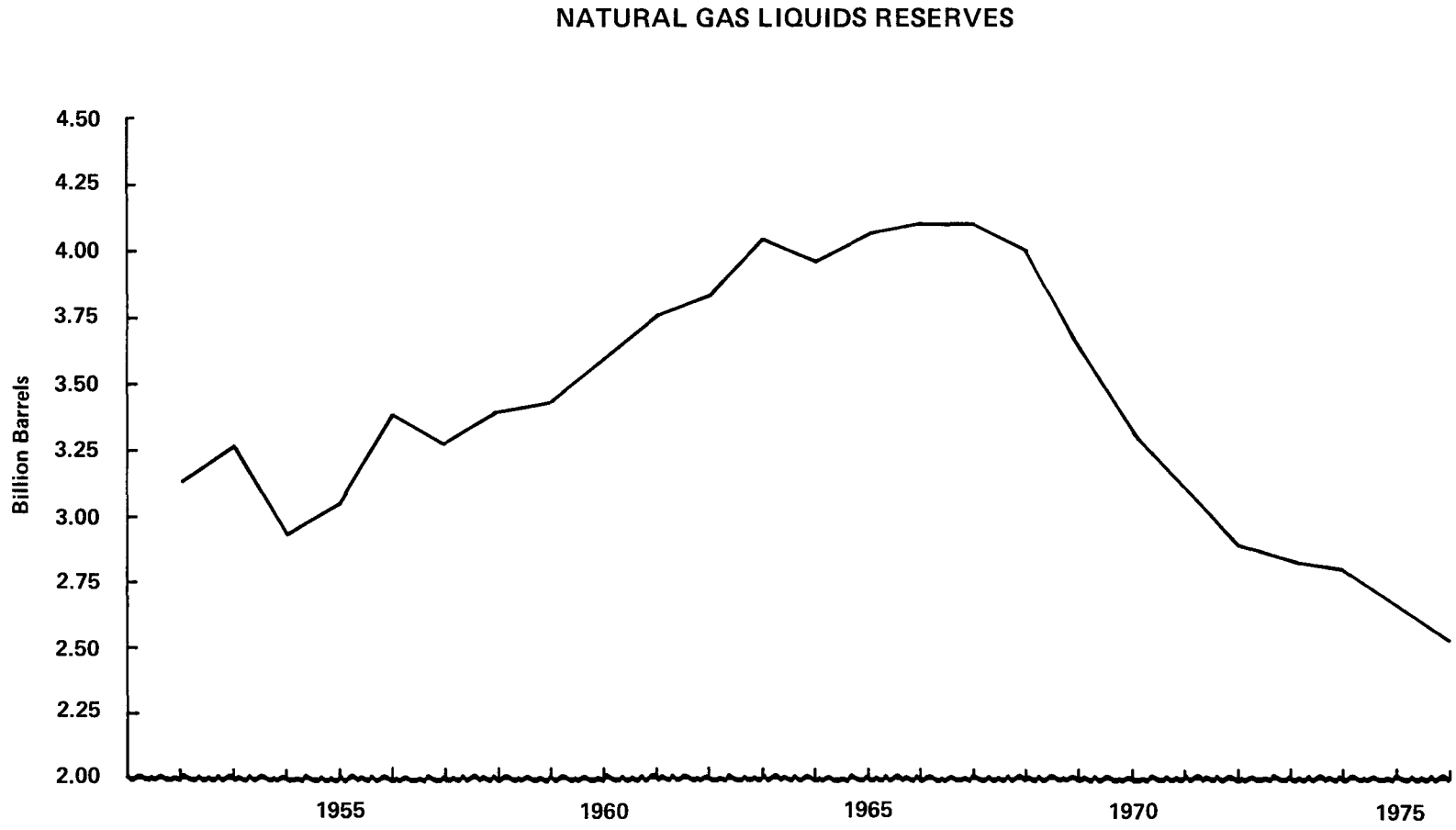
Crude oil reserves in 1976 dropped to a low of 9.2 billion barrels. Throughout the 1950s and 1960s, annual production from reserves was generally greater than annual additions to reserves, but significant new discoveries in occasional years kept the reserves at a relatively stable level. In the 1970s average production from reserves has been nearly double the average additions to reserves. Production from reserves in 1976 was quadruple the additions to reserves.

PETROLEUM LIQUIDS RESERVES

CHANGES IN CRUDE OIL RESERVES



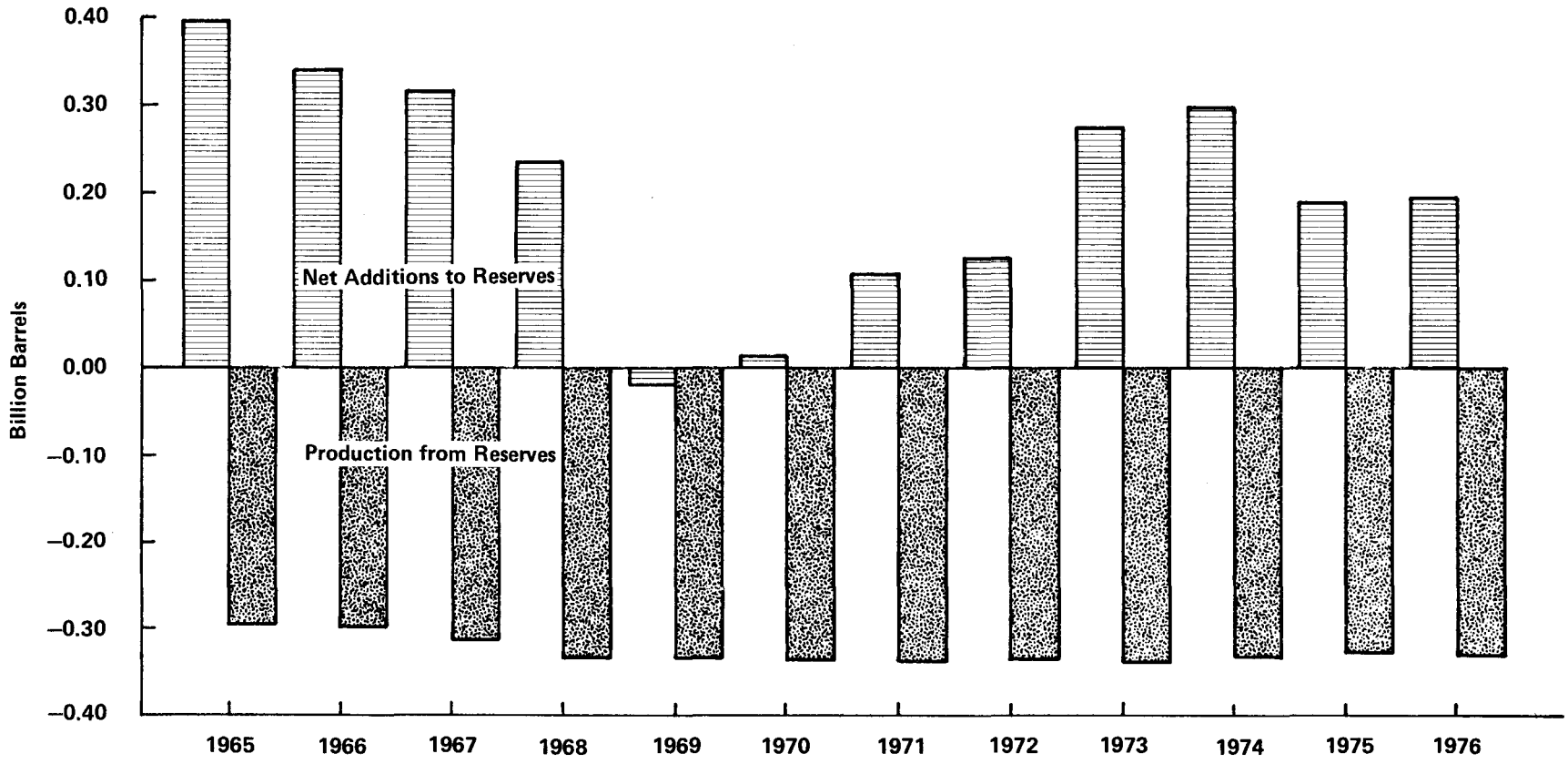
PETROLEUM LIQUIDS RESERVES



Proved reserves of natural gas liquids peaked at year-end 1967 and declined each year thereafter. Trends in natural gas liquids reserves parallel trends in natural gas reserves since natural gas liquids reserves are calculated by the use of a factor applied to the total volume of recoverable gas.

PETROLEUM LIQUIDS RESERVES

CHANGES IN NATURAL GAS LIQUIDS RESERVES



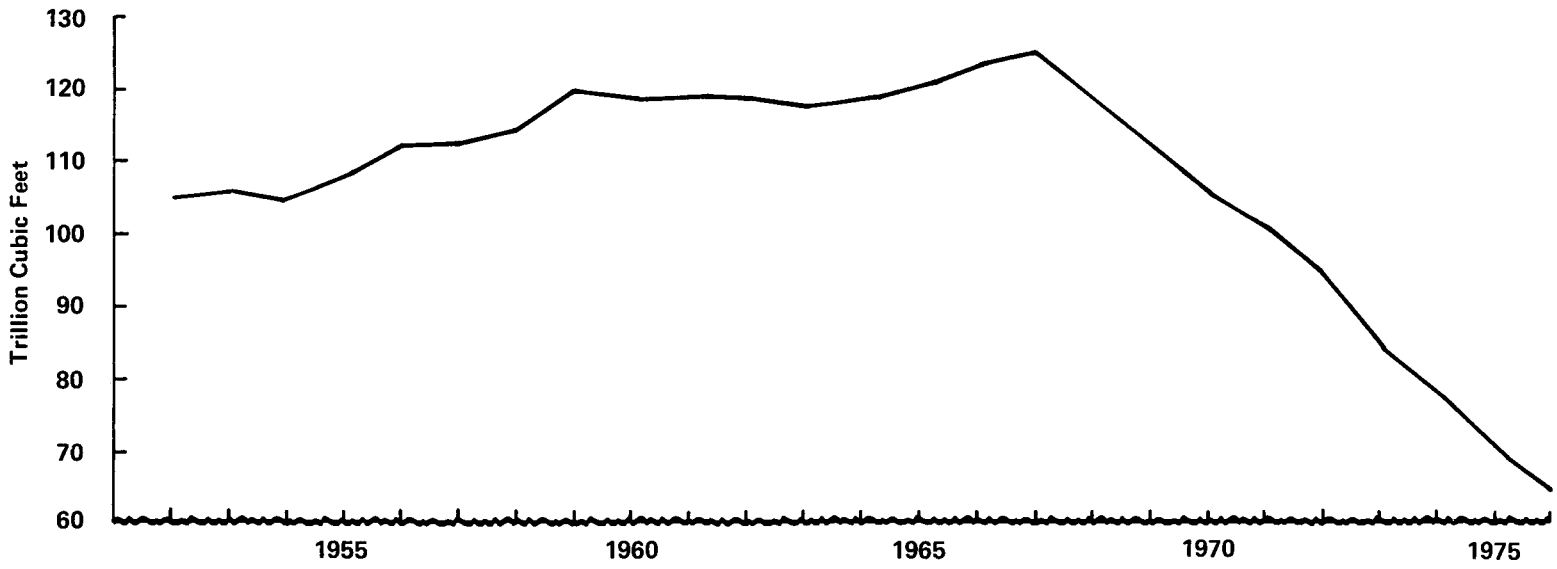
PETROLEUM LIQUIDS RESERVES

ESTIMATES OF PROVED PETROLEUM LIQUIDS RESERVES AND ANNUAL CHANGES IN RESERVES
(Million Barrels)

Year	Crude Oil Reserves			Natural Gas Liquids Reserves			Total Petroleum Liquids Reserves as of December 31
	Total of Discoveries, Revisions, & Extensions	Production During Year	Total as of December 31	Total of Discoveries, Revisions, & Extensions	Production During Year	Total as of December 31	
1952	611	1010	14916	--	--	3125	18041
1953	1084	1001	14999	--	--	3267	18266
1954	937	954	14982	--	--	2928	17910
1955	974	1022	14934	--	--	3045	17979
1956	928	1079	14783	--	--	3380	18163
1957	830	1058	14555	--	--	3272	17827
1958	677	910	14322	--	--	3392	17714
1959	1481	943	14860	--	--	3430	18290
1960	790	892	14758	--	--	3596	18354
1961	987	895	14850	--	--	3755	18605
1962	692	894	14648	--	--	3829	18477
1963	840	915	14573	--	--	4042	18615
1964	655	928	14300	--	--	3960	18260
1965	935	932	14303	396	296	4060	18363
1966	773	999	14077	341	299	4102	18179
1967	1490	1073	14494	315	314	4103	18597
1968	403	1087	13810	237	334	4005	17815
1969	359	1106	13063	-18	335	3652	16715
1970	1337	1205	13195	15	336	3330	16525
1971	1011	1182	13024	109	339	3101	16125
1972	383	1263	12144	127	336	2892	15036
1973	867	1254	11757	276	338	2830	14587
1974	473	1228	11002	299	332	2797	13799
1975	254	1176	10080	191	327	2661	12741
1976	305	1159	9226	197	330	2528	11754

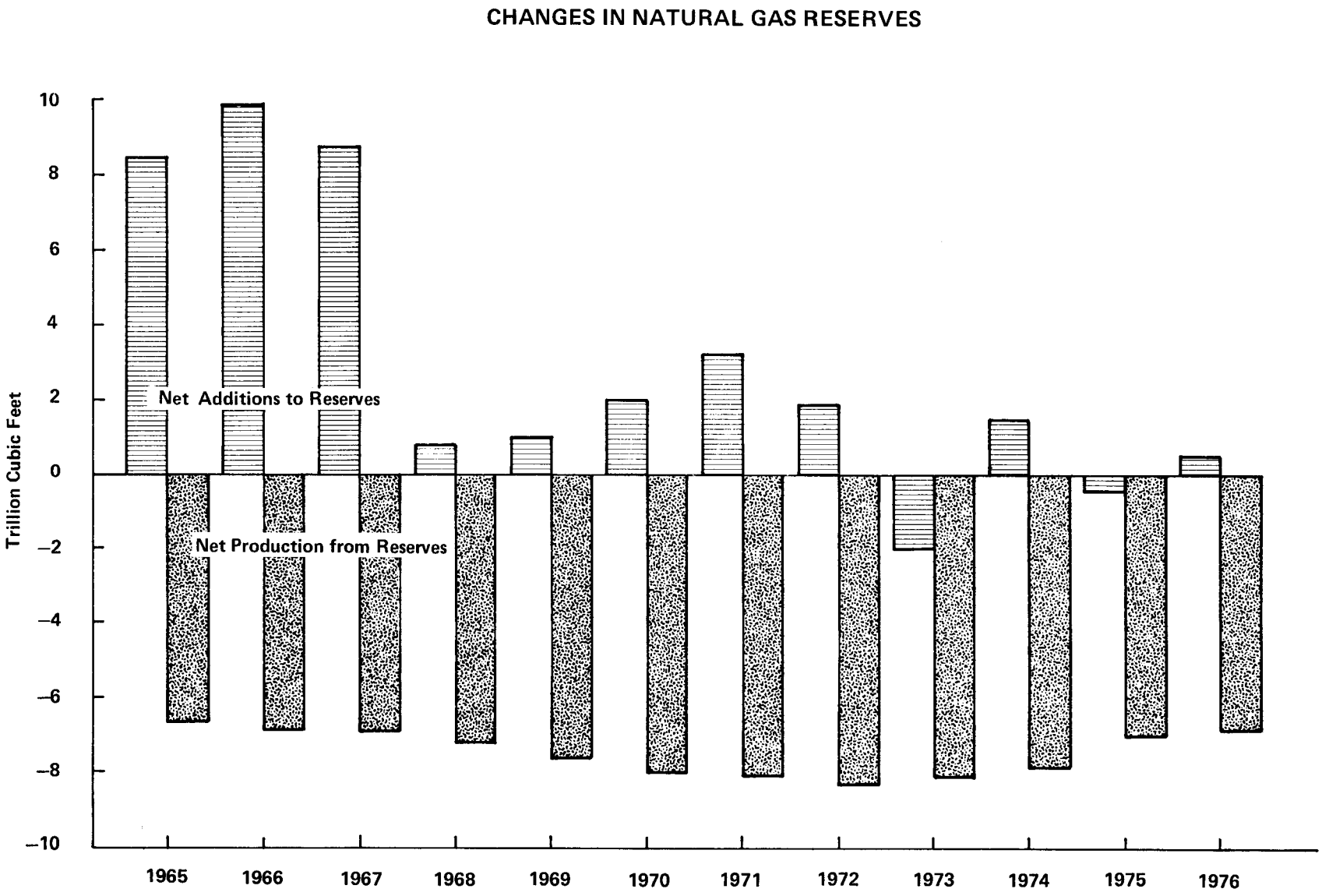
Note: Data may not add to totals shown due to rounding.
SOURCE: American Gas Association, American Petroleum Institute, and Canadian Petroleum Association, *Reserves of Crude Oil, Natural Gas Liquids, and Natural Gas in the United States and Canada and United States Productive Capacity* (annual volumes).

NATURAL GAS RESERVES



Since the 1967 peak in natural gas reserves, annual additions to reserves have been small compared to the level of production from reserves. In 1973 and 1975, downward revisions in earlier estimates outweighed new discoveries and resulted in negative net additions to reserves. 1976 reserves of 64.7 trillion cubic feet are at an all-time low.

NATURAL GAS RESERVES



ESTIMATES OF PROVED NATURAL GAS RESERVES AND ANNUAL CHANGES IN RESERVES
(Billion Cubic Feet)

Year	Total of Discoveries, Revisions, & Extensions*	Net Production During Year	Total Reserves, as of December 31
1952	--	--	105159
1953	--	--	105951
1954	--	--	104558
1955	--	--	107699
1956	--	--	112117
1957	--	--	112470
1958	--	--	114421
1959	--	--	119821
1960	--	--	118840
1961	--	--	119188
1962	--	--	118855
1963	--	--	117809
1964	--	--	118855
1965	8443	6681	120617
1966	9899	6907	123609
1967	8757	6951	125415
1968	814	7228	119001
1969	1020	7628	112393
1970	1981	8021	106353
1971	3222	8103	101472
1972	1881	8311	95042
1973	-1986	8119	84937
1974	1470	7866	78541
1975	-462	7042	71037
1976	510	6896	64651

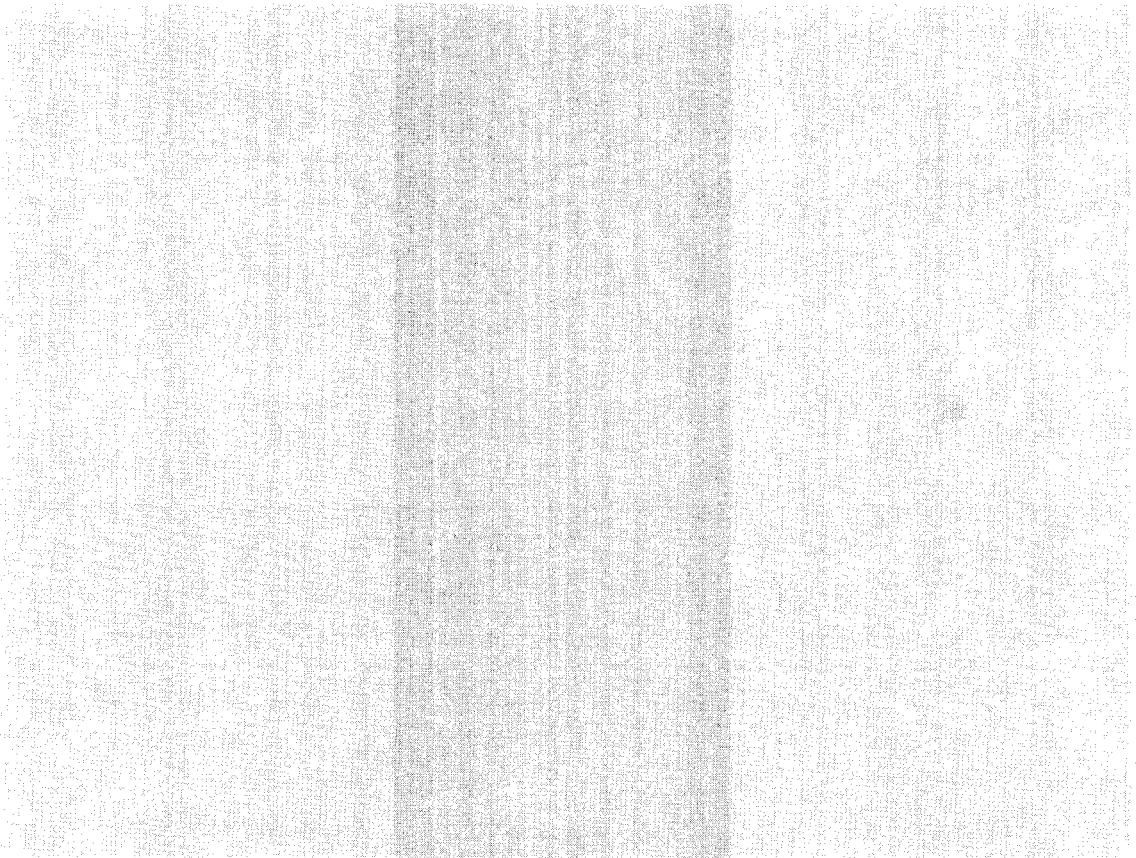
*Includes net change in underground storage.

Note: Data may not add to totals shown due to rounding.

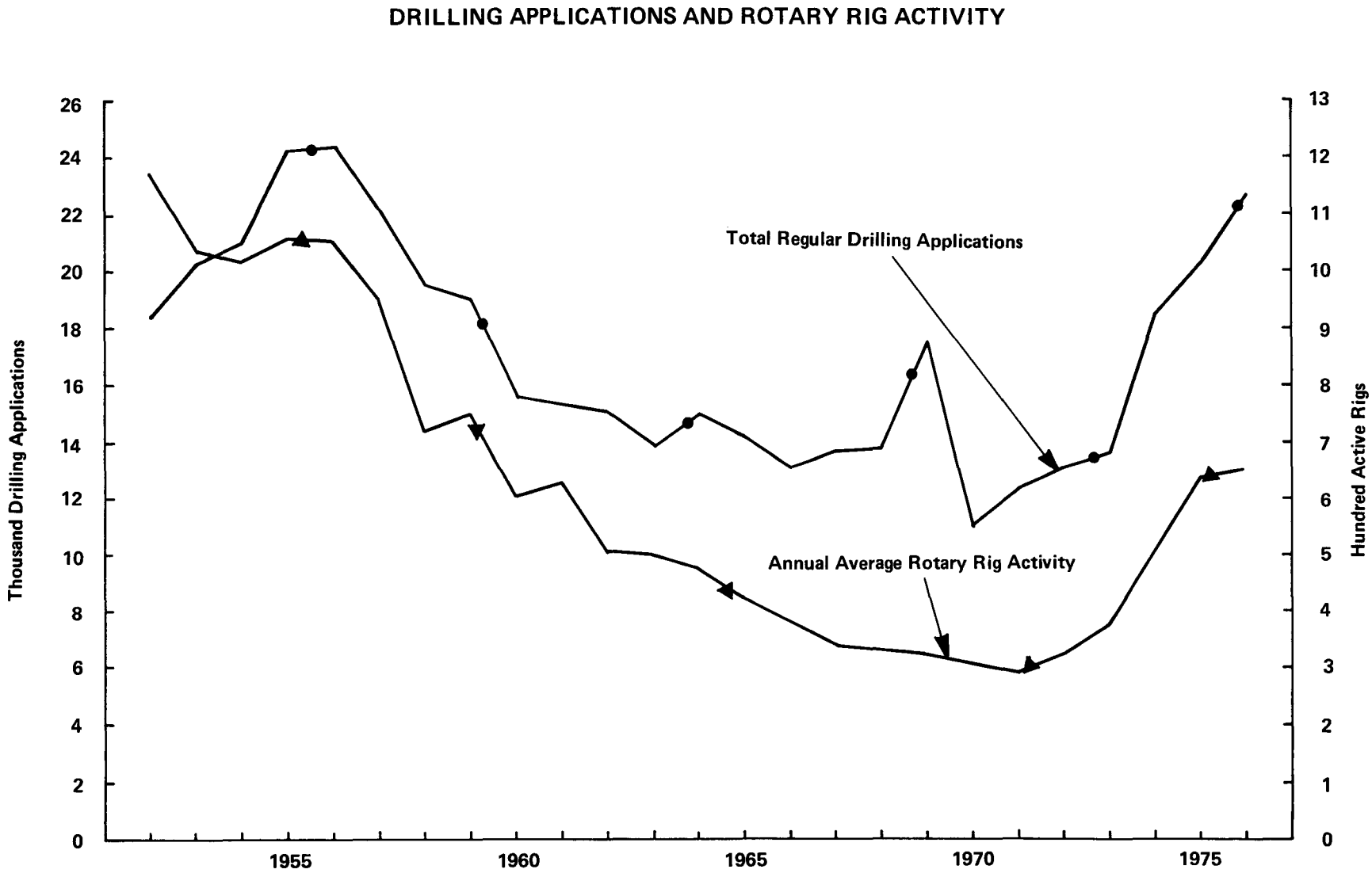
SOURCE: American Gas Association, American Petroleum Institute, and Canadian Petroleum Association, *Reserves of Crude Oil, Natural Gas Liquids, and Natural Gas in the United States and Canada and United States Productive Capacity* (annual volumes).

CHAPTER L

EXPLORATION AND DRILLING FOR OIL AND GAS



DRILLING ACTIVITY



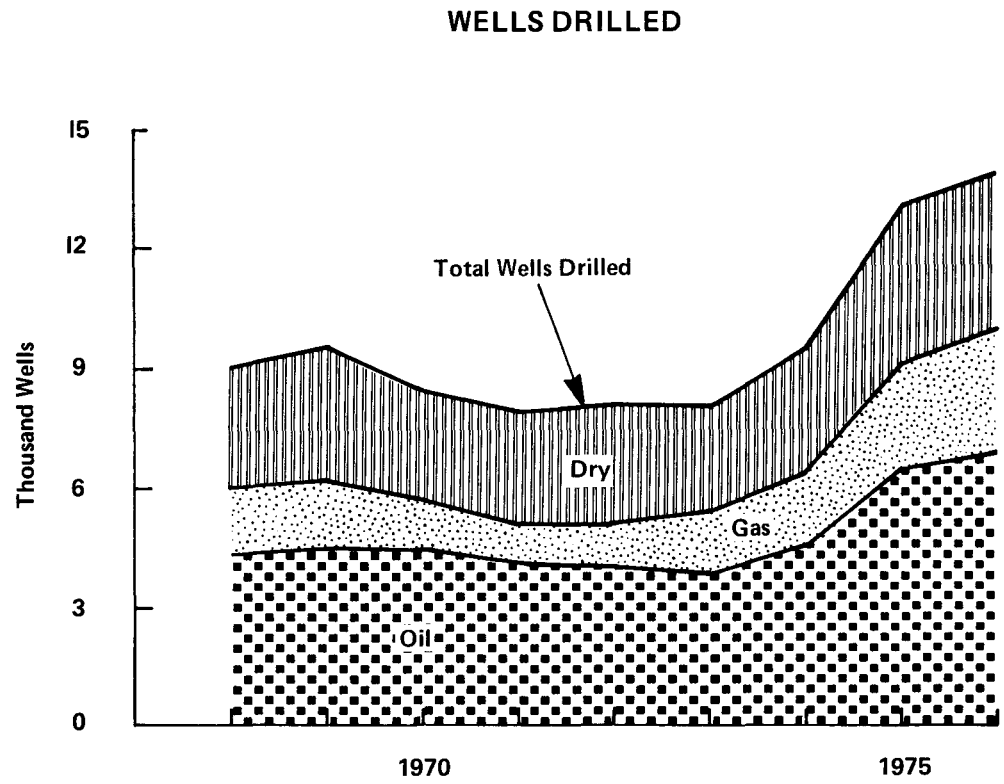
Drilling activity, measured by the average number of rotary rigs in operation at any one time, follows the application for a permit to drill. The average number of drilling rigs in operation in Texas declined at an annual rate of 7.1 percent from 1952 to 1971, but the trend reversed in 1972. From 1971 to 1976 rig activity increased at an annual rate of 17.5 percent.

DRILLING APPLICATIONS AND ROTARY RIG ACTIVITY

Year	Total Regular Drilling Applications	Average No. of Rotary Rigs in Operation
1952	18366	1173
1953	20285	1039
1954	20962	1018
1955	24225	1059
1956	24436	1054
1957	22163	951
1958	19553	719
1959	19042	750
1960	15601	604
1961	15369	628
1962	15070	507
1963	13839	500
1964	14989	477
1965	14227	425
1966	13096	387
1967	13697	340
1968	13844	329
1969	17494	322
1970	11034	302
1971	12324	291
1972	13105	322
1973	13586	376
1974	18438	508
1975	20293	637
1976	22693	653

SOURCES: Drilling Applications: Texas Railroad Commission, *Annual Report of the Oil and Gas Division* (annual volumes). Rotary Rig Activity: American Petroleum Institute, *Basic Petroleum Data Book,* 1975 (Hughes Tool Co. data).

TOTAL WELLS DRILLED



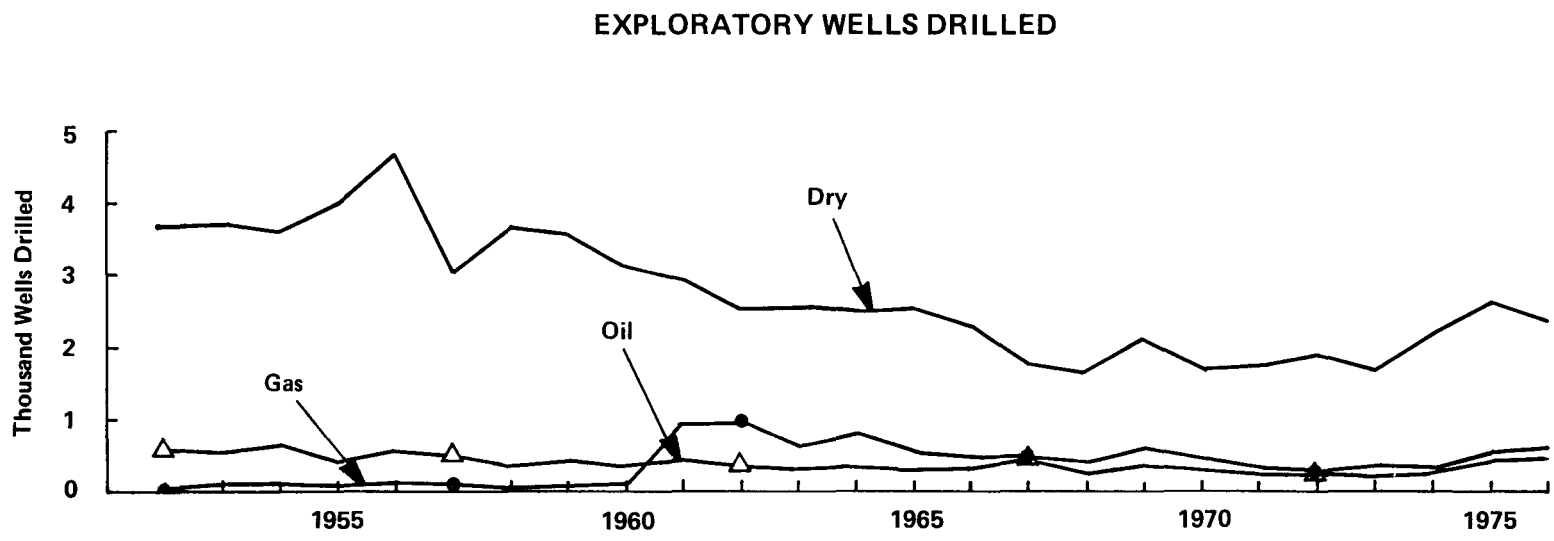
The number of wells drilled was greatest in the 1950s, reaching a peak of 21,591 in 1956. After that year, the number of wells drilled declined steadily, reaching a low of 7,900 wells in 1971. Drilling activity began to increase rapidly in 1974. From 1973 to 1976, the total number of wells drilled increased at an annual rate of 20.0 percent. Gas well drilling has increased the most rapidly since 1973.

TOTAL WELLS DRILLED

Year	Total Oil Wells	Total Gas Wells	Total Dry Holes	Total Wells
1952	--	--	6404	16845
1953	--	--	6813	17041
1954	--	--	6973	18865
1955	--	--	7252	19981
1956	--	--	8013	21591
1957	--	--	7275	21352
1958	--	--	6172	18065
1959	--	--	6150	18526
1960	--	--	5665	15581
1961	--	--	5501	14597
1962	--	--	5039	14736
1963	--	--	5149	13468
1964	--	--	5128	13152
1965	--	--	5148	12741
1966	--	--	4623	11109
1967	--	--	3203	9761
1968	4364	1671	2985	9020
1969	4488	1722	3322	9532
1970	4469	1309	2655	8433
1971	4150	1012	2735	7897
1972	4045	1102	2919	8066
1973	3842	1581	2608	8031
1974	4578	1814	3115	9507
1975	6493	2584	3993	13070
1976	6917	3045	3922	13884

SOURCE: Texas Railroad Commission, *Annual Report of the Oil and Gas Division* (annual volumes) and American Petroleum Institute, *Petroleum Facts and Figures,* 1971 (for 1952-1967 total wells data).

EXPLORATORY WELLS DRILLED



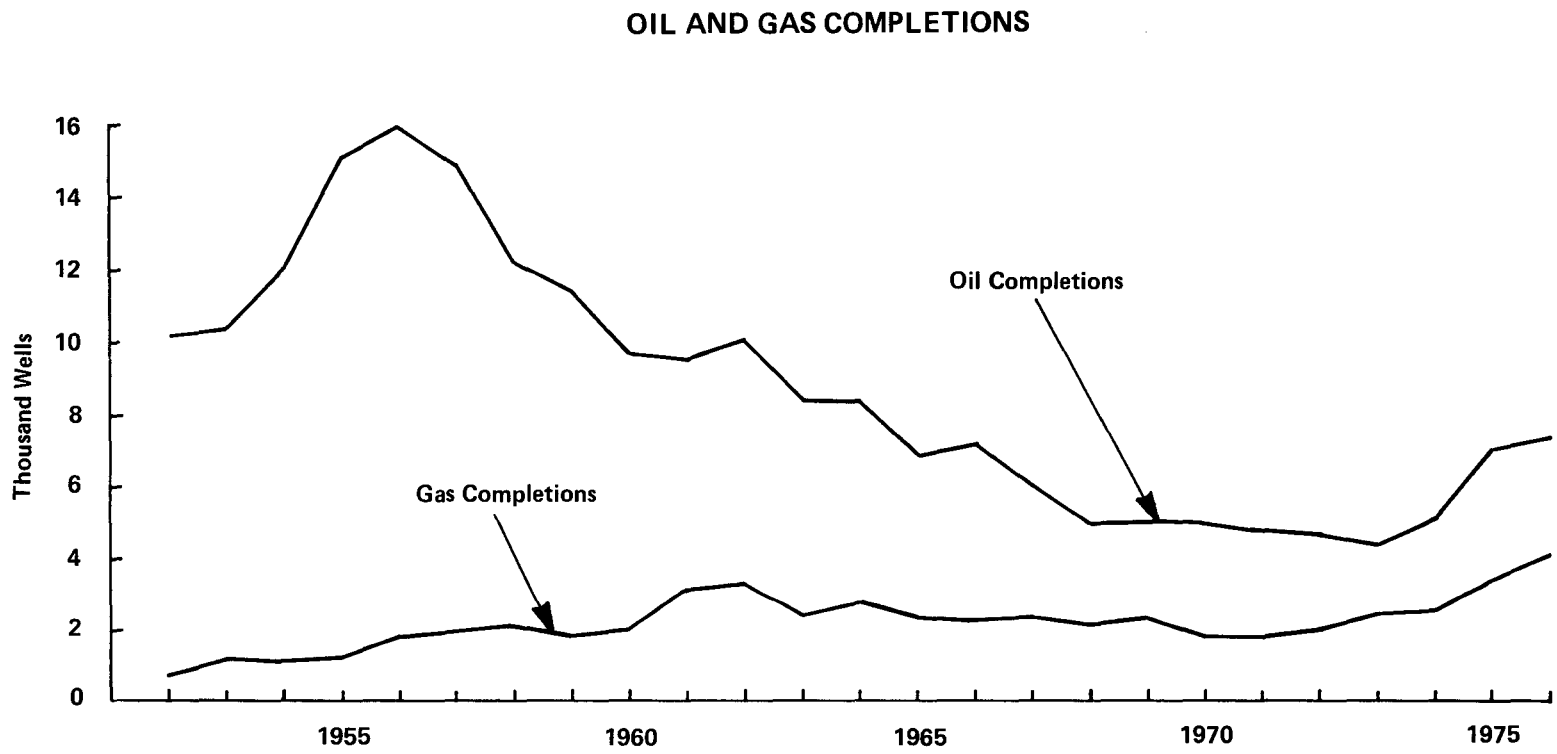
Total exploratory wells drilled peaked at 5,379 in 1956, then declined at an annual rate of 4.9 percent through 1973 when a low of 2,281 was reached. Since 1973 wildcat drilling has increased 15 percent annually.

EXPLORATORY WELLS DRILLED

Year	Oil Wells	Gas Wells	Dry Holes	Total Exploratory Wells
1952	587	43	3691	4321
1953	556	97	3721	4374
1954	664	112	3603	4379
1955	415	89	3982	4486
1956	564	134	4681	5379
1957	506	109	3050	3665
1958	373	64	3669	4106
1959	439	73	3589	4101
1960	358	93	3130	3581
1961	438	942	2940	4320
1962	363	975	2543	3881
1963	325	651	2563	3539
1964	349	822	2516	3687
1965	313	569	2545	3427
1966	329	494	2313	3136
1967	443	496	1780	2719
1968	257	420	1653	2330
1969	373	615	2108	3096
1970	314	500	1717	2531
1971	249	352	1769	2370
1972	227	285	1917	2429
1973	226	359	1696	2281
1974	268	339	2203	2810
1975	412	548	2647	3607
1976	471	625	2391	3487

SOURCE: Texas Railroad Commission, *Annual Report of the Oil and Gas Division* (annual volumes).

OIL AND GAS COMPLETIONS



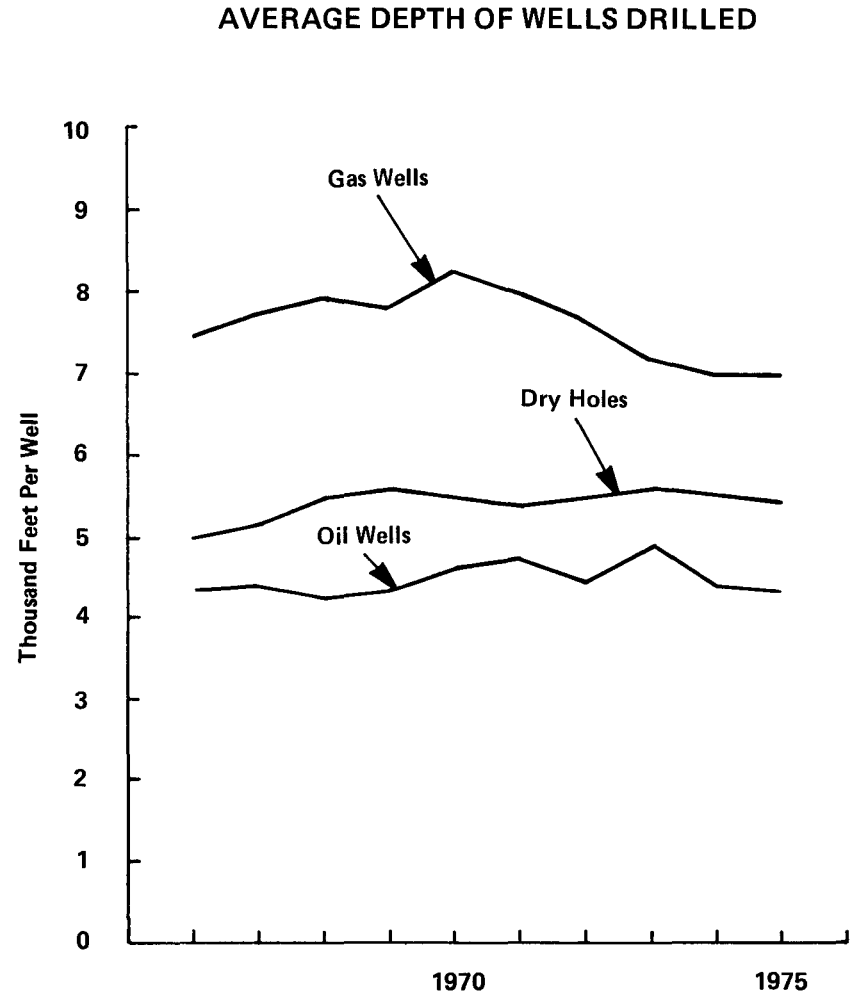
While total well completions increased at an annual rate of 12.9 percent from 1952 to 1956, the number of well completions declined at a rate of 6.1 percent per year from 1956 to 1971. The trend then reversed, and total well completions increased at an annual rate of 11.5 percent from 1971 to 1976.

OIL AND GAS COMPLETIONS

Year	Oil Completions	Gas Completions	Service Completions	Total Completions
1952	10188	738	--	10926
1953	10391	1179	--	11570
1954	12031	1119	--	13150
1955	15075	1213	--	16288
1956	15986	1765	--	17751
1957	14934	1925	--	16859
1958	12268	2097	--	14365
1959	11411	1825	--	13236
1960	9666	2011	--	11677
1961	9507	3155	--	12662
1962	10051	3335	--	13386
1963	8410	2399	--	10809
1964	8389	2756	--	11145
1965	6902	2383	--	9285
1966	7207	2294	--	9501
1967	6045	2363	366	8774
1968	4966	2172	403	7541
1969	5043	2310	439	7792
1970	4987	1796	409	7192
1971	4784	1780	363	6927
1972	4632	2006	426	7064
1973	4345	2395	629	7369
1974	5073	2519	306	7898
1975	7004	3396	419	10819
1976	7348	4108	478	11934

SOURCE: Texas Railroad Commission, *Annual Report of the Oil and Gas Division* (annual volumes).

AVERAGE DEPTH OF WELLS DRILLED



The average depth of the total number of wells drilled in Texas increased by almost 700 feet from 1966 to 1973. While the deepest gas wells were drilled in 1970, the deepest oil wells and dry holes were drilled in 1973. The average depth of all wells drilled, however, declined in 1974 and 1975.

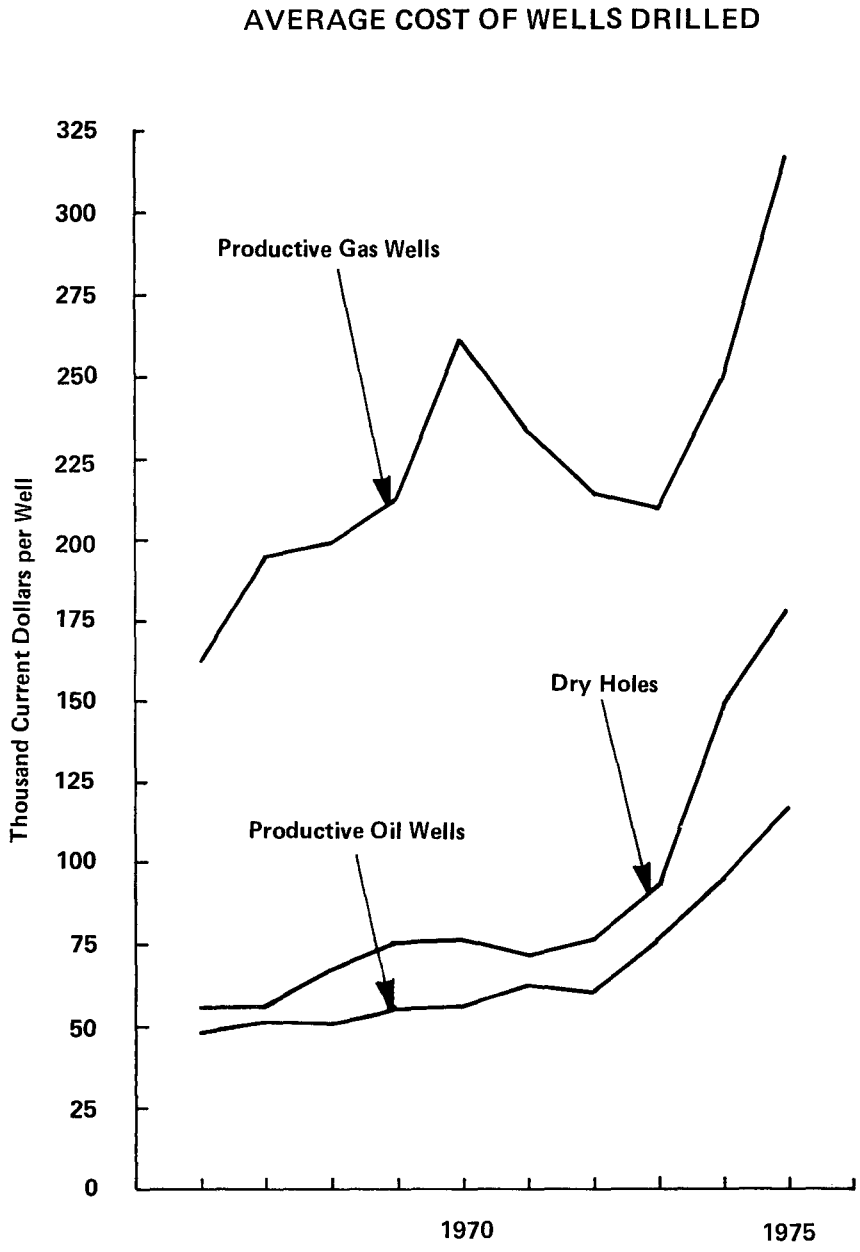
AVERAGE DEPTH OF WELLS DRILLED

AVERAGE DEPTH OF WELLS DRILLED
(Feet)

Year	Average Depth Per Well			
	Oil Wells	Gas Wells	Dry Holes	Total Wells
1966	4342	7450	4985	4919
1967	4400	7730	5149	5053
1968	4246	7922	5490	5116
1969	4335	7798	5596	5205
1970	4619	8259	5485	5319
1971	4737	7988	5388	5340
1972	4442	7649	5505	5259
1973	4868	7177	5603	5577
1974	4400	6981	5518	5278
1975	4331	6986	5427	5159

SOURCE: *Joint Association Survey of the U.S. Oil and Gas Producing Industry, Section 1: Drilling Costs,* (annual volumes), sponsored by American Petroleum Institute, Independent Petroleum Association of America, Mid-Continent Oil and Gas Association.

AVERAGE COST OF WELLS DRILLED



The average cost per well of all wells drilled increased at an annual rate of 11.8 percent from 1966 to 1975. From 1972 to 1975, the average cost increased at an annual rate of 25.6 percent. The depth of wells affects the average cost per well, but even though the average well depth was shallower in 1974 and 1975 than in 1973, the average cost per well increased rapidly.

AVERAGE COST OF WELLS DRILLED
(Current Dollars)

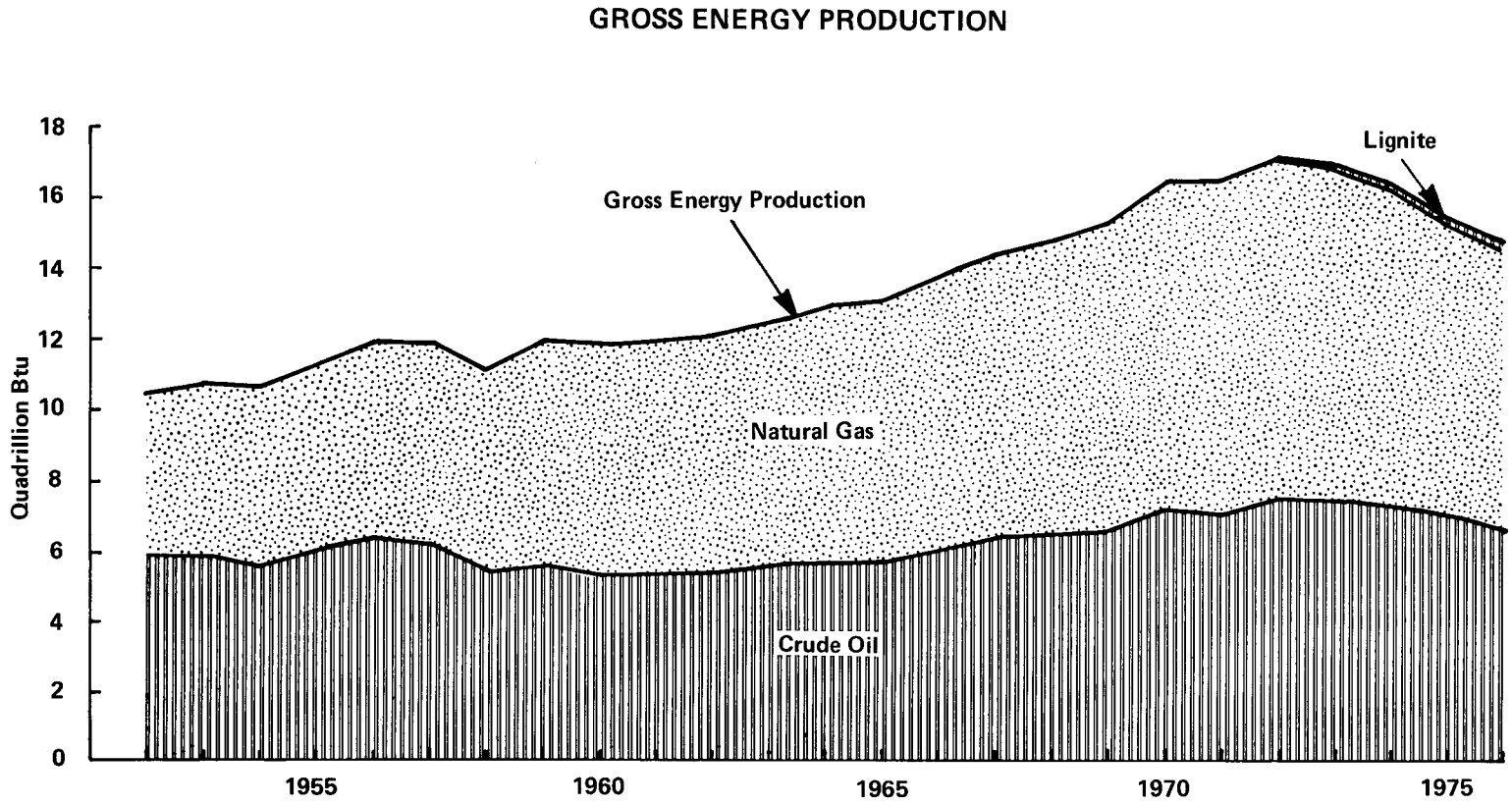
Year	Average Cost Per Well			
	Oil Wells	Gas Wells	Dry Holes	Total Wells
1966	48165	162162	55967	63342
1967	51497	194990	56311	68863
1968	51134	199326	67091	72686
1969	55413	212415	75691	79830
1970	56458	261294	76283	85113
1971	62689	233675	71882	85378
1972	60555	214559	76577	87280
1973	76710	209692	93077	108272
1974	95009	248804	148708	142793
1975	117298	317071	177951	172761

SOURCE: *Joint Association Survey of the U.S. Oil and Gas Producing Industry, Section 1: Drilling Costs,*(annual volumes), sponsored by American Petroleum Institute, Independent Petroleum Association of America, Mid-Continent Oil and Gas Association.

CHAPTER III

ENERGY PRODUCTION

GROSS ENERGY PRODUCTION



Peaking in 1972 at 17.1 quadrillion Btu, gross energy production increased at an annual rate of 2.5 percent from 1952 to 1972. The trend of increasing production reversed in 1973 and production declined at an annual rate of 3.6 percent from 1972 to 1976.

Until 1974, oil and gas contributed over 99 percent of the state's total energy production. Lignite provided 1.0 percent of the total in 1975 and 1.4 percent in 1976.

Natural gas, including natural gas liquids, has contributed a greater portion of the total energy production on a Btu basis than crude oil since 1958. Natural gas production in 1976 totaled 7.9 quadrillion Btu, 52.4 percent of the total. Crude oil production, at 6.7 quadrillion Btu, contributed 45.2 percent of the state's total energy production in 1976.

GROSS ENERGY PRODUCTION
(Trillion Btu)

Year	Crude Oil	Natural Gas*	Lignite	Total
1952	5928.41	4562.59	.00	10490.99
1953	5911.15	4821.47	.00	10732.62
1954	5650.79	5006.36	18.20	10675.35
1955	6109.12	5203.88	21.00	11334.00
1956	6425.29	5499.88	26.60	11951.76
1957	6228.43	5671.84	29.40	11929.66
1958	5452.96	5695.88	25.20	11174.04
1959	5637.47	6290.89	30.80	11959.16
1960	5379.38	6481.97	29.40	11890.75
1961	5447.31	6559.97	29.40	12036.67
1962	5471.30	6688.23	29.40	12188.93
1963	5671.44	6825.54	30.80	12527.78
1964	5739.24	7178.21	32.20	12949.66
1965	5804.34	7300.21	33.60	13138.15
1966	6134.69	7649.17	32.20	13816.06
1967	6495.78	7907.79	30.80	14434.37
1968	6573.60	8244.96	32.20	14850.76
1969	6680.29	8638.52	30.80	15349.61
1970	7248.24	9193.49	29.40	16471.13
1971	7092.97	9405.78	28.00	16526.75
1972	7549.77	9523.62	56.63	17130.03
1973	7509.09	9365.23	97.22	16971.54
1974	7320.33	8987.88	107.58	16415.78
1975	7087.19	8234.34	154.03	15475.56
1976	6692.86 **	7911.62 **	199.01 **	14803.49 **

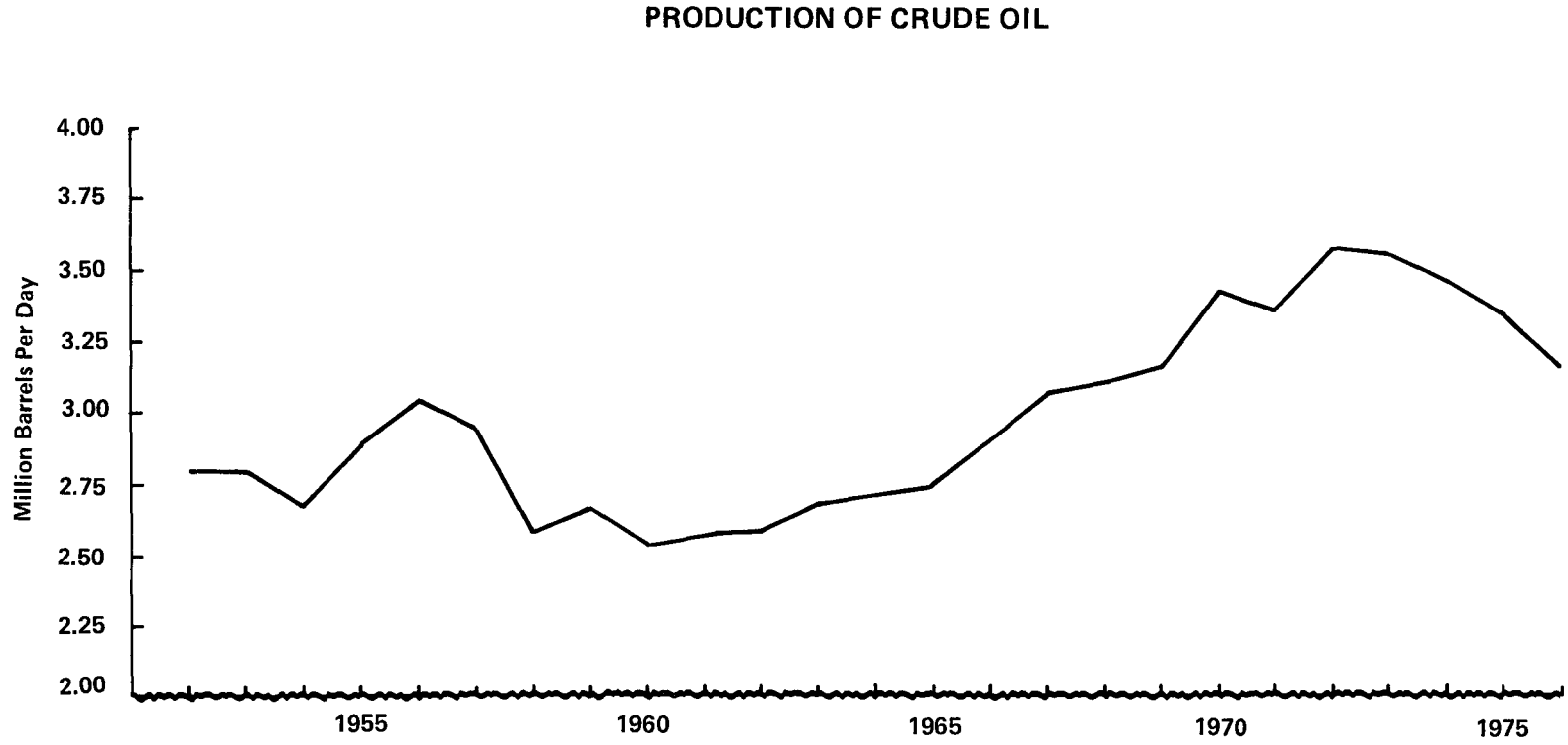
*Includes natural gas liquids.

**Preliminary data.

Note: Data may not add to totals shown due to rounding.

SOURCE: Computed by Governor's Energy Advisory Council.

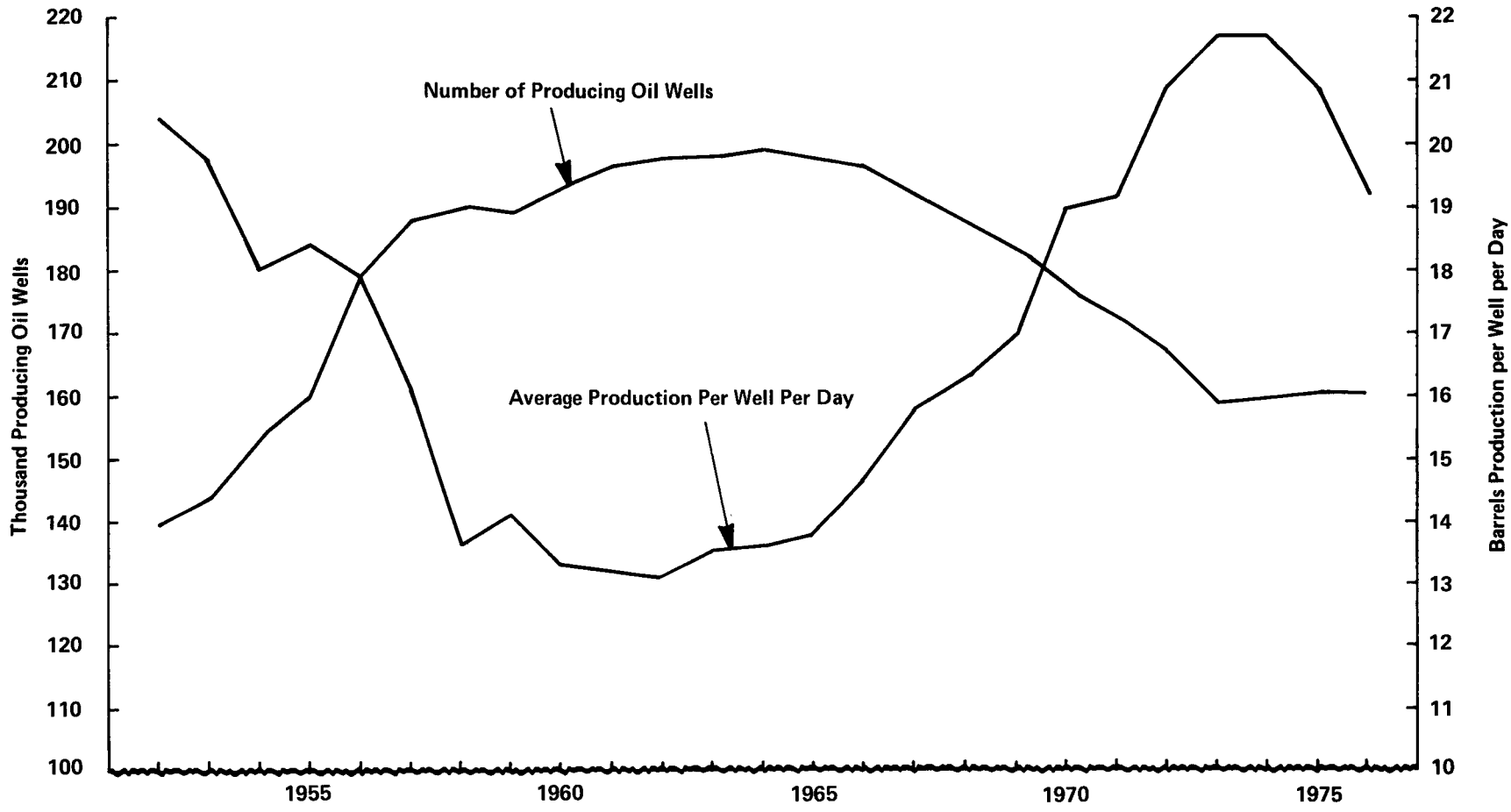
CRUDE OIL PRODUCTION



Crude oil production peaked in 1972 at 3.57 million barrels per day after an average increase of 2.9 percent per year from 1960 to 1972. Production has declined at a rate of 3.0 percent annually since 1972. Production of crude oil, which includes lease condensate and offshore production, averaged 3.16 million barrels per day in 1976.

CRUDE OIL PRODUCTION

PRODUCING WELLS AND PRODUCTION OF WELLS



From 1956 to 1970, an average of 191,000 wells produced 15 barrels of oil daily. In the 1970s, daily production per well increased to 20.6 barrels, although the average number of wells dropped to 166,000.

CRUDE OIL PRODUCTION

TOTAL PRODUCTION OF CRUDE OIL, AVERAGE PRODUCTION PER WELL PER DAY, AND NUMBER OF PRODUCING WELLS

Year	Total Production of Crude Oil* (Thousand Barrels)	Approximate Number Of Oil Wells Producing December 31	Average Production Per Well Per Day (Barrels)
1952	1022139	139530	20.4
1953	1019164	143990	19.7
1954	974275	153190	18.0
1955	1053297	159880	18.4
1956	1107808	179095	17.9
1957	1073867	187935	16.1
1958	940166	189960	13.6
1959	971978	188934	14.1
1960	927479	192934	13.3
1961	939191	196396	13.2
1962	943328	197659	13.1
1963	977835	198070	13.5
1964	989525	199119	13.6
1965	1000749	197924	13.8
1966	1057706	196308	14.7
1967	1119962	192001	15.8
1968	1133380	187922	16.3
1969	1151775	183141	17.0
1970	1249697	177221	19.0
1971	1222926	172696	19.2
1972	1301685	167233	20.9
1973	1294671	159090	21.7
1974	1262126	159702	21.7
1975	1221929	160603	20.9
1976	1153941 **	160546 **	19.2 **

*Includes lease condensate.

**Preliminary data.

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

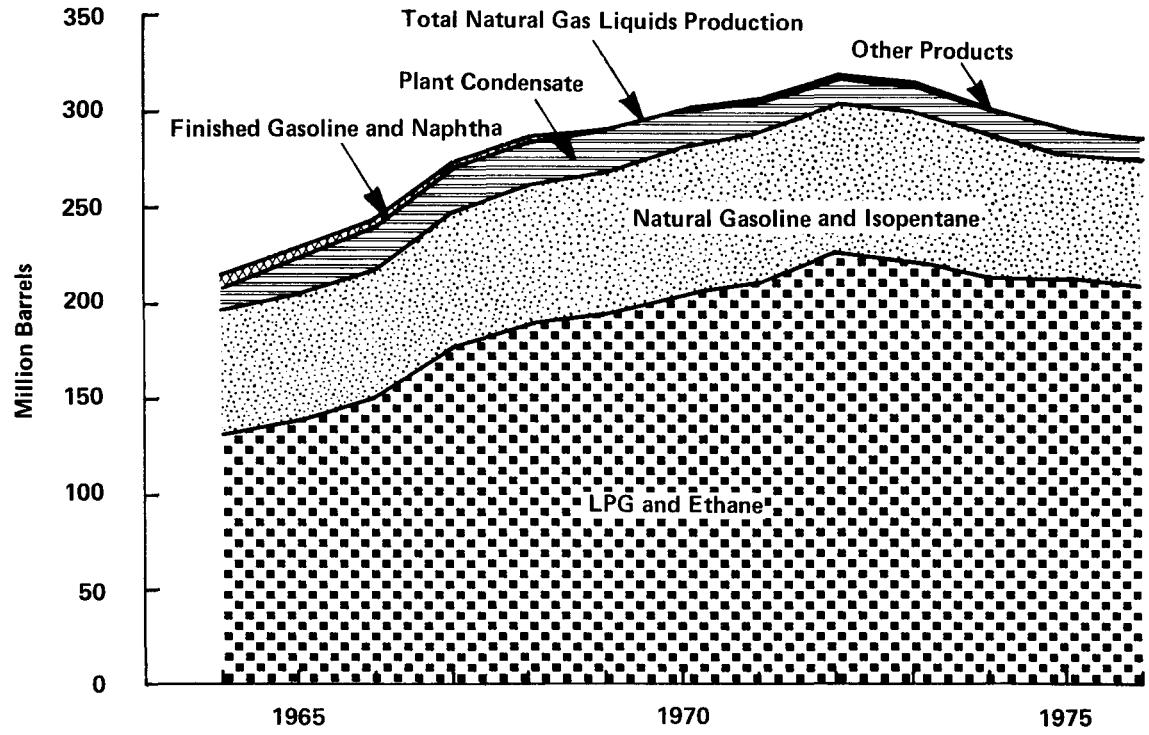
OFFSHORE PRODUCTION OF CRUDE OIL
(Thousand Barrels)

Year	Federal Waters	State Waters	Total
1973	738	681	1419
1974	504	577	1081
1975	426	353	779
1976	814	709	1523

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS LIQUIDS PRODUCTION

PRODUCTION OF NATURAL GAS LIQUIDS



During the period 1952-1972, total production of natural gas liquids increased at an annual rate of 5.0 percent. From 1972 to 1975 production declined 3.0 percent annually. Liquified petroleum gases and ethane continued to be the major products of natural gas liquids processed at natural gas plants.

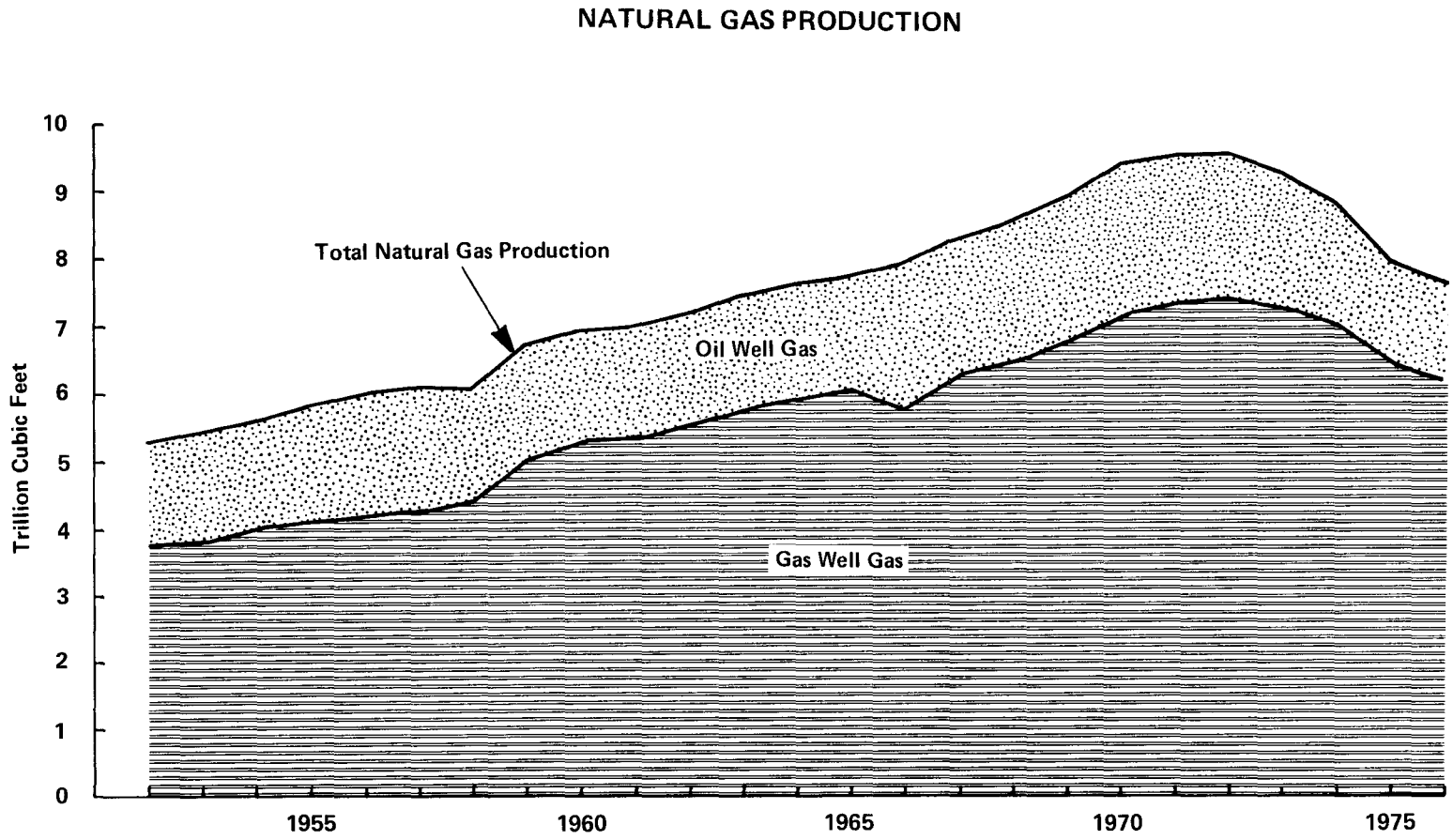
NATURAL GAS LIQUIDS PRODUCTION

PRODUCTION OF NATURAL GAS LIQUIDS AND ETHANE AT NATURAL GAS PROCESSING PLANTS
(Thousand Barrels)

Year	Liquified Petroleum Gases & Ethane	Natural Gasoline & Isopentane	Plant Condensate	Finished Gasoline & Naphtha	All Other Products	Total
1952	--	--	--	--	--	120154
1953	--	--	--	--	--	131625
1954	--	--	--	--	--	136097
1955	--	--	--	--	--	153291
1956	--	--	--	--	--	159420
1957	--	--	--	--	--	161334
1958	90157	51615	--	11499	5257	158527
1959	103651	49358	--	10917	6157	170084
1960	106574	51812	--	6963	9817	175168
1961	113529	57012	--	6604	10466	187610
1962	119340	59219	--	6016	11086	195662
1963	127781	59722	--	6012	13324	206839
1964	131458	65447	11725	5367	1091	215088
1965	139229	66900	17847	4200	873	229049
1966	151426	66802	22051	2927	845	244051
1967	177368	70253	22871	2121	745	273358
1968	189162	72292	22612	1350	821	286237
1969	194599	73664	21021	1722	221	291227
1970	204177	76977	18693	1114	727	301688
1971	210435	78266	16022	1003	995	306721
1972	226624	76445	14298	932	762	319061
1973	221686	77681	13375	890	797	314429
1974	213756	74667	12235	867	547	302072
1975	212635	65926	11278	855	776	291470
1976	209514	65338	10538	833	869	287092

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS PRODUCTION



Annual natural gas production increased at a rate of 3.0 percent from 1952 to 1972. Total withdrawals of natural gas peaked in 1972, then declined at an annual rate of 5.8 percent from 1972 to 1975. The rate of production decline slowed in 1976: withdrawals totaled 7.7 trillion cubic feet, down 4.0 percent from 1975.

A greater portion of the total natural gas production has been withdrawn from gas wells in recent years. Approximately 70 percent of the total production was withdrawn from gas wells in the early 1950s, compared to over 80 percent in 1975.

NATURAL GAS PRODUCTION AND NUMBER OF PRODUCING WELLS

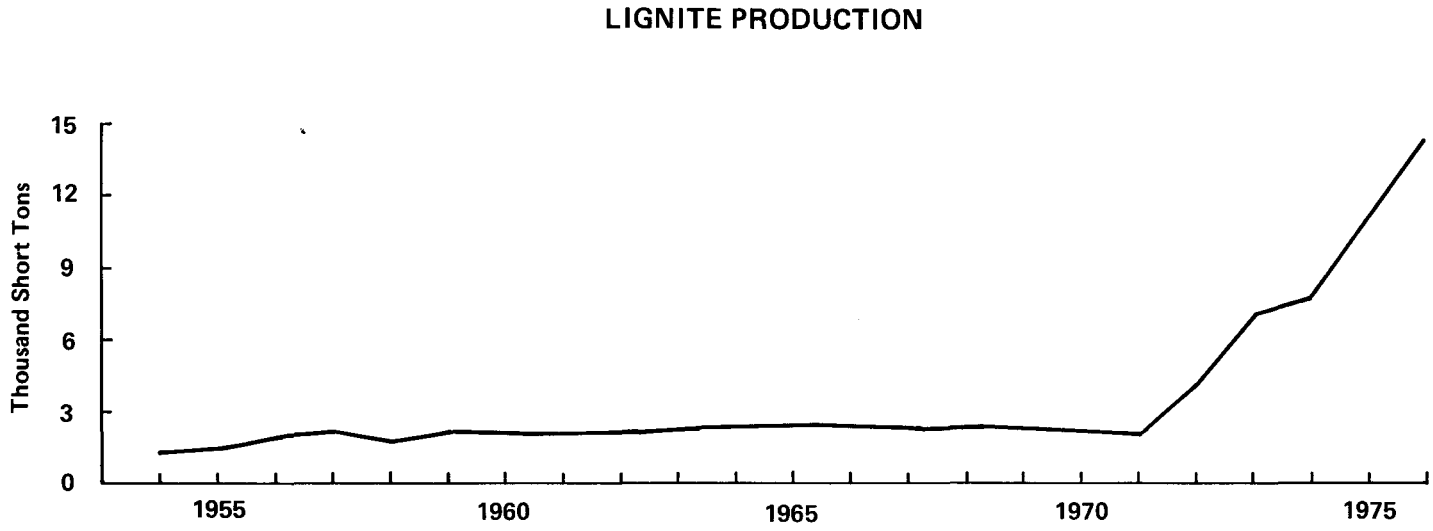
Year	Gross Withdrawals (Million Cubic Feet) From Gas Wells	From Oil Wells	Total*	Marketed Production (Million Cubic Feet)	Number of Producing Gas & Condensate Wells
1952	3779100	1507700	5286800	4147805	9200
1953	3835000	1624000	5459000	4383158	10200
1954	4020000	1600000	5620000	4551232	11200
1955	4100000	1736000	5836000	4730798	11400
1956	4196000	1793000	5989000	4999889	12240
1957	4251000	1850000	6101000	5156215	13400
1958	4417000	1666000	6083000	5178073	15340
1959	5037000	1714000	6751000	5718993	16750
1960	5307600	1657300	6964900	5892704	18612
1961	5353000	1667100	7020100	5963605	19831
1962	5551500	1647300	7198800	6080210	20834
1963	5769300	1683000	7452300	6205034	22016
1964	5914700	1707300	7622000	6525649	22995
1965	6052200	1688400	7740600	6636555	23748
1966	5784515	2150348	7934863	6953790	23907
1967	6280148	2011361	8291509	7188900	23760
1968	6477441	2088647	8566088	7495414	23805
1969	6800882	2113912	8914794	7853199	23689
1970	7165388	2233138	9398526	8357716	23417
1971	7327186	2191458	9518644	8550705	23280
1972	7409894	2140575	9550469	8657840	23373
1973	7282804	2007141	9289945	8513850	23805
1974	7029873	1829171	8859044	8170798	24646
1975	6463095	1525678	7988773	7485764	26184
1976	6213401 **	1453054 **	7666455 **	7192381 **	--

*Equals marketed production plus quantities vented and flared and used for repressuring.

**Preliminary data.

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

LIGNITE PRODUCTION



Estimates of lignite production remained constant throughout the 1960s at slightly over 2 million short tons per year. Production increased at an annual rate of 48.0 percent from 1971 to 1976, totaling 14.2 million short tons in 1976.

LIGNITE PRODUCTION
(Thousand Short Tons)

Year	Lignite Production*
1952	0
1953	0
1954	1300
1955	1500
1956	1900
1957	2100
1958	1800
1959	2200
1960	2100
1961	2100
1962	2100
1963	2200
1964	2300
1965	2400
1966	2300
1967	2200
1968	2300
1969	2200
1970	2100
1971	2000
1972	4045
1973	6944
1974	7684
1975	11002
1976	14215 **

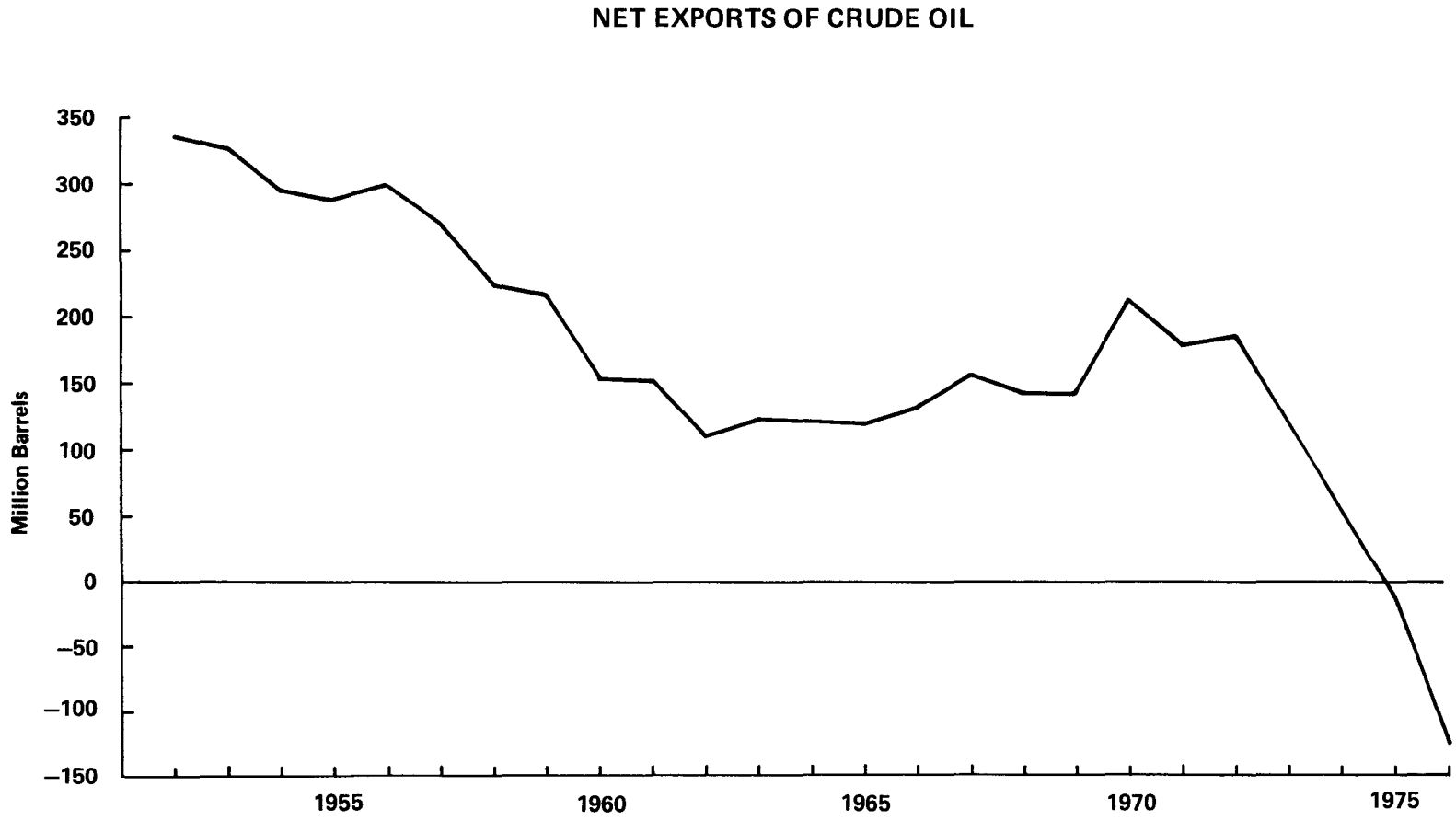
*Rough estimates.
**Preliminary data.

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

CHAPTER IV.

ENERGY IMPORTS AND EXPORTS

CRUDE OIL IMPORTS AND EXPORTS



Net exports (total exports less total imports) of crude oil dropped below zero in 1975. Texas now imports more crude than it exports, although large quantities of oil are exported as refinery products. Expanded refinery capacity and declining production of Texas crude have led to the increased volume of crude imports.

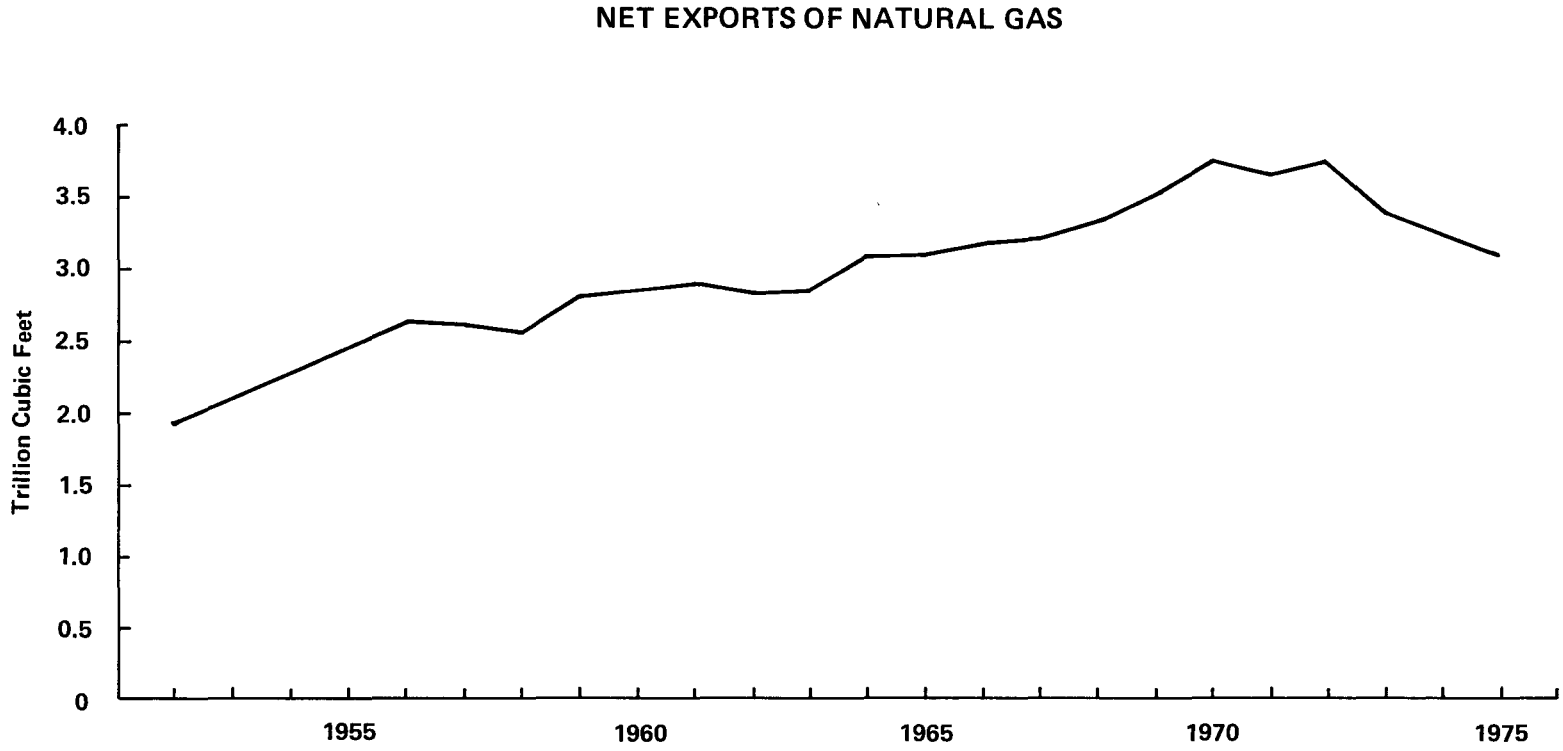
Crude oil imports from foreign sources increased 47.8 percent in 1976 while imports from other states declined 10.2 percent. Exports of Texas-produced crude increased 5.7 percent in 1976.

CRUDE OIL IMPORTS AND EXPORTS*
(Thousand Barrels)

Year	Imports			Exports	
	From Interstate Sources	From Foreign Sources	Total	Crude Oil Produced in Texas	Net Exports**
1952	111025	3464	114489	450294	335805
1953	127156	1866	129022	455879	326857
1954	112516	3186	115702	410756	295054
1955	118372	9615	127987	415368	287381
1956	126530	10706	137236	434885	297649
1957	130067	7050	137117	406675	269558
1958	146952	14541	161493	384176	222683
1959	163771	8611	172382	387145	214763
1960	185285	1037	186322	338879	152557
1961	190221	641	190862	341708	150846
1962	211463	121	211584	320154	108570
1963	221649	277	221926	343686	121760
1964	215178	19	215197	335900	120703
1965	229036	0	229036	347317	118281
1966	253425	0	253425	384523	131098
1967	251465	0	251465	407292	155827
1968	264682	0	264682	405935	141253
1969	251444	0	251444	391718	140274
1970	246687	0	246687	456718	210031
1971	250103	17707	267810	444124	176314
1972	228246	23552	251798	435199	183401
1973	181943	128872	310815	428146	117331
1974	158596	227065	385661	437541	51880
1975	138001	308619	446620	431517	-15103
1976	123976	456111	580087	455967	-124120

*Reported as "Refinery Receipts" by Bureau of Mines.
**Net exports is total exports minus total imports.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS IMPORTS AND EXPORTS



Net exports of natural gas declined for the third consecutive year in 1975. Exports declined primarily because few new contracts were made for sales to the interstate market; most newly discovered gas is sold at higher prices in the unregulated intrastate market. During the period 1952-1970, net exports increased at an annual rate of 3.7 percent.

NATURAL GAS IMPORTS AND EXPORTS
(Million Cubic Feet)

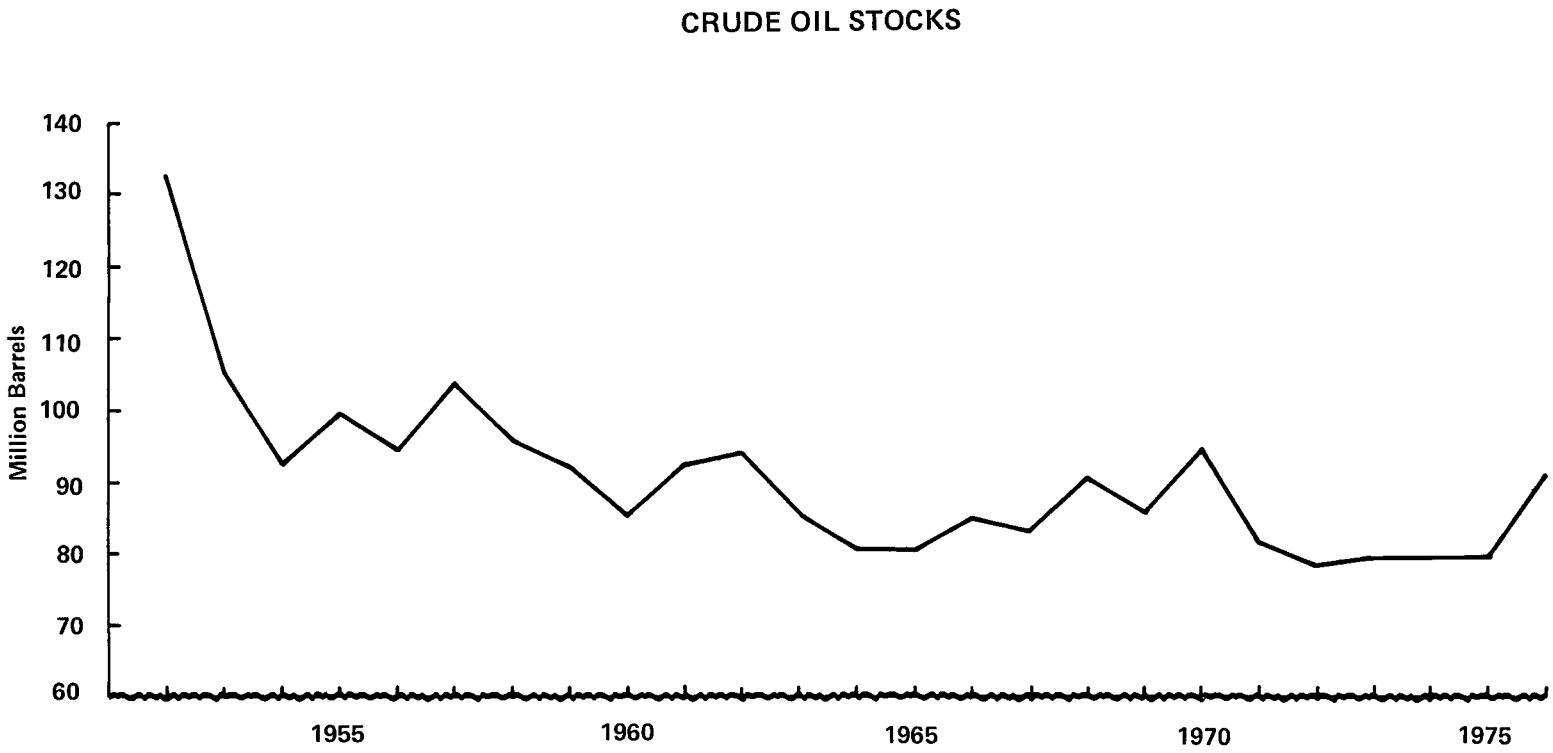
Year	Imports	Exports	Net Exports*
1952	66326	1997633	1931307
1953	104347	2242504	2138157
1954	110183	2419693	2309510
1955	103934	2564598	2460664
1956	117333	2752071	2634738
1957	137923	2743410	2605487
1958	146244	2700103	2553859
1959	161239	2964864	2803625
1960	102740	2952291	2849551
1961	77900	2969731	2891831
1962	79661	2909624	2829963
1963	102501	2948716	2846215
1964	96634	3180381	3083747
1965	80162	3178820	3098658
1966	228644	3395393	3166749
1967	323801	3528253	3204452
1968	435771	3759024	3323253
1969	485293	3993263	3507970
1970	554406	4299426	3745020
1971	566763	4217195	3650432
1972	558825	4300891	3742066
1973	551332	3941863	3390531
1974	536614	3766251	3229637
1975	544730	3622568	3077838

*Net exports is total exports minus total imports.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

CHAPTER V.

ENERGY STOCKS

CRUDE OIL STOCKS



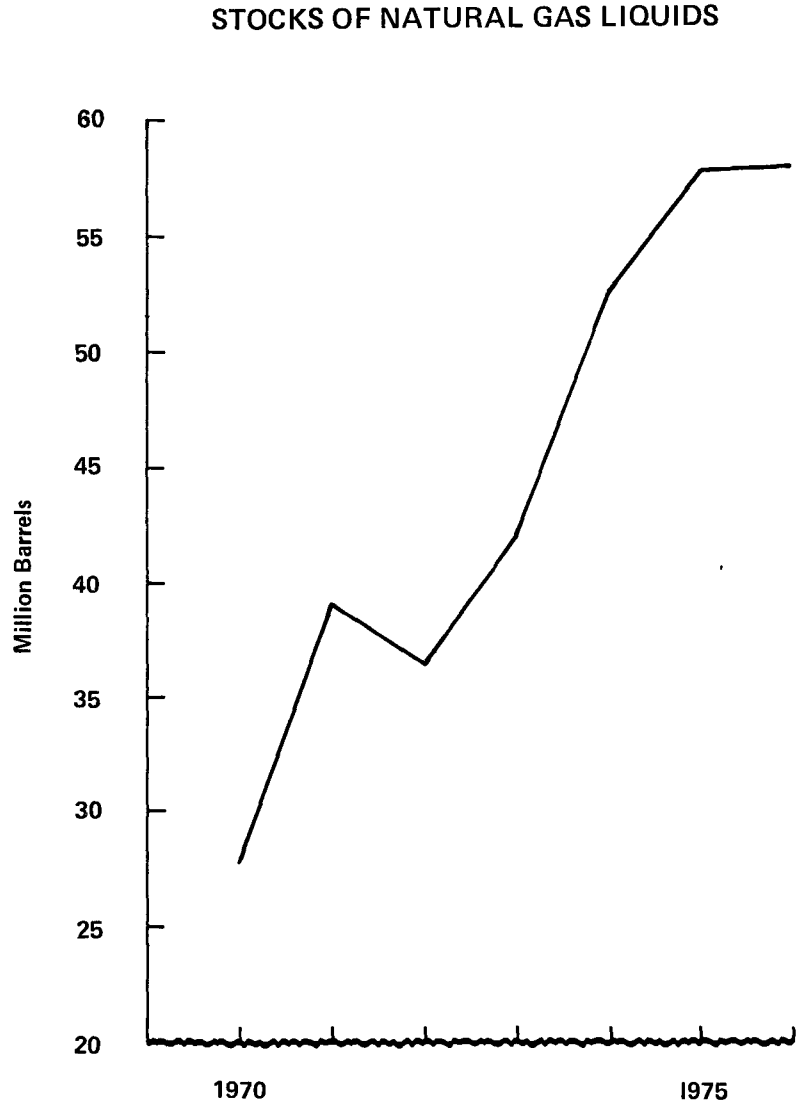
In the 1970s total stocks of crude oil were maintained at a level close to 80 million barrels. Anticipation of the increased price of foreign oil caused the volume of stocks to increase rapidly to 91 million barrels at year-end 1976.

STOCKS OF CRUDE OIL, AS OF DECEMBER 31
(Thousand Barrels)

Year	Located at Refineries	Total*
1952	17158	132545
1953	16315	105173
1954	14996	92540
1955	14932	99590
1956	15778	94440
1957	16153	103689
1958	15275	96067
1959	14942	92269
1960	14646	85364
1961	15012	92469
1962	15452	94297
1963	13414	85839
1964	13449	80764
1965	12656	80555
1966	14075	84991
1967	15005	83072
1968	17341	90687
1969	15149	85833
1970	17510	94786
1971	14098	81621
1972	13552	78331
1973	16314	79388
1974	16641	79393
1975	18551	79542
1976	21796	91011

*Stocks at refineries, pipelines, and tank farms.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS LIQUIDS STOCKS



Total stocks of natural gas liquids have increased substantially from 1970 to 1976. Liquified petroleum gases held an average 86 percent share of total natural gas liquids stocks, declining to 78 percent in 1976 when ethane stocks increased dramatically.

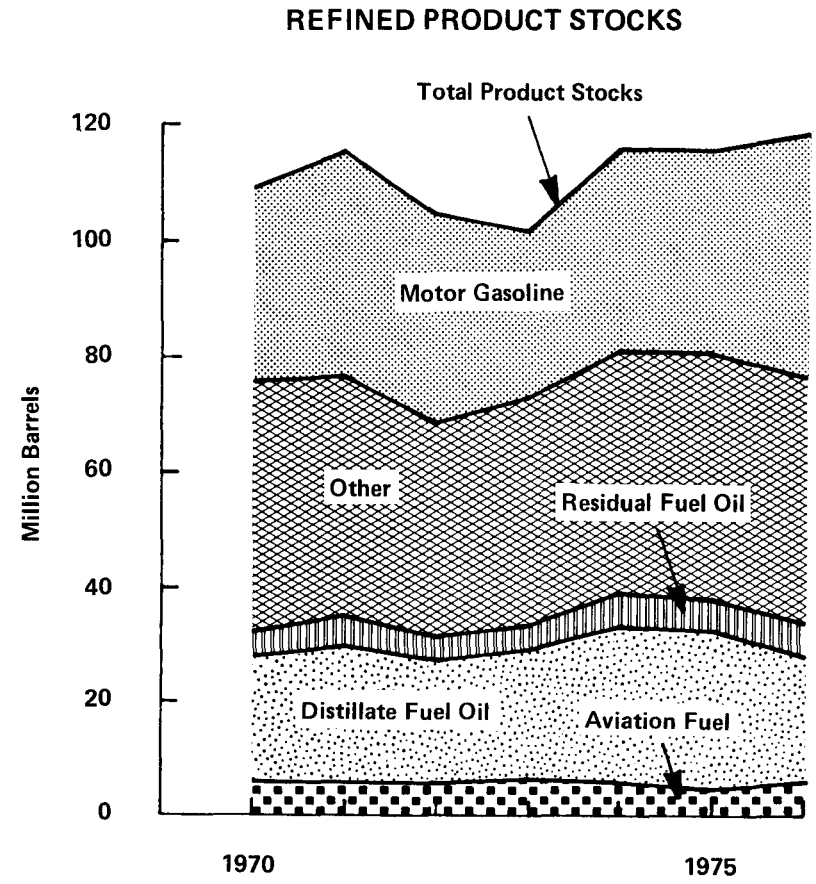
NATURAL GAS LIQUIDS STOCKS

STOCKS OF NATURAL GAS LIQUIDS, AS OF DECEMBER 31
(Thousand Barrels)

Year	Ethane	Liquified Petroleum Gases	Natural Gasoline & Isopentane	Plant Condensate	Other Products	Total*
1970	664	24459	2199	332	91	27745
1971	2403	34203	2015	277	76	38974
1972	6029	28595	1356	381	92	36453
1973	3729	35432	2338	441	74	42014
1974	2880	46701	2547	387	84	52599
1975	4734	49869	2672	504	66	57845
1976	10028	45501	2144	324	50	58047

*Stocks at plants, terminals, refineries, and pipelines.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

REFINED PRODUCT STOCKS



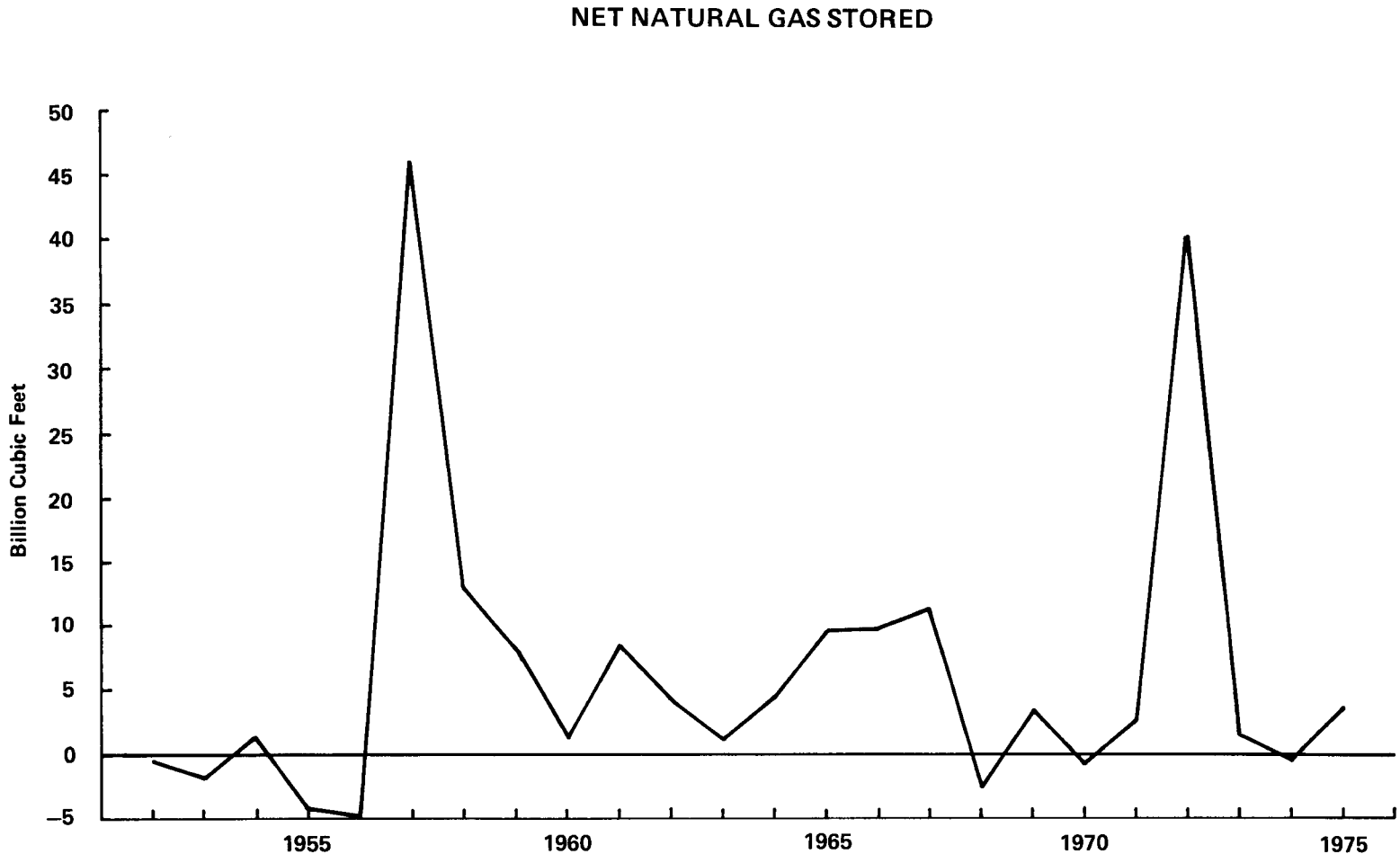
During the period 1970-1976, year-end stocks of refined products ranged from a low of 102.0 million barrels in 1973 to a high of 118.9 million barrels in 1976. Approximately one-third of the total product stocks are motor gasoline; distillate fuel oil is the second major product stock.

STOCKS OF REFINED PRODUCTS, AS OF DECEMBER 31
(Thousand Barrels)

Year	Motor Gasoline	Aviation Fuel	Distillate Fuel Oil	Residual Fuel Oil	Other	Total*
1970	33407	6095	21888	4286	43535	109211
1971	38971	5901	24068	5124	41603	115667
1972	35937	5862	21439	4203	37438	104879
1973	28857	6613	22690	4267	39617	102044
1974	34832	6105	27149	6079	42070	116235
1975	35062	4842	27920	5440	42906	116170
1976	41739	6169	21855	6198	42935	118896

*Stocks held by refining and pipeline companies, and by independent bulk terminal operators.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

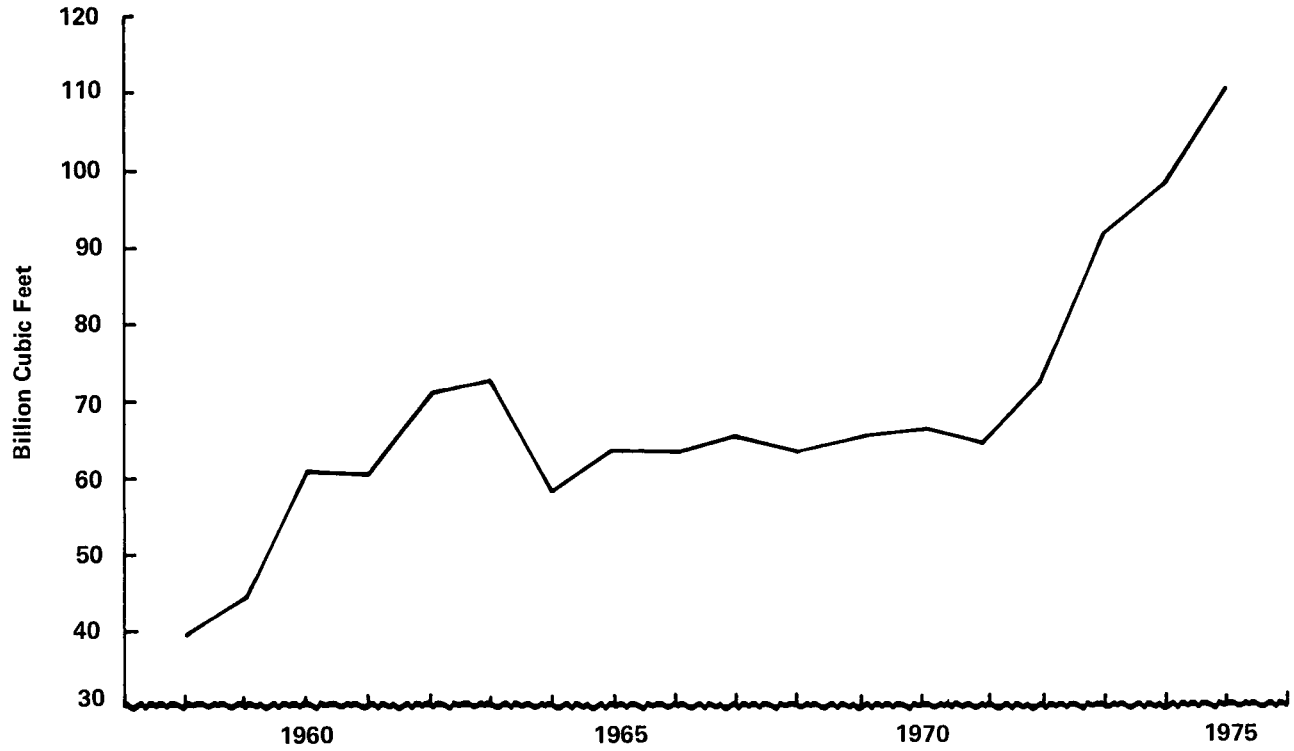
NATURAL GAS STORED



The net quantity of natural gas stored (the total quantity of gas injected into storage reservoirs less the total quantity withdrawn from reservoirs) is a function primarily of supply and demand for natural gas. A high level of natural gas production in 1972 led to a net stored quantity of 40.0 billion cubic feet, whereas in 1974 high demand for natural gas led to a net storage quantity of -0.6 million cubic feet.

NATURAL GAS STORED

TOTAL NATURAL GAS STORED UNDERGROUND



The total quantity of natural gas stored underground increased at a rapid rate from 1971 to 1975 as reservoir capacity increased. Typically, gas is injected into the reservoirs during periods of low demand and withdrawn during periods of high demand, particularly during the winter heating season. Quantities in storage are measured at each year's end.

NATURAL GAS STORED

STORAGE OF NATURAL GAS, AS OF DECEMBER 31
(Million Cubic Feet)

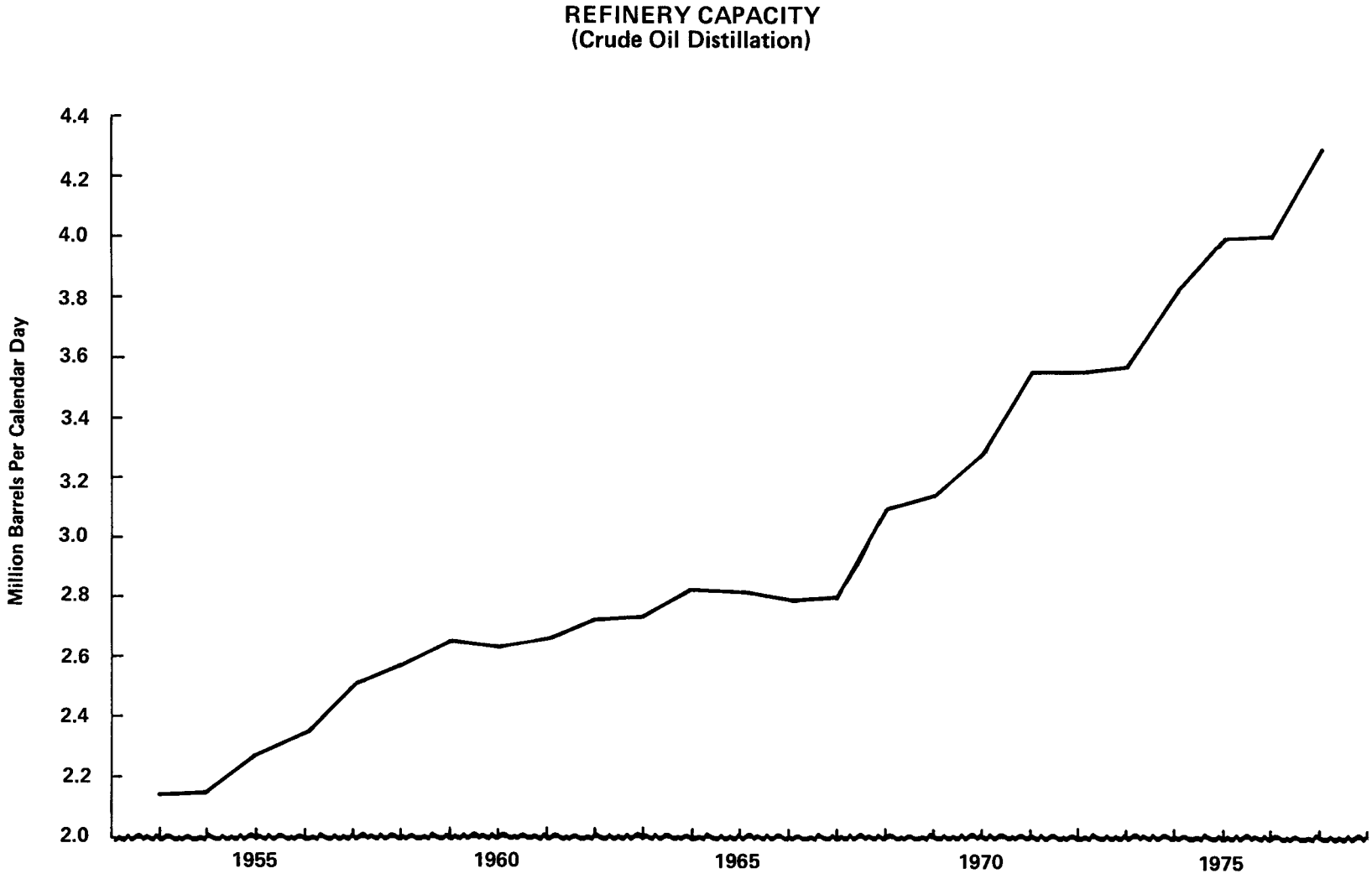
Year	Total Stored			Stored Underground		
	Stored Natural Gas	Withdrawn Natural Gas	Net Stored	Number of Reservoirs	Total Stored Gas in Underground Reservoirs	Total Reservoir Capacity
1952	1733	2291	-558	--	--	--
1953	3985	5849	-1864	--	--	--
1954	9322	8047	1275	--	--	--
1955	14030	18184	-4154	--	--	--
1956	9565	14444	-4879	--	--	--
1957	53083	7262	45821	--	--	--
1958	24787	11850	12937	5	39260	52535
1959	26172	18098	8074	6	44264	50687
1960	23362	22101	1261	8	61051	59975
1961	24044	15540	8504	9	60421	70615
1962	22409	18244	4165	11	70940	91295
1963	26313	25244	1069	11	72731	89345
1964	29345	24978	4367	13	58248	92326
1965	28952	19501	9451	15	63782	96641
1966	33012	23456	9556	15	63568	96641
1967	34836	23767	11069	17	65740	104844
1968	31597	34242	-2645	17	63586	113065
1969	33943	30582	3361	17	65454	118063
1970	36805	37729	-924	17	66298	115126
1971	36850	34452	2398	17	64474	110114
1972	87251	47269	39982	17	72785	175995
1973	46592	45188	1404	17	91463	186464
1974	54705	55309	-604	18	98271	190892
1975	54333	50801	3532	18	110421	334265

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes), (underground storage data provided to BOM by American Gas Association).

CHAPTER VI.

ENERGY PROCESSING, CONVERSION, AND DISTRIBUTION

PETROLEUM REFINERY DATA



Capacity to refine crude oil in Texas increased at an annual rate of 2.9 percent from 1953 to 1977. Little expansion occurred during 1975, but during 1976, refining capacity increased 7.3 percent due to high demand for petroleum products throughout the nation.

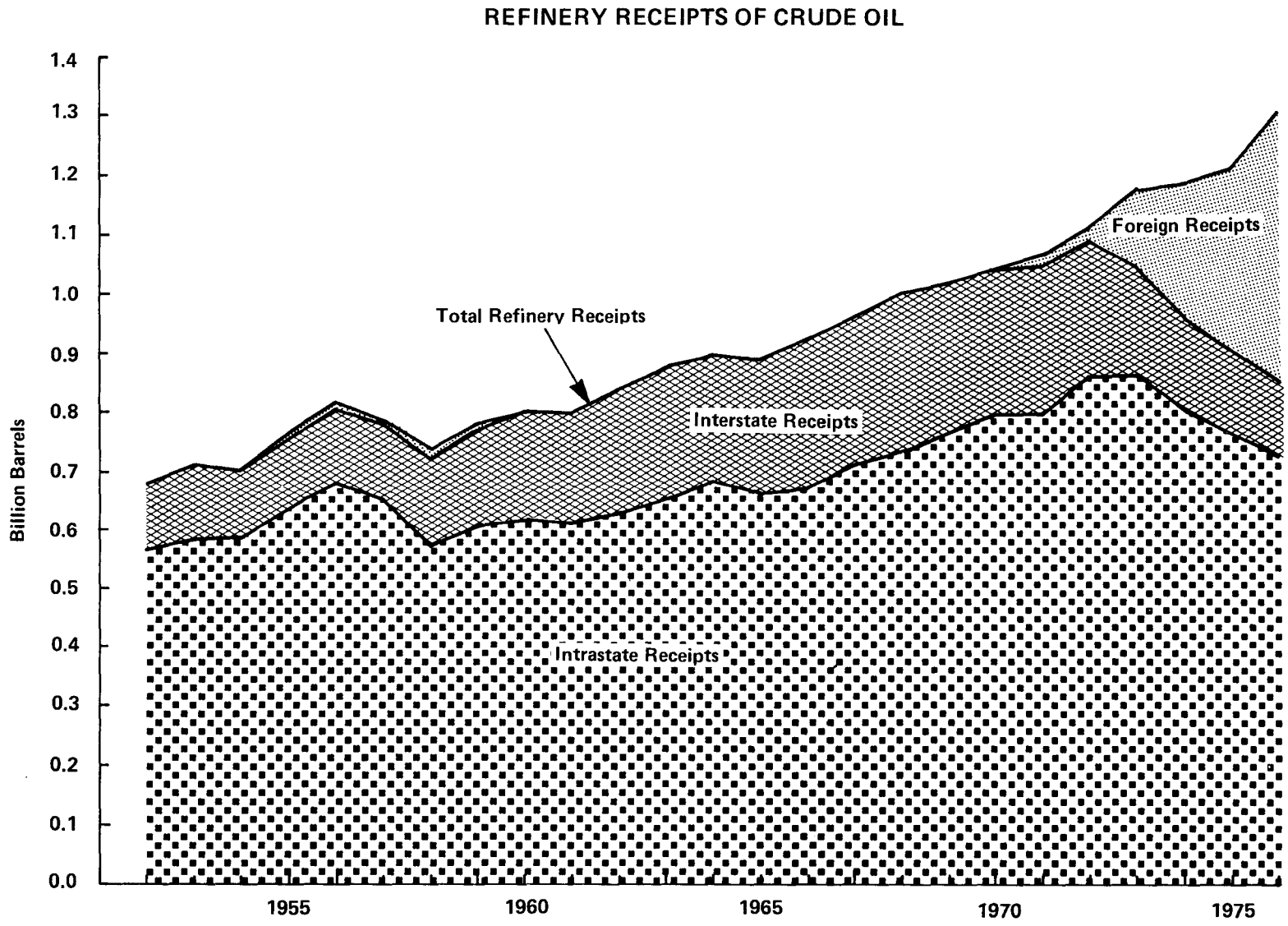
Refining capacity growth in recent years has occurred primarily through expansion of existing facilities rather than construction of new refineries.

NUMBER AND CAPACITY OF PETROLEUM REFINERIES*

Year	Total Number of Petroleum Refineries	Capacity, as of January 1 (Barrels per Calendar Day)	
		Crude Oil Throughput Capacity	Gasoline Output Capacity
1953	62	2142537	619234
1954	61	2151037	657169
1955	57	2273450	741763
1956	54	2345800	774407
1957	56	2508400	853714
1958	56	2573900	896580
1959	58	2650442	975195
1960	59	2631820	1032935
1961	60	2657890	1007006
1962	62	2724100	994856
1963	60	2735250	1012574
1964	59	2826550	1042355
1965	56	2820015	1037245
1966	55	2790102	1049125
1967	53	2800732	1274665
1968	53	3096464	1357265
1969	51	3143179	1475745
1970	51	3282542	1552745
1971	51	3556278	1646685
1972	50	3555358	1761205
1973	46	3569858	1850395
1974	48	3807746	1850595
1975	49	3995050	1854316
1976	51	4005550	1881166
1977	50	4296387	1913528

*Includes operating and shutdown refineries and capacity.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Petroleum Refineries, Annual* (annual issues).

PETROLEUM REFINERY DATA



Total refinery receipts of crude oil have increased steadily over the historical period 1952-1976, paralleling the growth in refinery capacity. The average rate of increase for the 24-year period was 2.8 percent per year; refinery receipts in 1976 increased at a rapid 7.9 percent rate.

Patterns in the origin of crude oil received at refineries

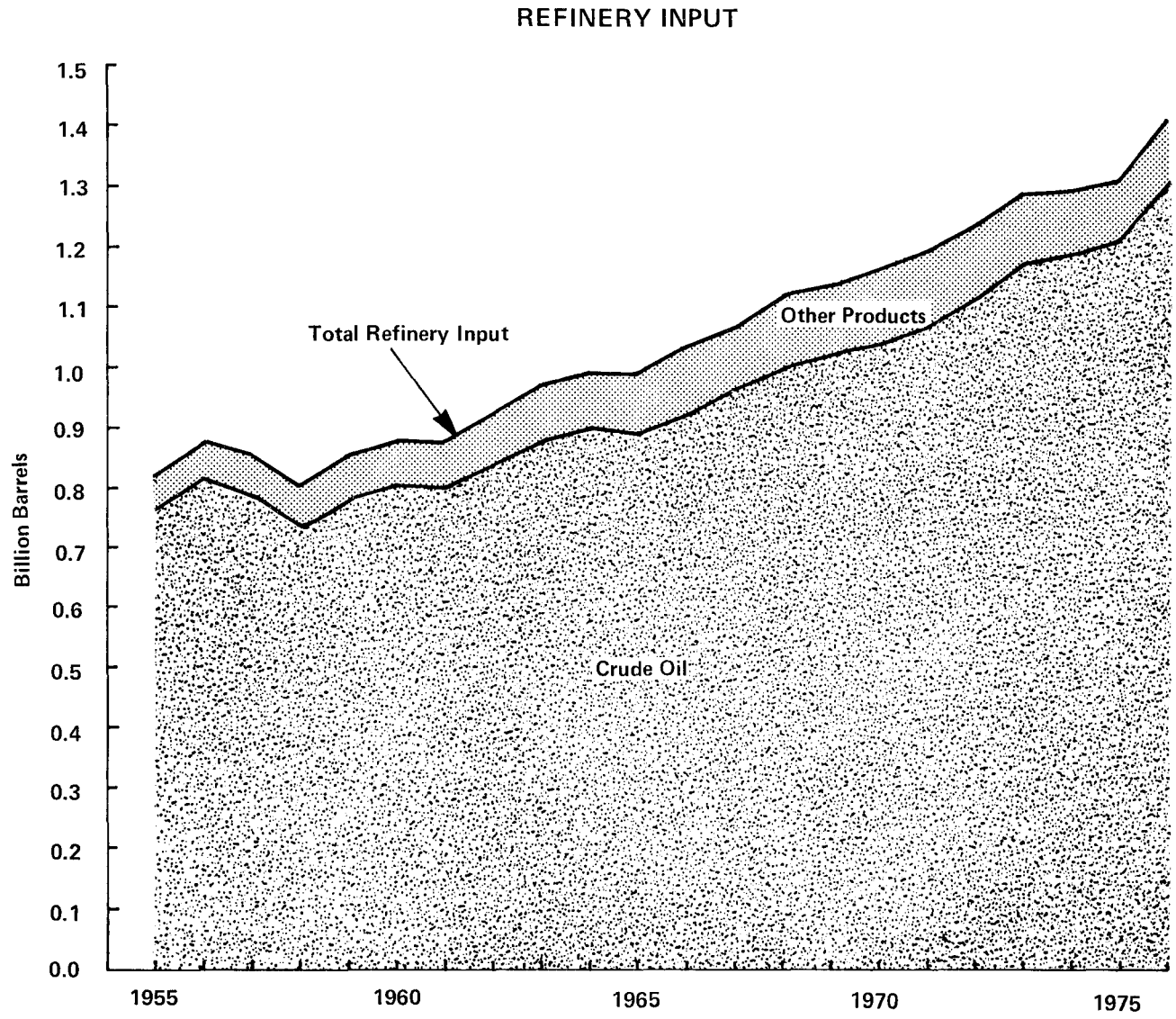
shifted in the 1970s. Throughout the 1950s and 1960s, crude oil receipts from intrastate and interstate sources increased steadily while foreign oil represented a very small portion of the total. Receipts from intrastate sources have declined since 1973 at a rate of 5.5 percent per year; receipts from interstate sources have declined since 1971 at an annual rate of 13.1 percent; receipts from foreign sources have increased rapidly from zero in 1970 to over one-third of the total in 1976. In 1976, oil produced in Texas supplied 56 percent of the total refinery receipts, oil produced in other states supplied 9 percent, and foreign oil supplied 35 percent.

REFINERY RECEIPTS OF CRUDE OIL
(Thousand Barrels)

Year	Origin			Total
	Intrastate	Interstate	Foreign	
1952	566160	111025	3464	680649
1953	583455	127156	1866	712477
1954	586474	112516	3186	702176
1955	636406	118372	9615	764393
1956	679532	126530	10706	816768
1957	650166	130067	7050	787283
1958	573564	146952	14541	735057
1959	605258	163771	8611	777640
1960	615312	185285	1037	801634
1961	608821	190221	641	799683
1962	626794	211463	121	838378
1963	652742	221649	277	874668
1964	683007	215178	19	898204
1965	659968	229036	0	889004
1966	669674	253425	0	923099
1967	710489	251465	0	961954
1968	735130	264682	0	999812
1969	766763	251444	0	1018207
1970	794407	246687	0	1041094
1971	796387	250103	17707	1064197
1972	860768	228246	23552	1112566
1973	863495	181943	128872	1174310
1974	803030	158596	227065	1188691
1975	765811	138001	308619	1212431
1976	727707	123976	456111	1307794

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

PETROLEUM REFINERY DATA



Refinery input increased at an annual rate of 2.8 percent from 1952 to 1976. In 1976 input to refineries increased 7.8 percent. Crude petroleum has historically been the primary fuel input, supplying over 90 percent of the total.

PETROLEUM REFINERY DATA

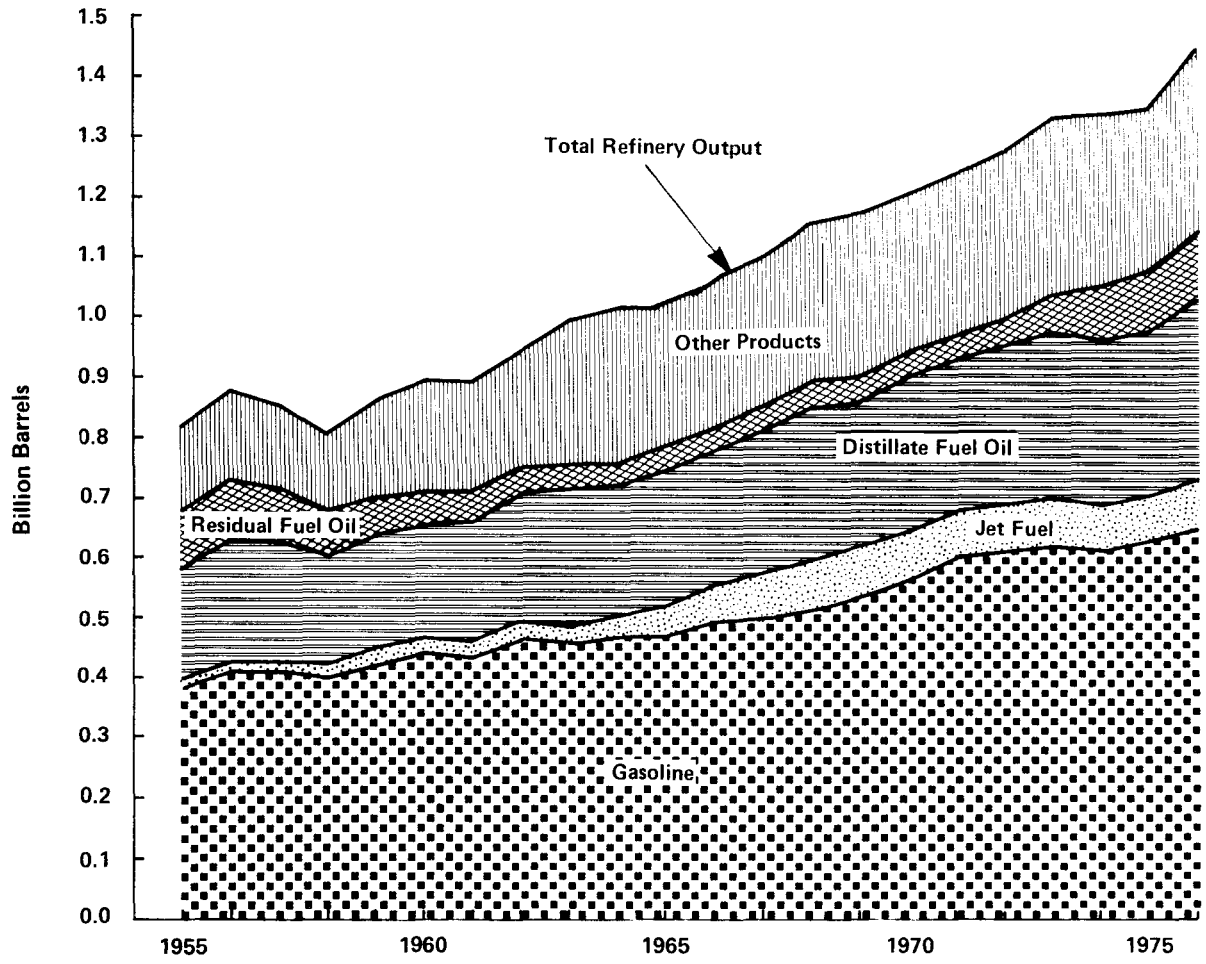
REFINERY INPUT
(Thousand Barrels)

Year	Crude Petroleum	Unfinished Oils Rerun (Net)	Natural Gas Liquids	Other Hydrocarbons	Total
1952	679146	--	44747	0	723893
1953	713272	--	47292	0	760564
1954	703432	--	49211	0	752643
1955	764396	--	54720	0	819116
1956	815836	--	60983	0	876819
1957	786851	--	67509	0	854360
1958	735839	--	68878	0	804717
1959	777758	--	76712	0	854470
1960	801775	--	77033	0	878808
1961	798914	--	77857	55	876826
1962	837820	--	88506	0	926326
1963	876529	--	95430	0	971959
1964	898023	--	94105	0	992128
1965	889679	-14954	115482	0	990207
1966	921619	-14520	126977	0	1034076
1967	960895	-25285	131542	15	1067167
1968	997367	-17922	140676	224	1120345
1969	1020142	-31413	147558	178	1136465
1970	1038498	-27493	154286	184	1165475
1971	1067427	-21410	147181	554	1193752
1972	1112960	-23833	144728	425	1234280
1973	1171326	-23226	137589	305	1285994
1974	1188124	-20637	124506	698	1292691
1975	1210366	-19027	114165	2745	1308249
1976	1304452	-18161	120333	3038	1409662

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

PETROLEUM REFINERY DATA

REFINERY OUTPUT



From 1952 to 1976 refinery output increased at a rate of 2.9 percent per year. In 1976 output increased at a rapid 7.4 percent.

The mix of refinery products has remained relatively stable over the 24-year period. In 1976 gasoline was the primary output with a 44.9 percent share of the total. Distillate fuel oil was second with 20.6 percent. Residual oil held a 7.9 percent share of the total output; jet fuel, 5.6 percent; and other products (including ethane, liquified gases, kerosene, petrochemical feedstocks, special naphthas, lube oil, wax, coke, asphalt, road oil, still gas, and miscellaneous products), 20.9 percent.

PETROLEUM REFINERY DATA

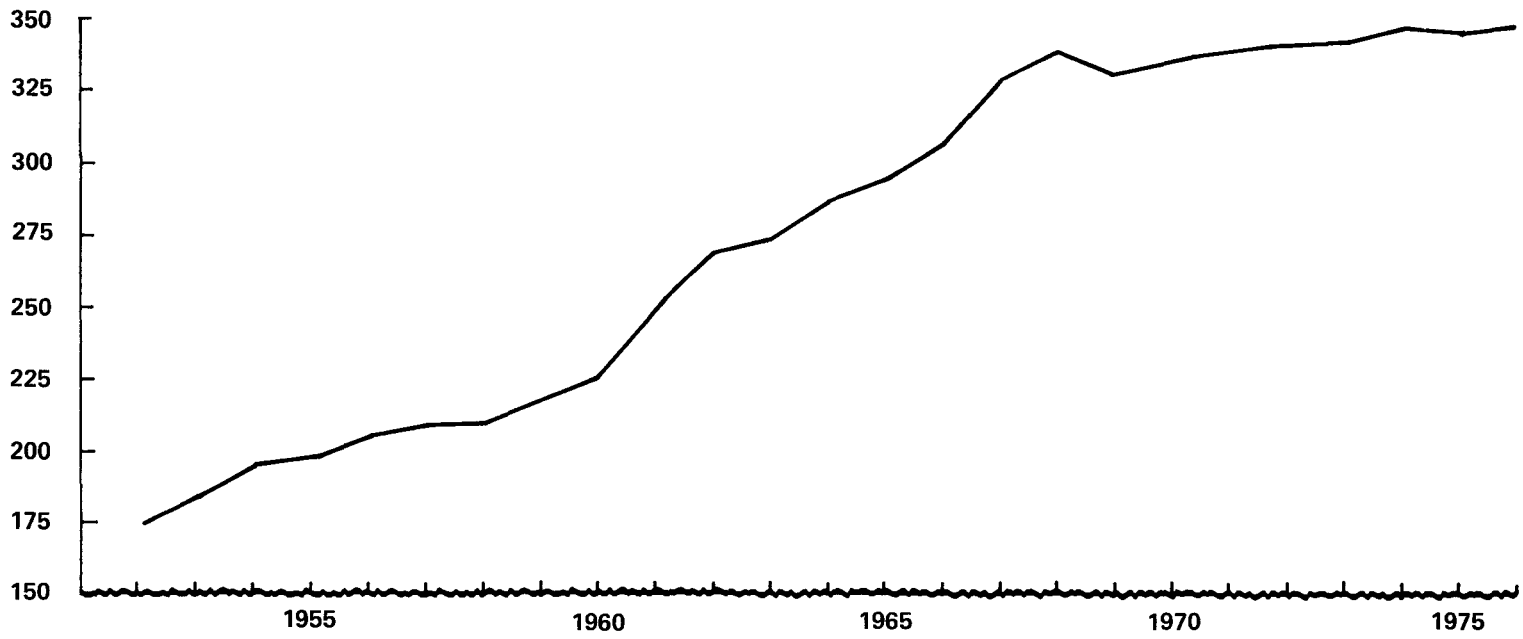
REFINERY OUTPUT
(Thousand Barrels)

Year	Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Other	Total
1952	328134	--	160026	105448	127711	721319
1953	352132	18927	161337	101117	126121	759634
1954	353317	19012	159269	91746	127905	751249
1955	380474	16935	183973	96896	140223	818501
1956	407222	17963	203977	100912	146980	877054
1957	407093	18543	198803	91592	137845	853876
1958	397935	23588	179355	77245	128687	806810
1959	419042	29305	186948	65605	159519	860419
1960	437812	27460	185901	58629	182783	892585
1961	430718	27637	198680	53250	181130	891415
1962	461077	32030	212646	42460	193180	941393
1963	456151	28635	228134	40386	239150	992456
1964	465815	33027	220120	36591	257807	1013360
1965	465567	51728	226104	39590	229157	1012146
1966	489937	61617	223924	40682	244888	1061048
1967	495457	78363	235905	44492	243395	1097612
1968	511362	84120	252329	45898	259876	1153585
1969	534286	86681	237925	40357	272851	1172100
1970	562122	81013	254623	41233	262543	1201534
1971	598415	78298	250551	40514	267486	1235264
1972	609515	80313	261614	41290	279703	1272435
1973	617666	80831	275367	58770	295193	1327827
1974	609897	76435	274623	87180	285842	1333977
1975	628390	75065	270914	101856	267498	1343723
1976	648273	81433	297489	114010	301667	1442872

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS PROCESSING PLANT DATA

NUMBER OF GASOLINE PLANTS



The number of gasoline plants increased steadily between 1952 and 1976, following the trend of increasing natural gas production in the state. Total input and output to natural gas processing plants peaked in 1972 and declined each year thereafter, although the number of gasoline plants continued to increase after 1972.

NATURAL GAS PROCESSING PLANT DATA

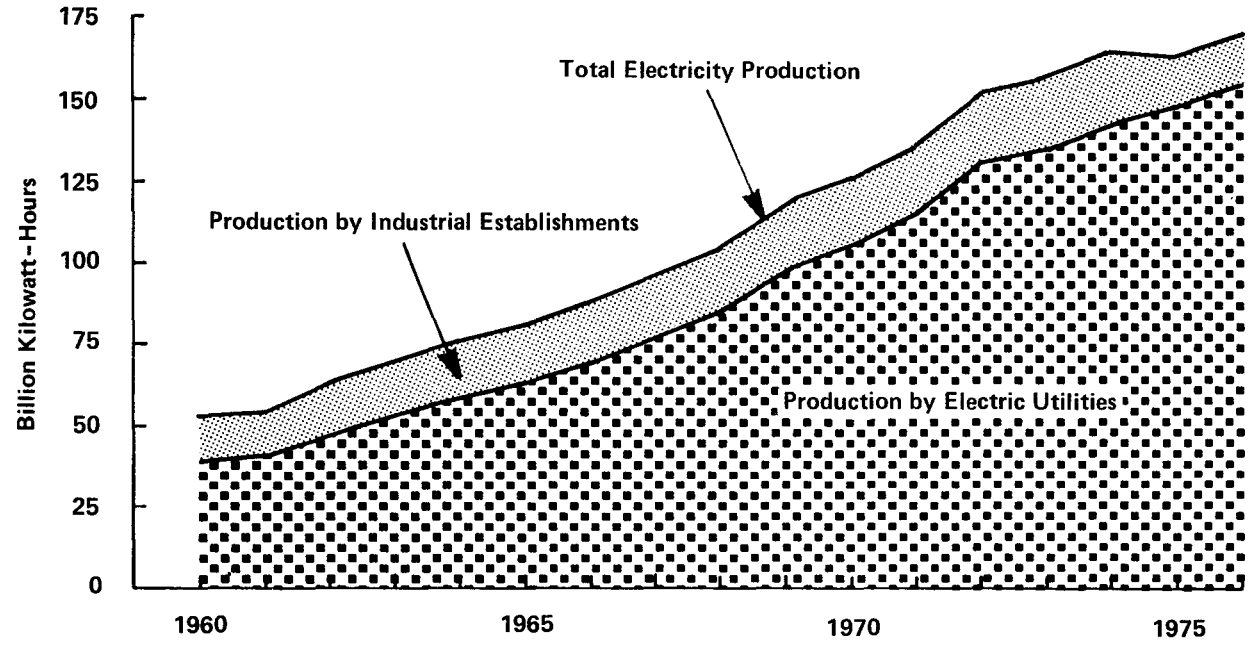
NUMBER OF GASOLINE PLANTS AND NATURAL GAS PROCESSING PLANT INPUT AND OUTPUT

Year	Total Number of Gasoline Plants	Total Input (Million Cubic Feet)	Total Output (Thousand Barrels)
1952	174	4078364	127896
1953	184	4342097	137348
1954	195	4594099	146541
1955	198	4808807	160212
1956	205	5249152	171170
1957	209	5304441	175187
1958	210	5248824	172157
1959	218	5802706	185416
1960	226	6162373	191085
1961	249	6450075	203721
1962	268	6752107	215538
1963	273	7177741	230631
1964	286	7536276	244557
1965	294	8049456	265072
1966	306	8494524	276919
1967	328	8997283	291941
1968	338	9773406	304621
1969	331	10163652	308555
1970	335	10513144	316031
1971	338	10457585	318722
1972	340	10572554	329719
1973	341	10057989	326159
1974	346	9461851	312287
1975	345	8577212	301369
1976	347	8104885	297992

Note: Input and output data are the total of cycling plant, gasoline plant, and other gas plant operations.
SOURCE: Texas Railroad Commission, *Annual Report of the Oil and Gas Division,* (annual volumes).

ELECTRIC POWER PRODUCTION

PRODUCTION OF ELECTRICITY



In the period 1960-1976 production of electricity by electric utilities increased at an annual rate of 9.0 percent. From 1973 to 1976 production increased at a slower rate, 4.7 percent per year.

Production of electricity by industrial establishments increased at an annual rate of 3.3 percent from 1960 to 1974. Production declined drastically, by 30.1 percent, in 1975 due primarily to the economic recession. in 1976 production declined slightly.

PRODUCTION OF ELECTRICITY
(Million Kilowatt-Hours)

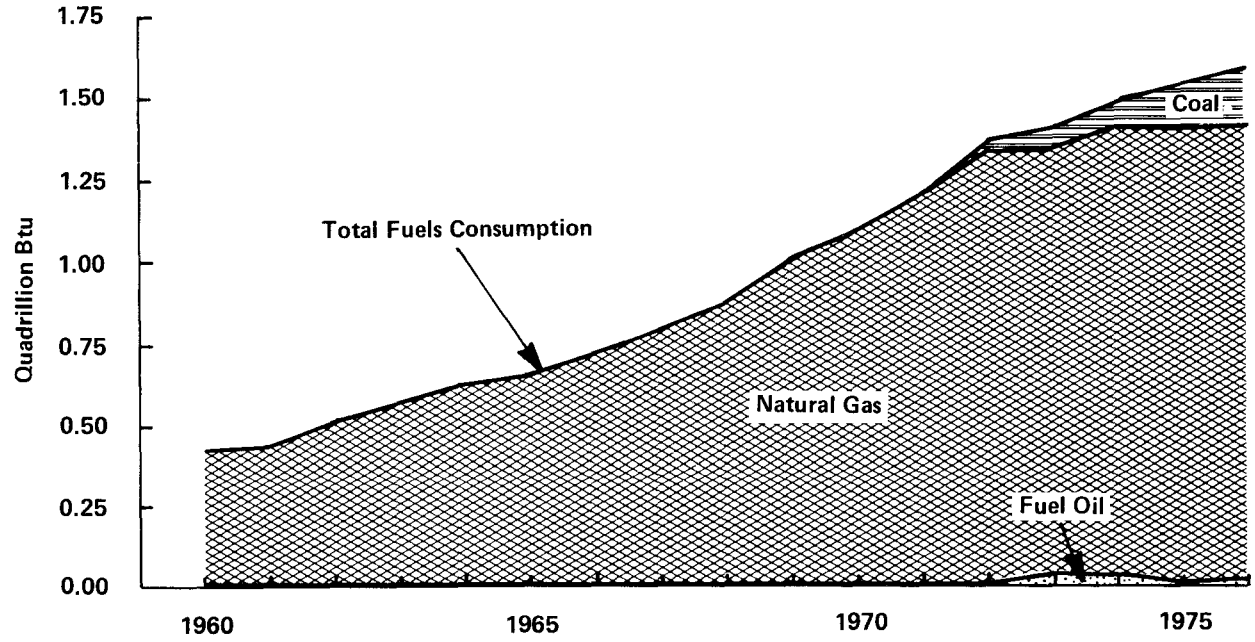
Year	Electric Utility			Industrial Establishments	Total Production
	By Water Power	By Fuels	Total	Total	
1952	387	17105	17492	--	--
1953	384	19558	19942	--	--
1954	600	20838	21438	--	--
1955	913	22987	23900	--	--
1956	493	27933	28426	--	--
1957	1324	29544	30868	--	--
1958	1222	31180	32402	--	--
1959	1050	34711	35761	--	--
1960	1102	38098	39200	14036	53236
1961	1234	39676	40910	13707	54617
1962	800	46750	47550	16006	63556
1963	478	52885	53363	17003	70366
1964	454	57744	58198	17942	76140
1965	743	62176	62919	18530	81449
1966	787	68470	69257	19043	88300
1967	579	76160	76739	19722	96461
1968	1327	83760	85087	19900	104987
1969	1271	95931	97202	20903	118105
1970	1005	104127	105132	20614	125746
1971	877	114330	115207	20375	135582
1972	830	129912	130742	20697	151439
1973	1700	133115	134815	21509	156324
1974	1631	140536	142167	22136	164303
1975	1922	145763	147685	15480	163165
1976	1066 *	153479 *	154545 *	15359 *	169904 *

*Preliminary data.

SOURCES: Electric Utility Production: Edison Electric Institute (Federal Power Commission data), *Statistical Year Book of the Electric Utility Industry* (annual volumes). Industrial Production: Federal Power Commission, *Electric Power Statistics* (monthly issues).

ELECTRIC POWER PRODUCTION

CONSUMPTION OF FUELS BY ELECTRIC UTILITIES



Natural gas historically been the major source of energy used for the generation of electricity in Texas. Since 1972 the use of coal has increased at a rapid rate of 53 percent per year and fuel oil usage has increased at an annual rate of 20 percent. In 1976 natural gas accounted for 88 percent of the total energy used in electric power production; coal supplied 11 percent; and fuel oil, 1 percent.

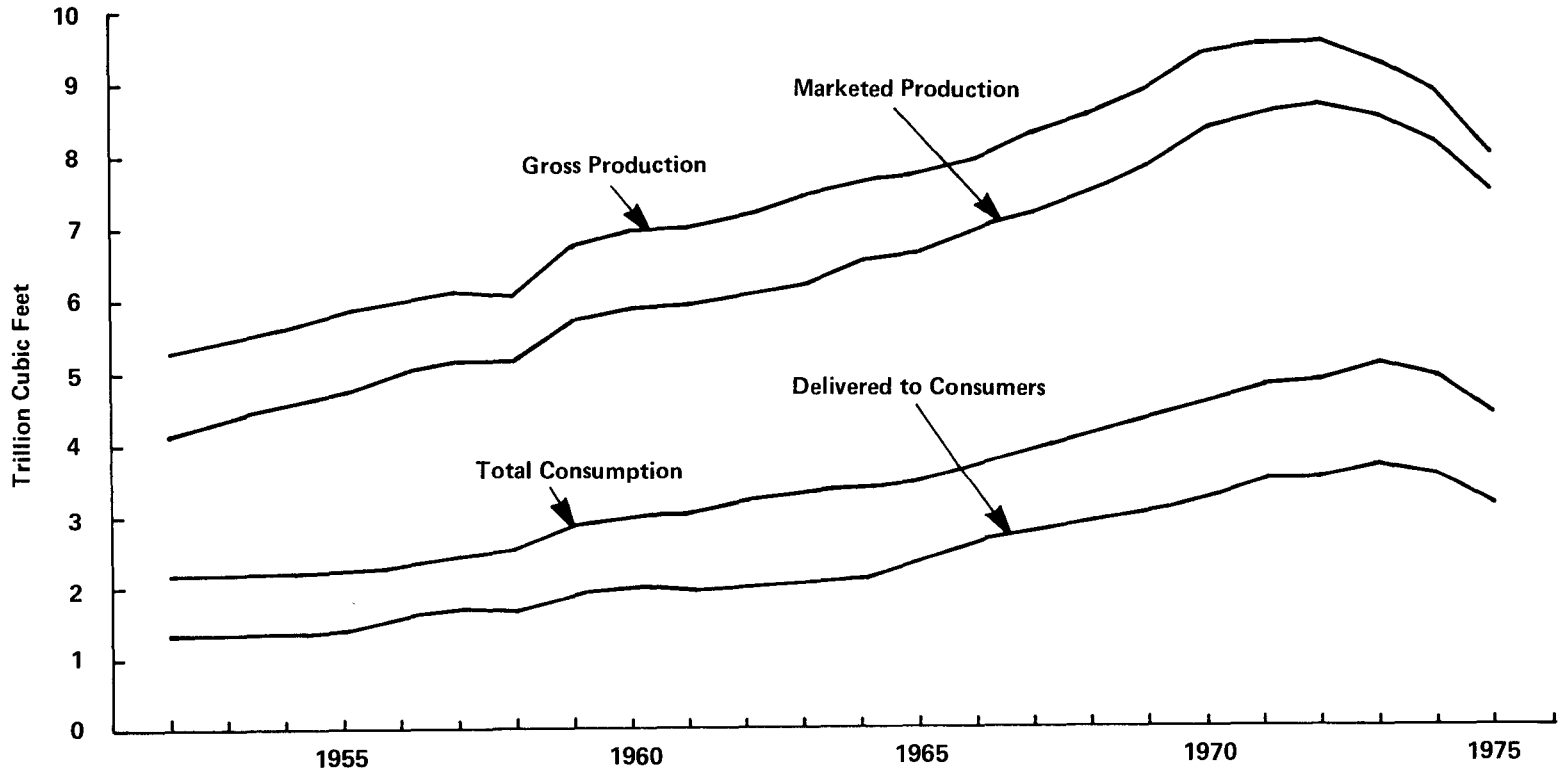
CONSUMPTION OF FUELS BY ELECTRIC UTILITIES

Year	Coal (Thousand Tons)	Fuel Oil (Thousand Barrels)	Natural Gas (Million Cubic Feet)
1960	--	604	407013
1961	--	554	420803
1962	--	1037	491218
1963	--	856	553954
1964	--	513	605780
1965	--	471	638603
1966	--	610	701237
1967	--	501	774033
1968	--	771	851010
1969	--	966	973423
1970	--	149	1059816
1971	9	342	1167821
1972	2239	1797	1285114
1973	4731	6269	1265660
1974	5196	5491	1334837
1975	9044	1808	1352526
1976	12351 *	3732 *	1349059 *

*Preliminary data.
SOURCE: Federal Power Commission, *Electric Power Statistics* (monthly issues).

NATURAL GAS DISPOSITION

DISPOSITION OF NATURAL GAS PRODUCTION



Gross production of natural gas represents the total amount withdrawn from oil and gas wells, which includes the marketed production of gas, gas returned to the formation for pressure maintenance, and gas vented or flared. Gross production increased at an annual rate of 3.0 percent from 1952 to 1972, while marketed production increased at a rate of 3.7 percent per year. From 1972 to 1975 gross production and marketed production declined at annual rates of 5.8 percent and 4.7 percent, respectively. Quantities of gas vented and flared and used for pressure maintenance have declined since 1963, resulting in an increase in marketed production as a portion of gross production. Marketed production represented 78.5 percent of gross production in 1952 and 93.7 percent in 1975.

Marketed production of natural gas includes gas consumed in the state, quantities exported, the net change in underground storage, and gas unaccounted for. The greatest portion (over 50 percent) of Texas marketed gas production has historically been consumed, although a major portion (over 40 percent) has been exported. From 1952 to 1973, consumption increased at an annual rate of 4.1 percent, then declined at a rate of 7.2 percent

NATURAL GAS DISPOSITION

annually from 1973 to 1975. In recent years, consumption has constituted a greater share of marketed production: 58.5 percent in 1975 compared to 54.6 percent in 1970 and 52.4 percent in 1952.

Consumption includes gas delivered to consumers, pipeline fuel and field use of natural gas. The year 1973 was the peak for total consumption and each consumption category except electric utilities. The portion of consumption delivered to consumers increased from 61.6 percent in 1952 to 72.5 percent in 1973, then decreased to 70.8 percent in 1975.

The most significant trend in the disposition of natural gas production is the increasing portion of production delivered to consumers. In 1952, 25.3 percent of gross production was delivered to consumers, compared to 38.8 percent in 1975. Awareness of the desirability of natural gas as a clean fuel and its value in the energy market have led to the reduction of waste and conservation efforts. Decreasing quantities vented and flared, unaccounted for, and used for pressure maintenance have released supplies for use by final consumers.

DISPOSITION OF NATURAL GAS PRODUCTION
(Million Cubic Feet)

Year	Disposition			Total Withdrawals of Natural Gas
	Vented and Flared	Repressuring	Marketed Production	
1952	4147805	784892	354103	5286800
1953	4383158	779054	296788	5459000
1954	4551232	840070	228698	5620000
1955	4730798	834677	270525	5836000
1956	4999889	720905	268206	5989000
1957	5156215	724615	220170	6101000
1958	5178073	743409	161518	6083000
1959	5718993	877487	154520	6751000
1960	5892704	941004	131192	6964900
1961	5963605	930984	125511	7020100
1962	6080210	989066	129524	7198800
1963	6205034	1114288	132978	7452300
1964	6525649	978964	117387	7622000
1965	6636555	1001173	102872	7740600
1966	6953790	871427	109646	7934863
1967	7188900	973206	129403	8291509
1968	7495414	946090	124584	8566088
1969	7853199	950096	111499	8914794
1970	8357716	940505	100305	9398526
1971	8550705	897717	70222	9518644
1972	8657840	832808	59821	9550469
1973	8513850	739962	36133	9289945
1974	8170798	653815	34431	8859044
1975	7485764	471714	31295	7988773
1976	7192381 *	443672 *	30402 *	7666455 *

*Preliminary data.

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS DISPOSITION

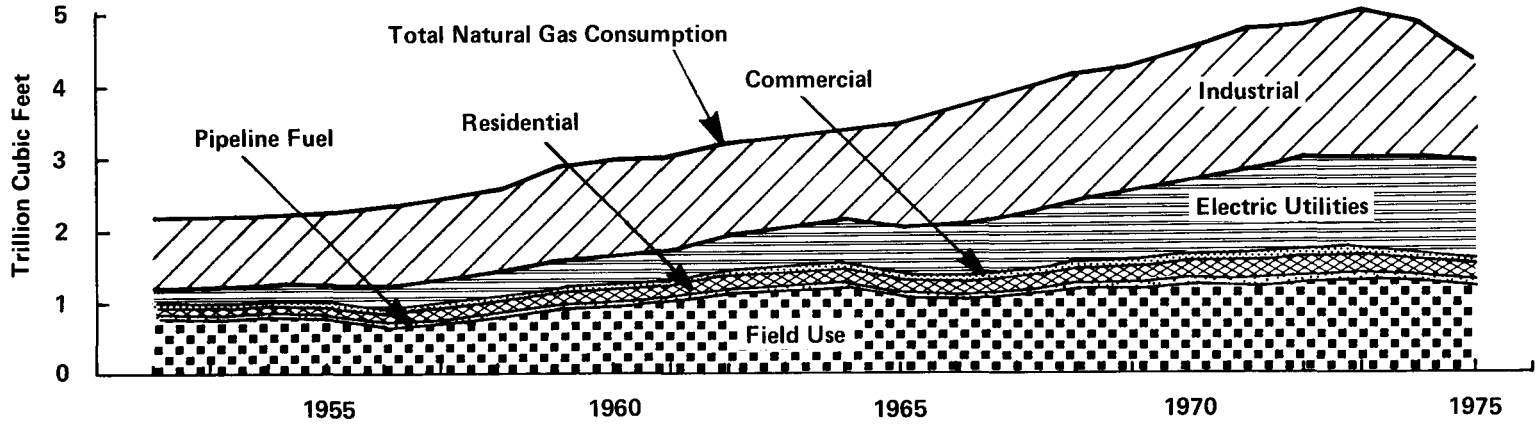
DISPOSITION OF MARKETED PRODUCTION OF NATURAL GAS
(Million Cubic Feet)

Year	Disposition				Marketed Production
	Change in Underground Storage	Unaccounted For	Net Interstate Movements (Exports)	Consumption	
1952	-558	41956	1931307	2175100	4147805
1953	-1864	52693	2138157	2194172	4383158
1954	1275	42272	2309510	2198175	4551232
1955	-4154	37748	2460664	2236540	4730798
1956	-4879	46183	2634738	2323847	4999889
1957	45821	49379	2605487	2455528	5156215
1958	12937	55736	2553859	2555541	5178073
1959	8074	41699	2803625	2865595	5718993
1960	1261	60725	2849551	2981167	5892704
1961	8504	32356	2891831	3030914	5963605
1962	4165	36114	2829963	3209968	6080210
1963	1069	43913	2846215	3313837	6205034
1964	4391	60418	3083747	3377093	6525649
1965	9451	45625	3098658	3482821	6636555
1966	9556	67770	3166749	3709715	6953790
1967	11069	54449	3204452	3918930	7188900
1968	-2645	21293	3323253	4153513	7495414
1969	3361	17167	3507970	4324701	7853199
1970	-924	54247	3745020	4559373	8357716
1971	2398	84859	3650432	4813016	8550705
1972	39982	-6949	3742066	4882741	8657840
1973	1404	34394	3390531	5087521	8513850
1974	-604	29284	3229637	4912481	8170798
1975	3532	24446	3077838	4379948	7485764

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS DISPOSITION

CONSUMPTION OF NATURAL GAS



Total consumption of natural gas increased at an annual rate of 4.1 percent from 1952 to 1973, then declined 3.4 percent in 1974 and 10.8 percent in 1975. Consumption by final consumers (residential, commercial, industrial, electric utilities and other) in 1975 constituted 70.8 percent of the total consumption, increasing at a rate of 4.9 percent from 1952 to 1973 and declining at a rate of 8.3 percent from 1973 to 1975. In addition to gas delivered to consumers, there are two other consumption categories: pipeline fuel, and field use.

Field use of natural gas includes extraction loss, which is the shrinkage in volume occurring when natural gas liquids are removed from gas at a processing plant, and lease and plant fuel. Field use increased at a rate of 2.4 percent per year from 1952 to 1973 and declined at an annual rate of 3.8 percent from 1973 to 1975. This use of natural gas is the least discretionary of the consumption categories; changes are closely aligned with levels of production.

Pipeline fuel increased at an annual rate of 4.4 percent per year from 1952 to 1973, and declined at a rapid rate of 11.4 percent annually from 1973 to 1975. The tight natural gas supply situation in the United States led to conservation in this fuel use in recent years.

Electric utilities' consumption of natural gas has increased at a more rapid rate than has consumption by other final consuming sectors. From 1952 to 1973, electric utility consumption increased at an annual rate of 8.6 percent; residential consumption increased at a rate of 4.2 percent per year; commercial, 3.6 percent; and industrial, also 3.6 percent. From 1973 to 1975, consumption by electric utilities continued to increase but at a slower rate of 3.6 percent per year while other sector consumption declined. Industrial use of natural gas declined at a rapid 17.1 percent annual rate, commercial use declined at a rate of 11.0 percent per year, and residential use declined at a slow rate of 1.9 percent annually.

An extreme shift occurred in the distribution patterns of gas delivered to consumers over the 1952-1975 period. In 1952, industrial use constituted 72.1 percent of the total gas delivered to consumers and consumption by electric utilities constituted 16.7 percent. By 1975, the industrial sector's share declined to 45.1 percent while the electric utilities' portion increased to 43.7 percent. This was due primarily to rapidly increasing demand for electricity, conservation by industry, and the recent economic recession.

NATURAL GAS DISPOSITION

CONSUMPTION OF NATURAL GAS
(Million Cubic Feet)

Year	Natural Gas Use					
	Field Use					
	Extraction Loss	Lease and Plant Fuel	Total	Pipeline Fuel	Delivered To Consumers	Total Consumption
1952	--	--	793366	42067	1339667	2175100
1953	--	--	777594	48650	1367928	2194172
1954	--	--	806677	40439	1351059	2198175
1955	--	--	772338	41714	1422488	2236540
1956	--	--	651373	72609	1599865	2323847
1957	--	--	715204	45430	1694894	2455528
1958	--	--	803338	56346	1695857	2555541
1959	--	--	916410	52982	1896203	2865595
1960	--	--	960121	52295	1968751	2981167
1961	--	--	1023303	62800	1944811	3030914
1962	--	--	1124754	61208	2024006	3209968
1963	--	--	1175807	65583	2072447	3313837
1964	--	--	1208747	66254	2102092	3377093
1965	--	--	1068562	67532	2346727	3482821
1966	--	--	1030044	67576	2612095	3709715
1967	--	--	1078742	72353	2767835	3918930
1968	457117	711720	1168837	85067	2899609	4153513
1969	447325	741902	1189227	86302	3049172	4324701
1970	466016	769500	1235516	96229	3227628	4559373
1971	448288	784773	1233061	99091	3480864	4813016
1972	470105	802112	1272217	104378	3506146	4882741
1973	466143	828139	1294282	104587	3688652	5087521
1974	448993	817194	1266187	93799	3552495	4912481
1975	435571	763107	1198678	82121	3099149	4379948

SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

NATURAL GAS DELIVERED TO CONSUMERS
(Million Cubic Feet)

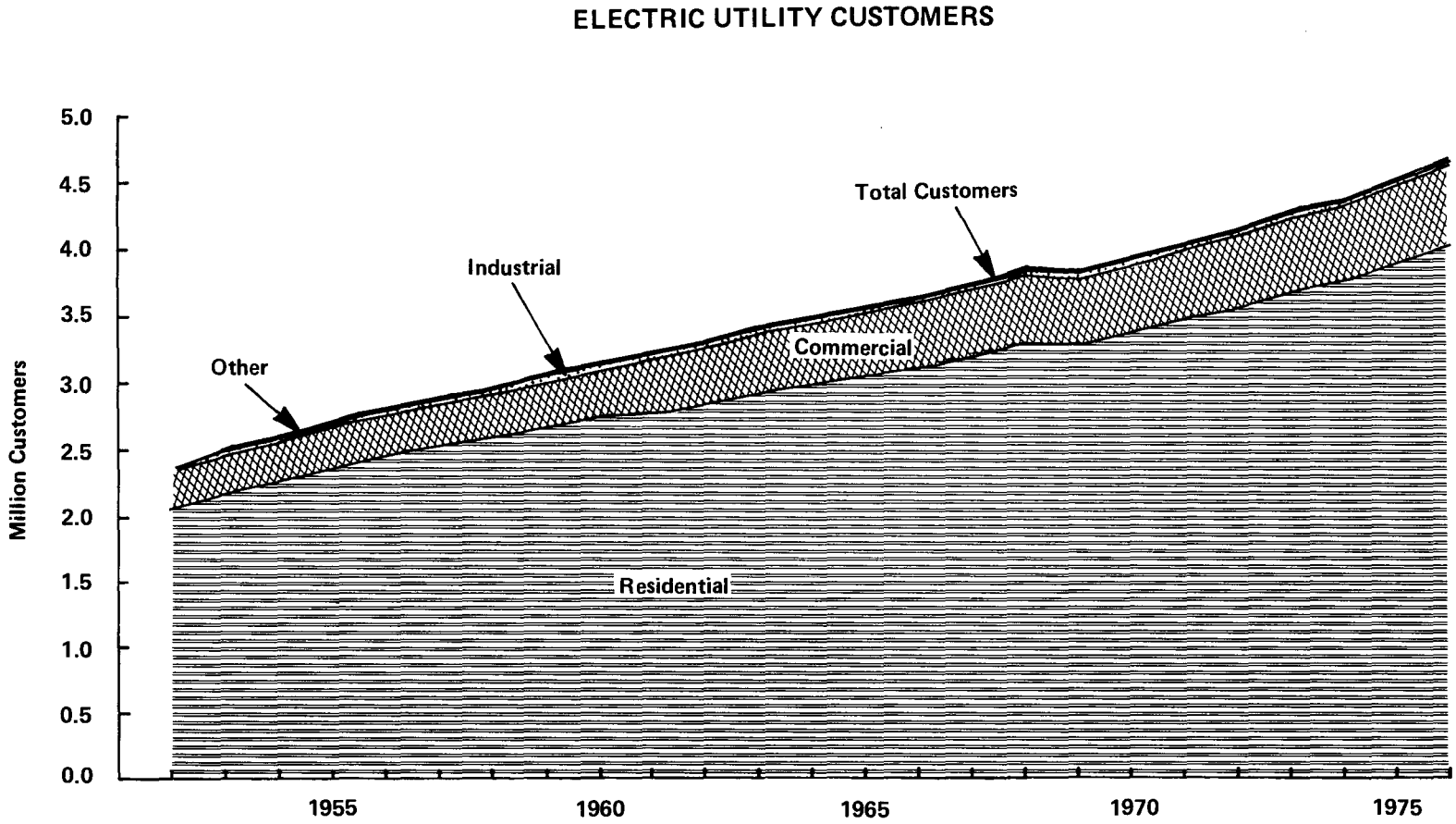
Year	Type of Consumer					Total
	Residential	Commercial	Industrial	Electric Utilities	Other Consumers*	
1952	101276	48756	966128	223507	--	1339667
1953	104610	45429	966224	251665	--	1367928
1954	112778	46646	934484	257151	--	1351059
1955	124379	53245	971584	273280	--	1422488
1956	129476	53084	1095666	321639	--	1599865
1957	162148	56302	1137165	339279	--	1694894
1958	167663	62194	1114681	351319	--	1695857
1959	169015	66197	1281708	379283	--	1896203
1960	171670	59728	1330043	407310	--	1968751
1961	166188	62334	1295486	420803	--	1944811
1962	196433	67868	1268521	491184	--	2024006
1963	198263	74975	1245231	553978	--	2072447
1964	193093	81350	1221924	605725	--	2102092
1965	182590	80612	1444922	638603	--	2346727
1966	196355	88470	1626033	701237	--	2612095
1967	201407	90614	1701781	774033	--	2767835
1968	211763	91010	1744663	852173	--	2899609
1969	220728	92071	1714167	973423	48783	3049172
1970	232189	94471	1789533	1059816	51619	3227628
1971	237387	97702	1933233	1167821	44721	3480864
1972	240662	94036	1839243	1285113	47092	3506146
1973	241478	103374	2031210	1260894	51696	3688652
1974	222603	91008	1860637	1334837	43410	3552495
1975	232320	81836	1396790	1353290	34913	3099149

*Includes deliveries to municipalities and public authorities for institutional heating, street lighting, etc.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes), (Federal Power Commission data).

CHAPTER V

ELECTRIC AND GAS UTILITY INDUSTRY DATA

ELECTRIC UTILITY INDUSTRY



The total number of electric utility customers increased from 2.4 million in 1952 to 4.7 million in 1976, a 2.9 percent annual rate of increase.

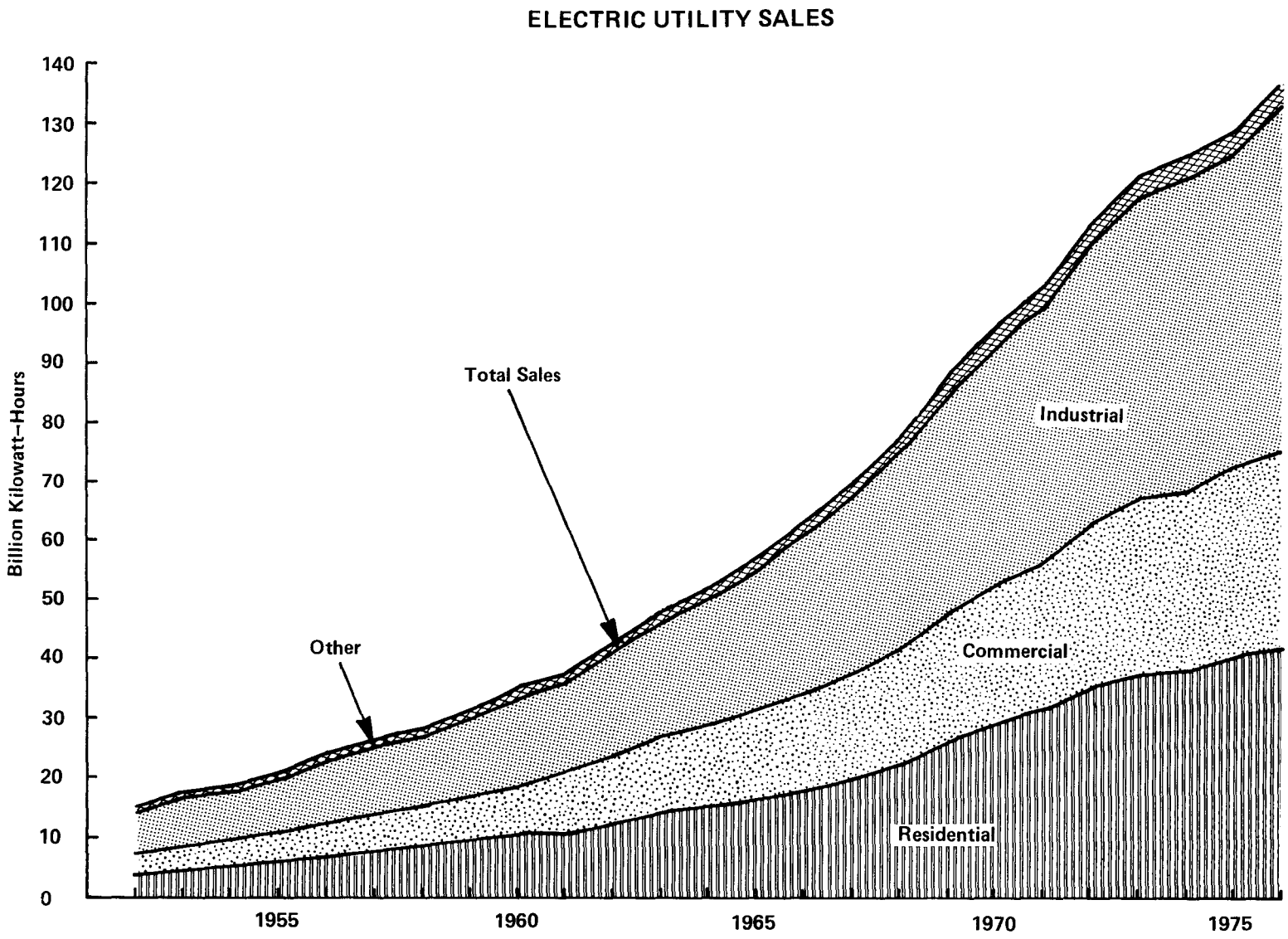
Residential customers constituted 86 percent of the total in 1976 and increased at an annual rate of 2.8 percent from 1952 to 1976. The number of industrial customers increased at a rate of 3.5 percent per year in the 24-year period and constituted 1 percent of the total number of electric utility customers in 1976.

ELECTRIC UTILITY CUSTOMERS, AS OF DECEMBER 31

Year	Type of Customer				Total
	Residential	Commercial	Industrial	Other*	
1952	2060947	263985	19032	11205	2355169
1953	2177414	288745	19655	12171	2497985
1954	2263682	296363	22315	13033	2595393
1955	2362772	304375	24096	13948	2705191
1956	2453279	309026	24098	14033	2800436
1957	2522226	316910	27027	15851	2882014
1958	2588300	322089	29395	15971	2955755
1959	2675918	330617	29209	16750	3052494
1960	2742949	344732	29117	18258	3135056
1961	2764457	403540	29605	15813	3213415
1962	2834465	411901	29932	17611	3293909
1963	2922202	428296	28503	17671	3396672
1964	2982057	444598	29307	17338	3473300
1965	3054245	459055	30551	18242	3562093
1966	3110402	469749	31284	19537	3630972
1967	3188516	486859	32696	19723	3727794
1968	3287029	506145	33898	20287	3847359
1969	3284119	484179	34249	17472	3820019
1970	3373490	493815	35194	18237	3920736
1971	3471751	511674	36344	18672	4038441
1972	3553070	531719	37565	19397	4141751
1973	3673061	538709	41426	19700	4272896
1974	3756738	546171	42272	20437	4365618
1975	3894210	567795	41086	21260	4524351
1976	4027048	592317	42958	21741	4684064

*Includes street and highway lighting, other public authorities, and interdepartmental customers.
SOURCE: Edison Electric Institute, *Statistical Year Book of the Electric Utility Industry* (annual volumes).

ELECTRIC UTILITY INDUSTRY



Total electric utility sales increased at a rate of 9.7 percent annually from 1952 to 1976. Sales to the residential sector increased most rapidly, averaging a 10.6 percent increase percent annually in that period. In 1976, industrial sales constituted 42 percent of the total; residential, 30 percent; and commercial, 25 percent.

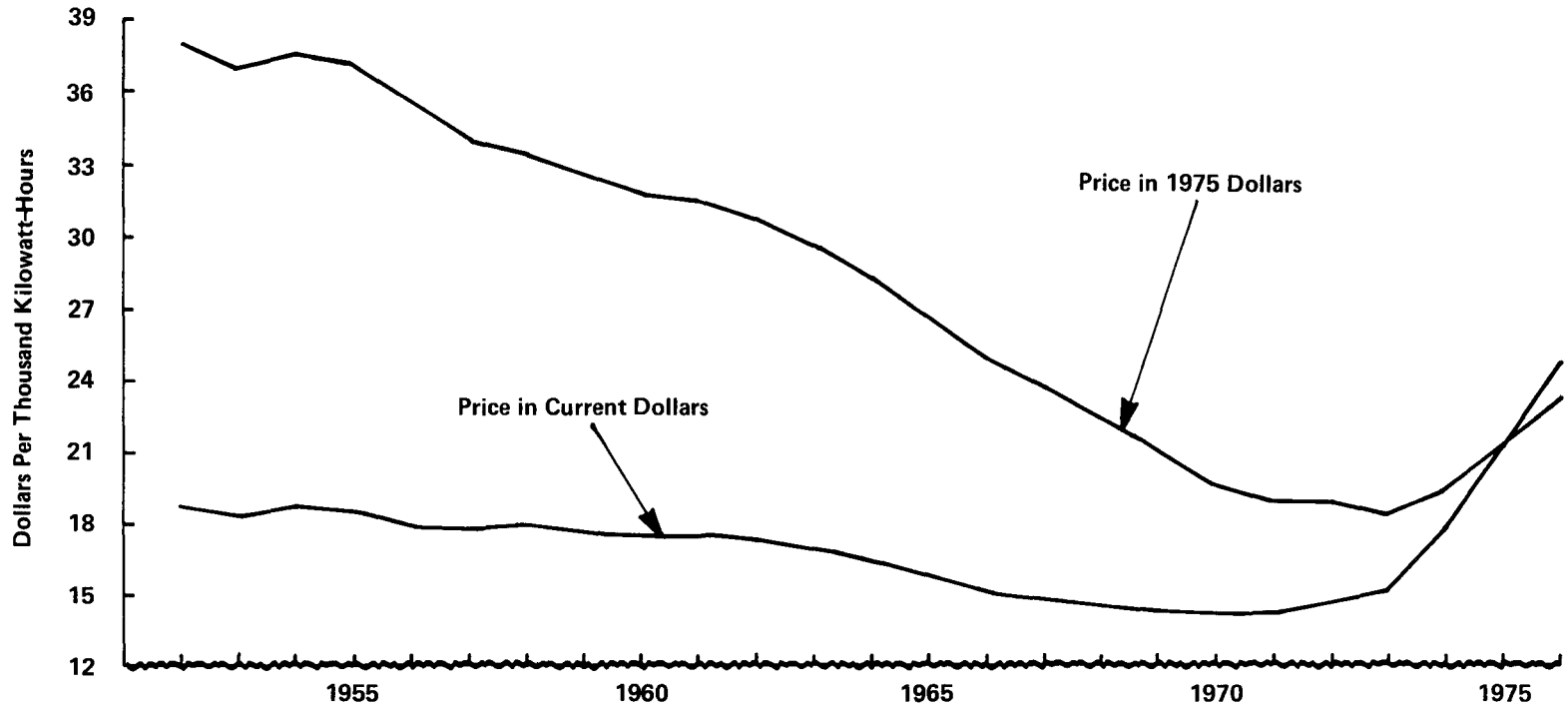
ELECTRIC UTILITY SALES
(Million Kilowatt-Hours)

Year	Type of Customer				Total
	Residential	Commercial	Industrial	Other	
1952	3687	3449	6833	928	14897
1953	4432	4044	7915	1008	17399
1954	5143	4481	7795	1099	18518
1955	5831	4929	8781	1160	20701
1956	6803	5484	10309	1327	23923
1957	7599	5932	11509	1362	26402
1958	8565	6499	11606	1472	28142
1959	9461	7246	13048	1592	31347
1960	10497	7840	14548	1937	34822
1961	10468	10490	14590	1719	37267
1962	12425	10990	17397	1907	42719
1963	14123	12456	19112	2087	47778
1964	15245	13440	21136	2198	52019
1965	16564	14829	23412	2310	57115
1966	17799	16097	26803	2455	63154
1967	19720	17703	29579	2664	69666
1968	22094	19309	33322	2754	77479
1969	25997	21207	37255	2995	87454
1970	28883	23137	40098	3127	95245
1971	31299	24753	42668	3353	102073
1972	35106	27532	46573	3613	112824
1973	37147	29682	50308	3620	120757
1974	37849	30108	52448	3663	124068
1975	40180	32178	52243	3769	128370
1976	41421	33723	57335	3971	136450

SOURCE: Edison Electric Institute, *Statistical Year Book of the Electric Utility Industry* (annual volumes).

ELECTRIC UTILITY INDUSTRY

AVERAGE ELECTRICITY PRICE



The average price paid to electric utilities for 1,000 kilowatt-hours decreased from $38.03 in 1952 to $18.90 in 1972 (in constant 1975 dollars). This decrease amounted to a 3.4 percent annual rate of decline. From 1972 to 1976, the average price increased at an annual rate of 5.4 percent, reaching $23.32 per 1,000 kilowatt-hours in 1976 (in constant 1975 dollars).

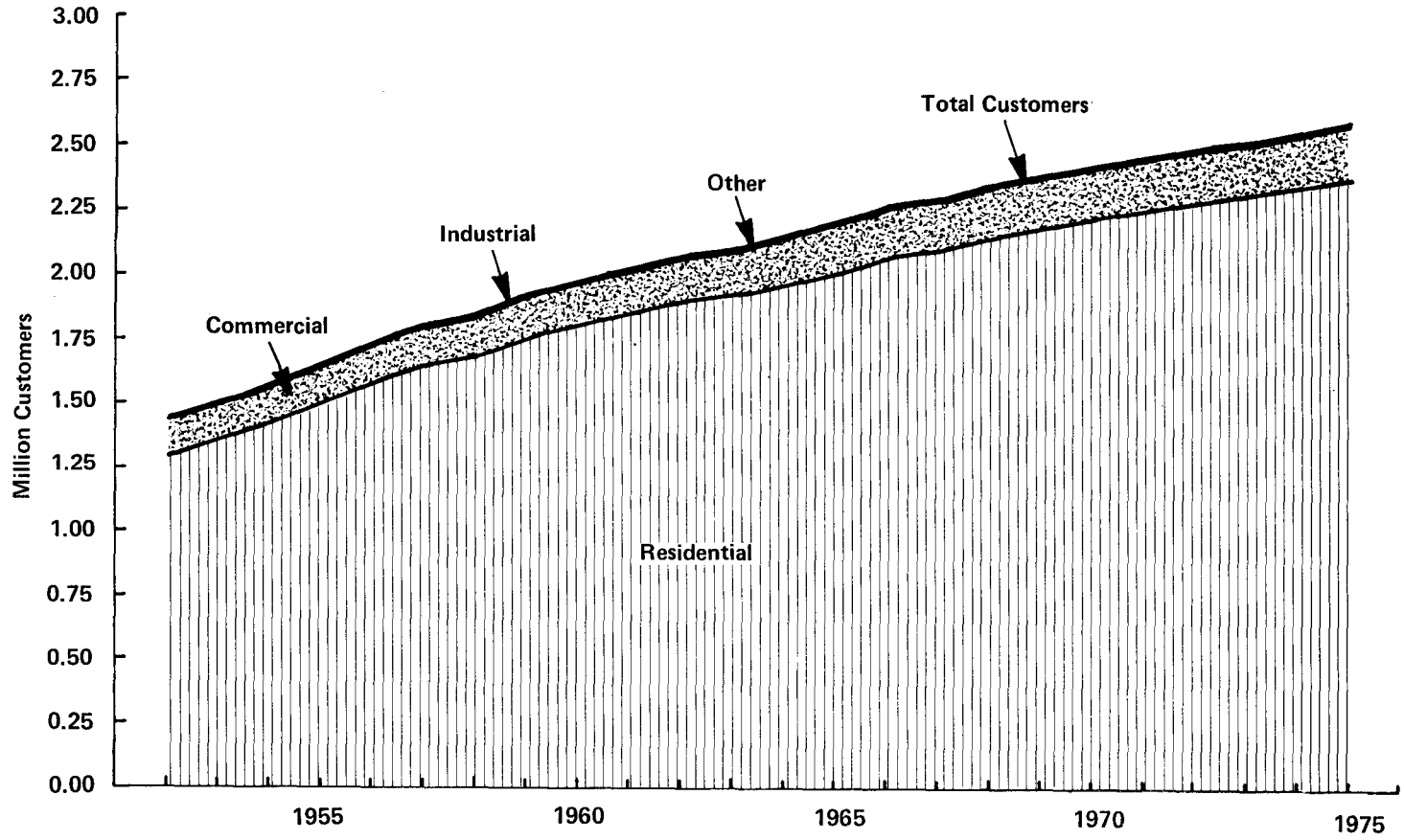
ELECTRIC UTILITY REVENUES
(Thousand Dollars)

Year	Type of Customer				Total
	Residential	Commercial	Industrial	Other	
1952	121148	81010	66480	10697	279335
1953	138314	92706	76903	11723	319646
1954	154871	100653	78479	12964	346967
1955	171115	109675	87503	14030	382323
1956	192073	120652	100154	16203	429082
1957	209825	129061	111519	18161	468566
1958	230210	139275	116085	19118	504688
1959	249470	152843	130025	20883	553221
1960	272101	168215	144064	23489	607869
1961	274589	214010	142471	19300	650370
1962	314436	229099	169270	23392	736197
1963	346172	250622	179776	26673	803243
1964	364026	263667	192130	27806	847629
1965	379015	278877	206271	29563	893726
1966	399096	293559	227190	30814	950659
1967	431170	316159	244812	34751	1026892
1968	475417	341061	272021	36206	1124705
1969	542858	370316	298125	39300	1250599
1970	591185	398422	321342	41832	1352781
1971	639375	427188	342289	45131	1453983
1972	728228	487002	390761	50991	1656982
1973	785430	533211	461964	51471	1832076
1974	910919	624669	606477	61183	2203248
1975	1096830	779960	777577	80535	2734902
1976	1290590	932337	1057697	95026	3377650

SOURCE: Edison Electric Institute, *Statistical Year Book of the Electric Utility Industry* (annual volumes).

GAS UTILITY INDUSTRY

GAS UTILITY CUSTOMERS



From 1952 to 1975, the number of residential customers of gas distributing plants increased at an annual rate of 2.7 percent, rising from 1.3 million customers in 1952 to 2.4 million in 1975. Residential customers constituted 91.4 percent of the total customers (not including customers of municipally owned plants) in 1975.

Industrial customers constitute a minute portion of the total. From 1952 to 1975, the number of industrial customers slowly increased at a rate of 0.9 percent per year and decreased 29 percent from 1974 to 1975.

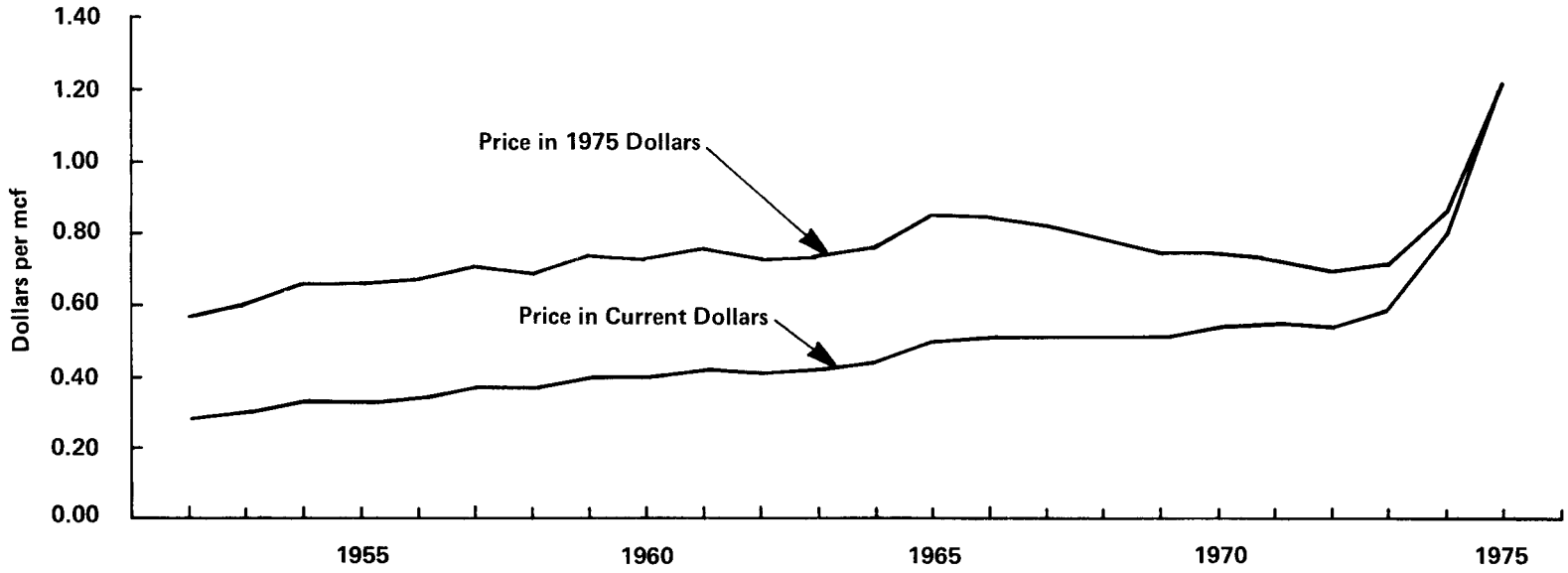
GAS UTILITY CUSTOMERS*

Year	Type of Customer				Total
	Residential	Commercial	Industrial	Other	
1952	1298927	138178	5963	3677	1446745
1953	1362381	139344	5934	2933	1510592
1954	1430907	142876	6182	2944	1582909
1955	1507201	148282	6549	3148	1665180
1956	1584009	152487	6735	3809	1747040
1957	1650027	157900	6903	4182	1819012
1958	1686386	161499	6958	3329	1858172
1959	1755817	166404	7266	2723	1932210
1960	1805843	170944	7480	2997	1987264
1961	1848612	174576	7768	3225	2034181
1962	1896546	177268	7737	3534	2085085
1963	1923028	179361	8121	3599	2114109
1964	1968251	185808	8163	3956	2166178
1965	2017593	189848	8391	3176	2219008
1966	2074443	195400	8695	3401	2281939
1967	2101972	193626	10782	3501	2309881
1968	2150779	200661	8978	3856	2364274
1969	2190917	201976	9064	3929	2405886
1970	2225605	202272	9197	4138	2441212
1971	2261264	202879	9775	3665	2477583
1972	2290883	204032	9919	5194	2510028
1973	2316717	204925	11634	5496	2538772
1974	2350743	210347	10404	2885	2574379
1975	2387069	213265	7354	4287	2611975

*Does not include customers of municipally owned gas utilities.
SOURCE: Texas Railroad Commission, Gas Utilities Division, *Annual Report* (annual volumes).

GAS UTILITY INDUSTRY

AVERAGE NATURAL GAS PRICE



Measured in constant 1975 dollars, the average natural gas price paid to distributing plants increased from 56.8 cents per mcf in 1952 to 71.4 cents per mcf in 1973, a 1.1 percent annual rate of increase. By 1975 the average price rose to $1.22 per mcf. This amounted to a 30.7 percent annual rate of increase from 1973 to 1975.

AVERAGE PRICE PAID BY CUSTOMERS OF GAS UTILITIES*
(Dollars per mcf)

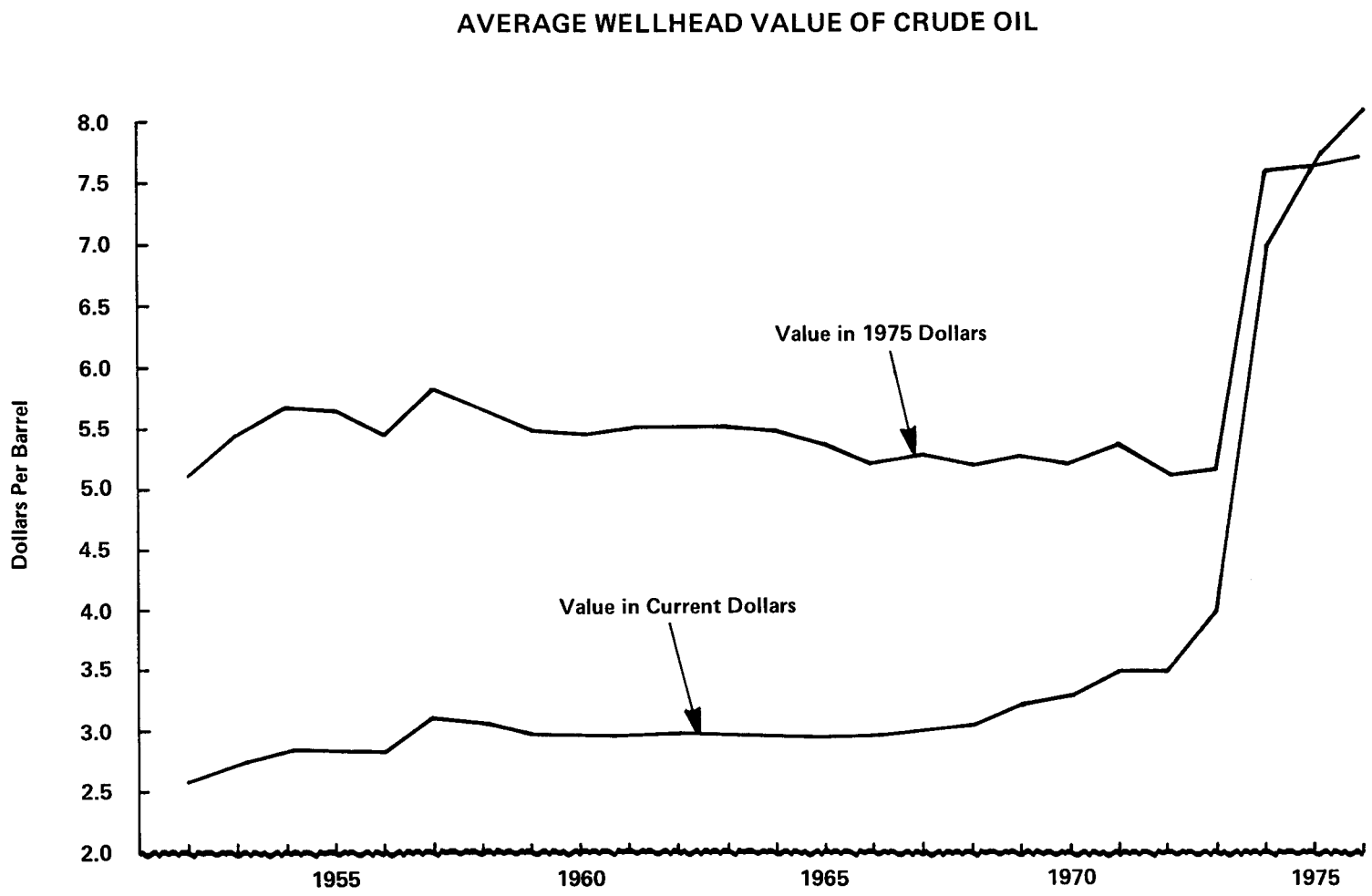
Year	Type of Customer				Average
	Residential	Commercial	Industrial	Other	
1952	.66	.45	.12	.17	.28
1953	.64	.49	.14	.19	.30
1954	.74	.50	.14	.19	.33
1955	.73	.50	.15	.21	.33
1956	.75	.51	.16	.22	.34
1957	.76	.53	.17	.23	.37
1958	.76	.53	.18	.26	.37
1959	.78	.55	.18	.30	.40
1960	.80	.56	.19	.27	.40
1961	.83	.58	.20	.28	.42
1962	.79	.56	.21	.27	.41
1963	.85	.57	.22	.28	.42
1964	.85	.58	.22	.30	.44
1965	.87	.57	.24	.31	.50
1966	.86	.57	.24	.32	.51
1967	.88	.57	.25	.31	.51
1968	.88	.56	.25	.31	.51
1969	.91	.56	.25	.33	.51
1970	.97	.53	.28	.32	.54
1971	1.03	.62	.28	.38	.55
1972	1.04	.56	.29	.37	.54
1973	1.06	.65	.33	.43	.59
1974	1.19	.88	.58	.69	.79
1975	1.51	1.32	1.02	1.07	1.22

*Does not include prices paid by customers of municipally owned gas utilities.
SOURCE: Texas Railroad Commission, Gas Utilities Division, *Annual Report* (annual volumes).

CHAPTER VIII.

ENERGY PRICES

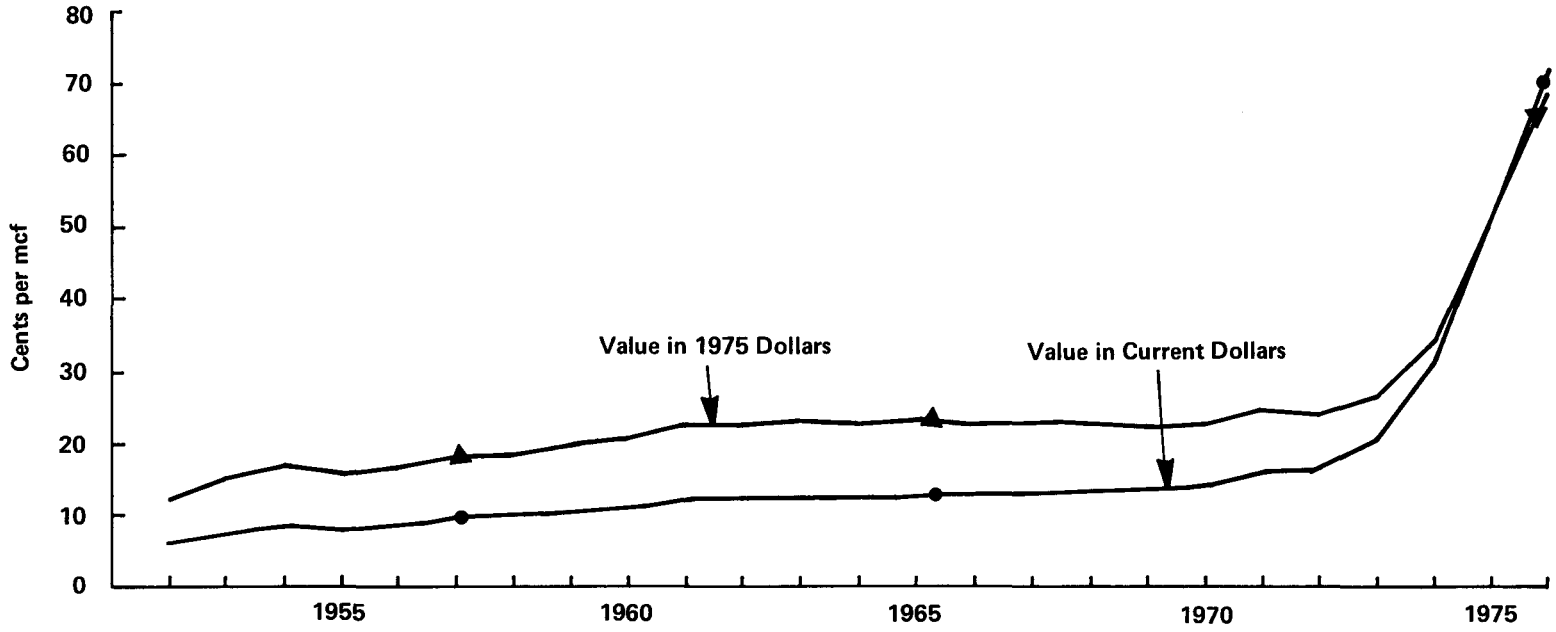
AVERAGE WELLHEAD VALUES



The average wellhead value of crude oil increased only 7 cents per barrel (in constant 1975 dollars) in the 21-year period from 1952 to 1973. From 1973 to 1975 the value increased at a rapid rate of 14.3 percent per year, from $5.16 per barrel in 1973 to $7.71 per barrel in 1975.

AVERAGE WELLHEAD VALUES

AVERAGE WELLHEAD VALUE OF NATURAL GAS



From 1952 to 1973 the average wellhead value of natural gas (in constant 1975 dollars) increased at a moderate rate of 3.4 percent per year. A rapid rise in the average value from 26.5 cents per mcf in 1973 to 68.6 cents per mcf in 1976 amounted to a 37.4 percent annual rate of increase.

AVERAGE WELLHEAD VALUES

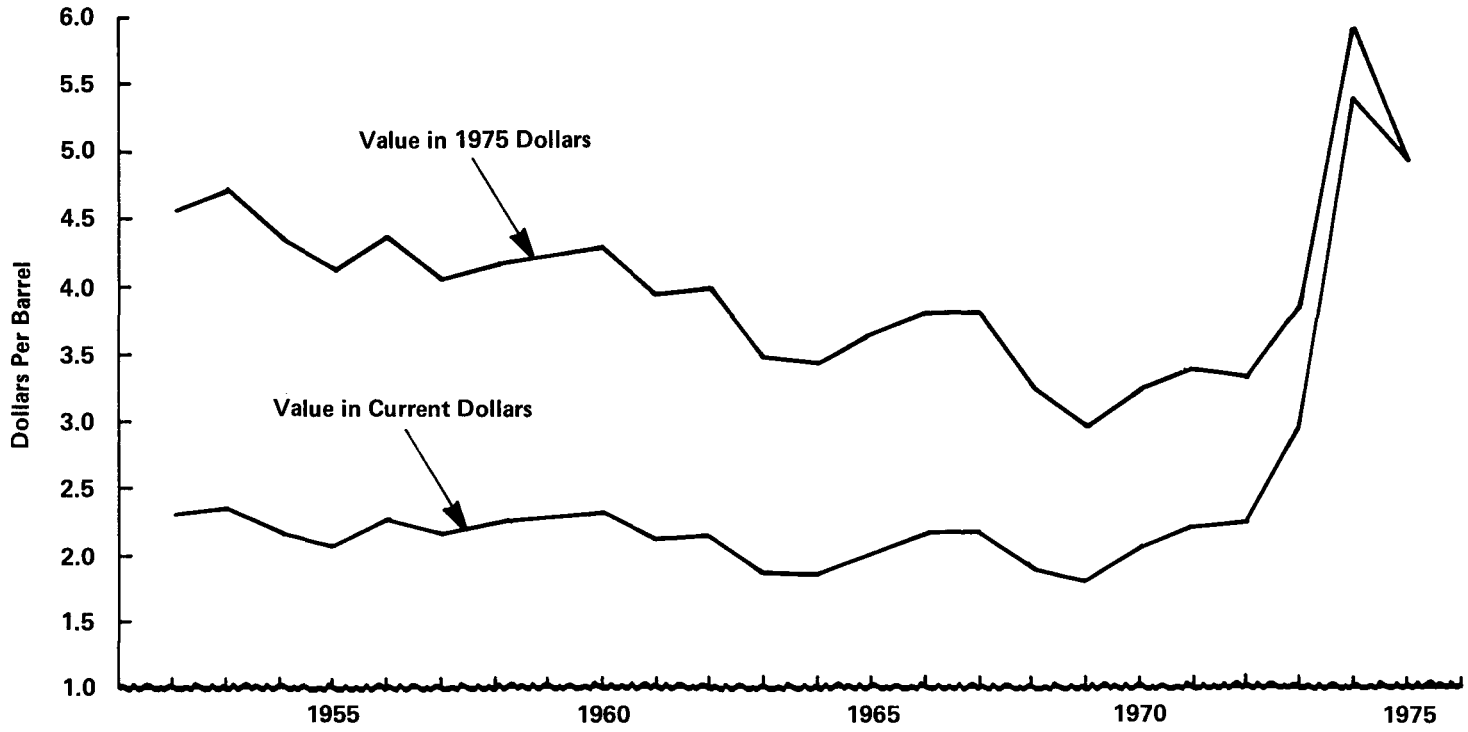
AVERAGE WELLHEAD VALUE OF CRUDE OIL AND NATURAL GAS

Year	Crude Oil (Dollars/ Barrel)	Natural Gas (Cents/mcf)		
		Total Sales	Interstate Sales	Intrastate Sales
1952	2.58	6.2	--	--
1953	2.73	7.6	8.4	6.4
1954	2.84	8.5	9.3	7.3
1955	2.84	8.0	9.9	4.9
1956	2.83	8.7	10.4	5.8
1957	3.11	9.7	10.8	7.8
1958	3.06	10.0	11.5	7.3
1959	2.98	10.8	12.4	8.2
1960	2.96	11.3	13.6	7.8
1961	2.97	12.3	14.4	9.1
1962	2.99	12.3	14.6	9.2
1963	2.97	12.5	14.8	9.5
1964	2.96	12.4	14.9	9.0
1965	2.96	12.9	15.0	10.4
1966	2.97	13.0	15.2	10.4
1967	3.01	13.2	15.4	10.6
1968	3.04	13.5	15.6	11.1
1969	3.21	13.7	15.9	11.2
1970	3.28	14.4	16.7	12.1
1971	3.48	16.1	17.9	14.4
1972	3.48	16.4	19.1	13.9
1973	3.98	20.4	21.4	19.5
1974	6.95	31.1	26.9	34.7
1975	7.64	51.9	38.3	62.8
1976	8.07	71.8	--	--

SOURCES: Crude Oil and Total Natural Gas Sales: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes). Interstate Sales: Federal Power Commission, *Sales by Producers of Natural Gas to Interstate Pipeline Companies,* 1972-75.

AVERAGE WELLHEAD VALUES

AVERAGE WELLHEAD VALUE OF NATURAL GAS LIQUIDS



Measured in constant 1975 dollars the average wellhead value of natural gas liquids declined at an annual rate of 1.6 percent from 1952 to 1972. The average value increased at a rate of 14.3 percent per year from 1972 to 1975, although prices declined from $5.91 per barrel in 1974 to $4.96 per barrel in 1975.

AVERAGE WELLHEAD VALUES

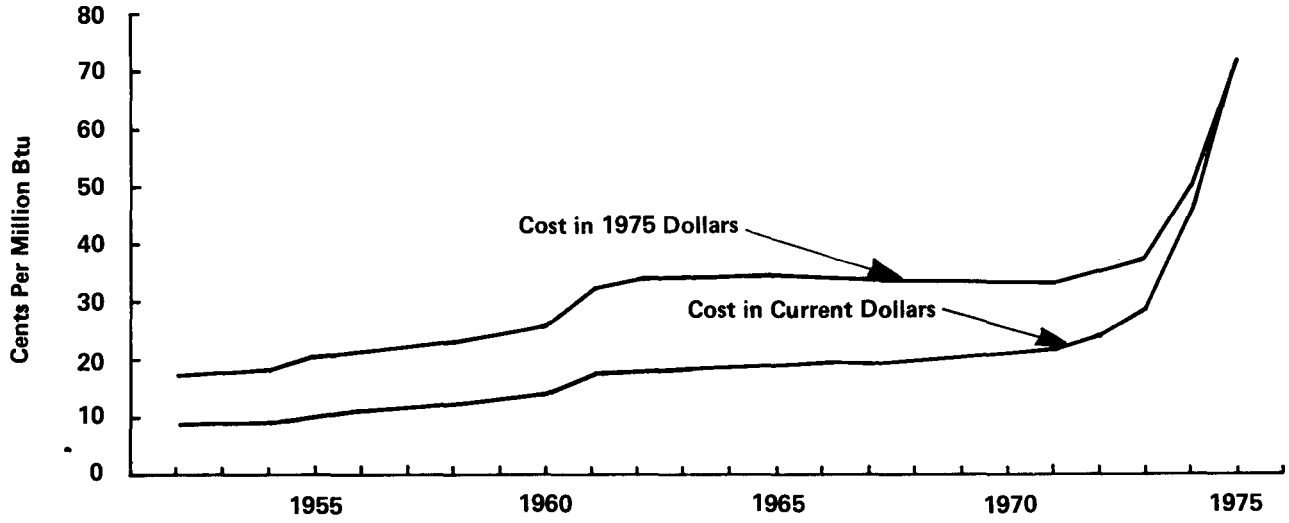
AVERAGE VALUE OF NATURAL GAS LIQUIDS AND ETHANE*
(Dollars per Barrel)

Year	LPG & Ethane	Natural Gasoline & Isopentane	Plant Condensate	Finished Gasoline & Naphtha	Other Products	Total
1952	--	--	--	--	--	2.31
1953	--	--	--	--	--	2.35
1954	--	--	--	--	--	2.18
1955	--	--	--	--	--	2.07
1956	--	--	--	--	--	2.27
1957	--	--	--	--	--	2.16
1958	1.68	2.86	--	3.60	2.94	2.25
1959	1.75	2.85	--	3.71	4.53	2.30
1960	1.88	2.98	--	3.73	2.76	2.33
1961	1.63	2.86	--	2.95	3.02	2.13
1962	1.59	3.05	--	3.32	2.95	2.16
1963	1.33	2.69	--	3.26	2.91	1.88
1964	1.27	2.72	3.07	2.73	3.09	1.86
1965	1.47	2.81	2.94	3.19	3.23	2.02
1966	1.72	2.77	3.28	3.15	3.19	2.17
1967	1.81	2.77	3.19	3.28	3.23	2.19
1968	1.47	2.69	2.98	3.82	2.65	1.91
1969	1.22	2.94	3.11	3.82	2.34	1.81
1970	1.64	2.86	3.15	4.03	1.85	2.05
1971	1.81	3.07	3.32	4.20	2.31	2.22
1972	1.89	3.15	3.32	4.54	2.18	2.26
1973	2.66	3.71	3.90	5.01	3.23	2.98
1974	4.70	7.18	6.80	8.32	5.50	5.41
1975	4.54	6.18	5.42	7.95	5.61	4.96

*Value at natural gas processing plants.
SOURCE: U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook* (annual volumes).

ELECTRIC UTILITY FUEL COSTS

AVERAGE ELECTRIC UTILITY FUEL COST



From 1952 to 1973, the average electric utility fuel cost (in constant 1975 dollars) increased at an annual rate of 3.8 percent. Rising from 37 cents per million Btu in 1973 to 72 cents per million Btu in 1975, prices increased at a rate of 38.7 percent annually in the two-year period. Higher wellhead prices caused the recent increases in fuel costs to electric utilities.

ELECTRIC UTILITY FUEL COSTS

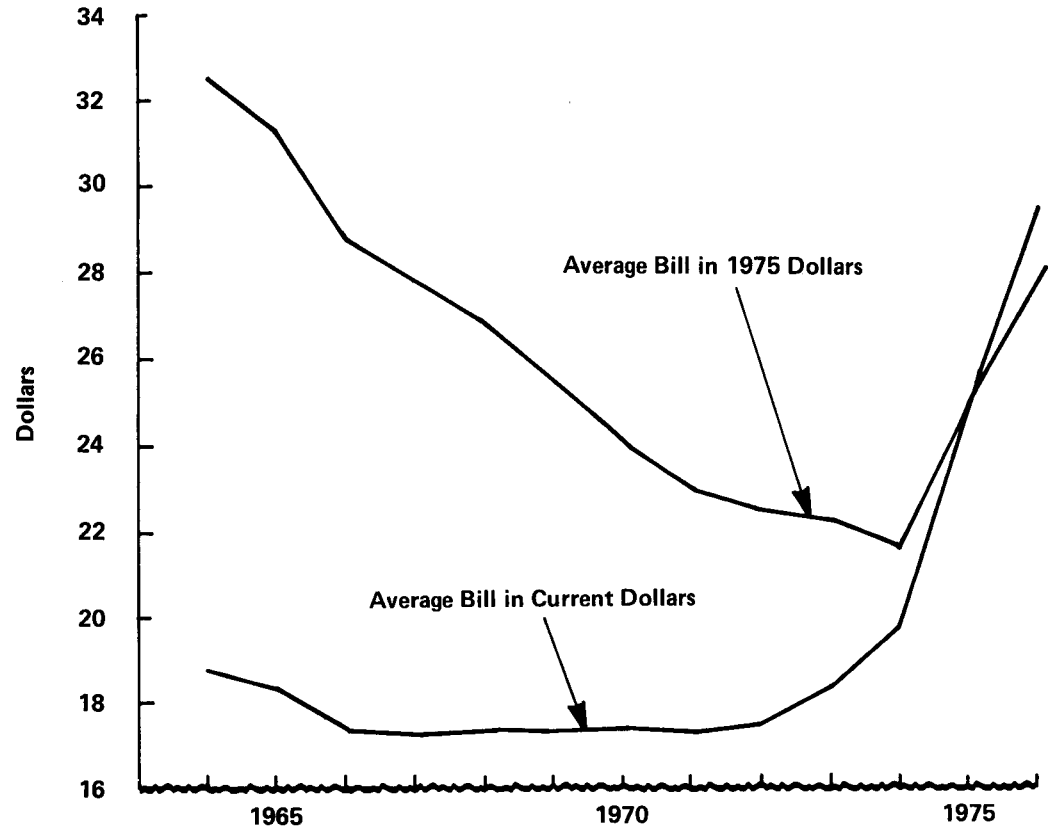
ELECTRIC UTILITY FUEL COSTS
(Dollars per Million Btu)

Year	Type of Fuel			Composite Average
	Coal	Fuel Oil	Natural Gas	
1952	--	--	--	.087
1953	--	--	--	.088
1954	--	--	--	.091
1955	--	--	--	.103
1956	--	--	--	.112
1957	--	--	--	.119
1958	--	--	--	.124
1959	--	--	--	.135
1960	--	--	--	.140
1961	--	.520	.173	.173
1962	--	.462	.183	.183
1963	--	.485	.184	.184
1964	--	.580	.187	.187
1965	--	.451	.191	.191
1966	--	.513	.193	.194
1967	--	.421	.193	.193
1968	--	.546	.197	.197
1969	--	.426	.202	.202
1970	--	.513	.209	.209
1971	.214	.544	.216	.216
1972	.216	.745	.239	.242
1973	.138	.918	.277	.288
1974	.181	1.507	.448	.458
1975	.238	1.714	.754	.719

SOURCE: Edison Electric Institute, *Statistical Year Book of the Electric Utility Industry* (annual volumes).

TYPICAL ELECTRIC BILLS

AVERAGE RESIDENTIAL ELECTRIC BILL (1,000 KWH)



Measured in constant 1975 dollars on January 1 of each year, the average residential bill for 1,000 kilowatt-hours of electricity declined 4.6 percent annually from 1964 to 1974. Prices rose at a rate of 13.7 percent per year from 1974 to 1976. The 1976 average price of $27.98 was 19.2 percent lower than the 1964 price of $34.63.

TYPICAL ELECTRIC BILLS

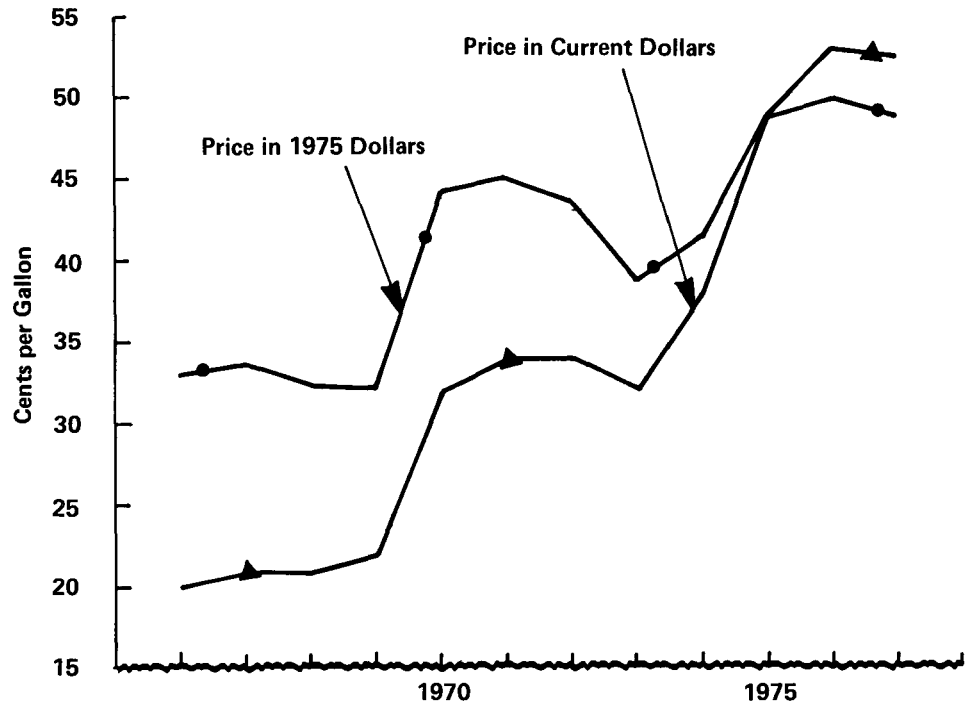
AVERAGE MONTHLY ELECTRIC BILLS, AS OF JANUARY 1
(Dollars)

Year	Residential	Commercial*		Industrial*	
		6 kw	40 kw	150 kw	1,000 kw
	1,000 kwh	750 kwh	10,000 kwh	30,000 kwh	200,000 kwh
1964	18.75	--	--	--	--
1965	18.33	26.21	212.24	--	--
1966	17.38	25.09	234.29	--	--
1967	17.27	24.89	206.61	--	--
1968	17.35	25.22	208.75	--	--
1969	17.35	25.22	208.70	552.00	2770.00
1970	17.40	25.25	209.36	554.00	2786.00
1971	17.32	25.25	210.10	557.00	2792.00
1972	17.51	25.46	211.26	560.00	2813.00
1973	18.39	26.43	220.98	588.00	3010.00
1974	19.82	27.84	235.23	632.00	3277.00
1975	24.85	32.47	295.36	809.00	4395.00
1976	29.27	35.11	335.02	931.00	5167.00

*Billing demand (kw) and monthly consumption (kwh).
SOURCE: Federal Power Commission, *Typical Electric Bills* (annual volumes).

GASOLINE PRICES

HOUSTON GASOLINE PRICE



The pump price for major-brand regular gasoline, as of the first week of each year, increased at an annual rate of 30.5 percent from 1966 to 1977 (constant 1975 dollars). Prices dropped in 1972 and 1973, probably due to federal price controls on petroleum products.

GASOLINE PRICES

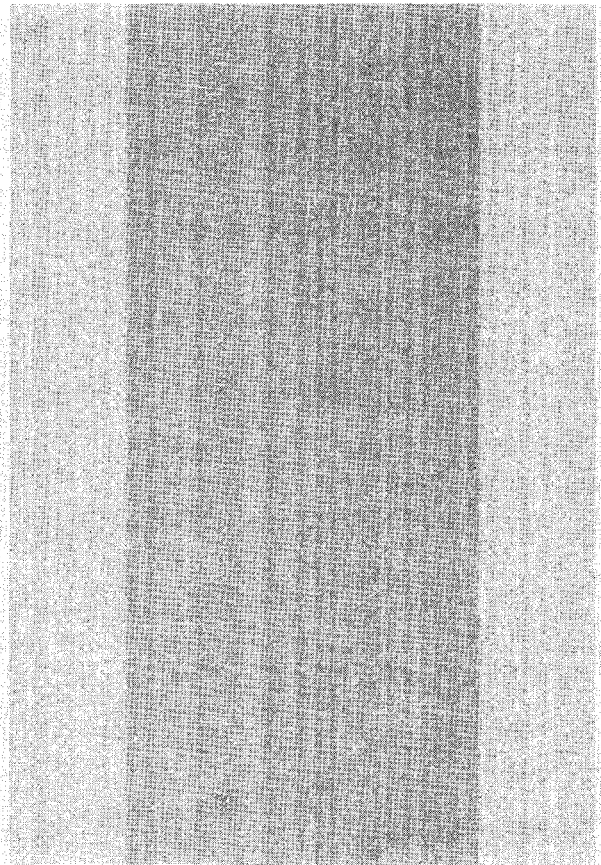
GASOLINE PRICES*
(Cents per Gallon)

Year	Houston	Dallas	Amarillo	San Antonio
1966	19.9	19.9	19.9	19.9
1967	20.9	20.9	20.9	20.9
1968	20.9	20.9	21.9	20.9
1969	21.9	21.9	21.9	21.9
1970	31.9	31.9	31.9	31.9
1971	33.9	33.9	33.9	33.9
1972	33.9	33.9	33.9	33.9
1973	31.9	31.9	33.9	31.9
1974	37.9	37.9	37.9	37.9
1975	48.6	48.6	48.1	48.1
1976	52.9	53.3	52.8	52.8
1977	52.4	52.8	52.3	51.3

*Pump price for major-brand regular, including tax. Prices as of first week in January.
SOURCE: Petroleum Publishing Company, *The Oil and Gas Journal* (weekly issues).

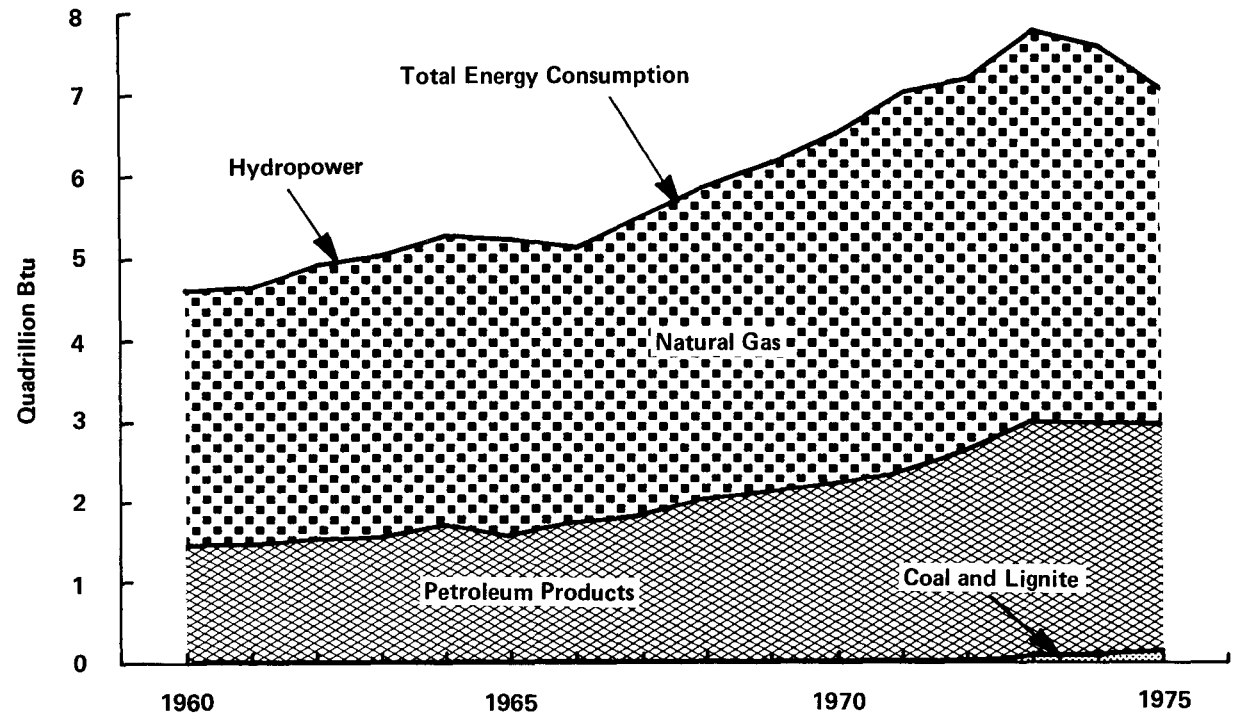
CHAPTER IX.

ENERGY CONSUMPTION



TOTAL ENERGY CONSUMPTION

ENERGY CONSUMPTION, BY FUEL TYPE



Total consumption of energy in Texas grew at an annual rate of 4.1 percent from 1960 to 1973, peaking in 1973 at 7.8 quadrillion Btu. After the Arab embargo of 1973-1974, consumption began to decline. A 7.4 percent decrease in energy consumption in 1975 over 1974 levels has been attributed primarily to higher real energy prices and the economic recession, which resulted in a decline in industrial energy consumption. An 11.8 percent decline in the use of natural gas contributed significantly to the 1975 drop in total energy consumption.

Energy use in 1975 totaled 7.05 quadrillion Btu, the equivalent of approximately 3.5 million barrels of oil daily. Natural gas was the state's largest energy source in 1975, supplying 57.4 percent of the total consumption. Petroleum was the second major source, contributing 39.8 percent. Coal and lignite supplied 2.5 percent and hydropower contributed 0.3 percent of the total in 1975.

Although not a major source of the state's energy needs, lignite consumption grew fastest over the period 1960-1975, averaging a 12.9 percent increase per year. Electricity consumption also grew at a rapid rate over the 15-year period, averaging 9.2 percent per year. Petroleum consumption increased at an annual rate of 4.6 percent; hydropower, 3.0 percent; and natural gas, 1.7 percent.

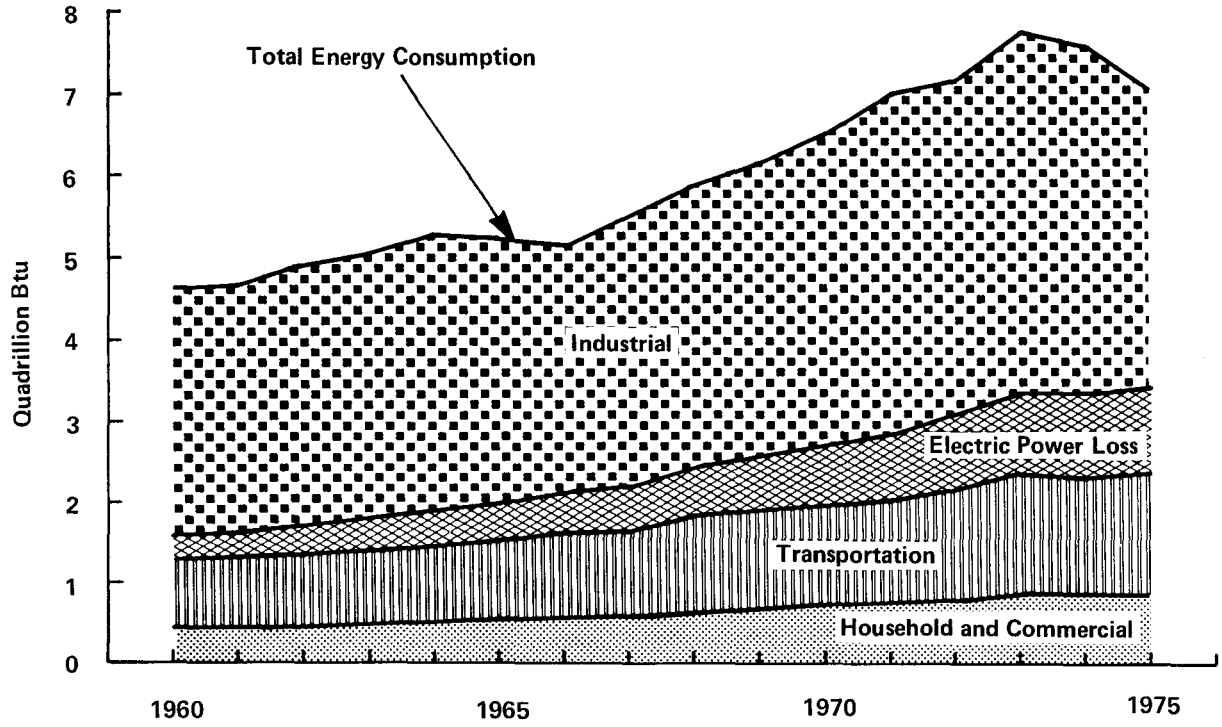
TOTAL ENERGY CONSUMPTION, BY TYPE OF FUEL
(Trillion Btu)

Year	Coal & Lignite	Petroleum Products	Natural Gas	Hydropower	Total Gross Consumption*	Electricity	Total Net Consumption**
1960	28.1	1427.5	3159.4	12.4	4627.4	132.2	4314.2
1961	20.2	1454.5	3178.1	13.7	4666.5	140.5	4349.7
1962	21.2	1519.9	3367.1	8.8	4916.9	160.6	4551.9
1963	20.1	1544.8	3484.7	5.2	5054.8	179.9	4646.0
1964	27.5	1692.9	3565.1	5.0	5290.5	196.5	4847.1
1965	29.4	1552.8	3650.0	8.0	5240.2	215.7	4777.0
1966	27.4	1721.7	3384.5	8.4	5141.9	237.6	4635.8
1967	24.1	1826.1	3660.3	6.2	5516.7	260.7	4962.0
1968	24.6	2024.7	3840.6	13.8	5903.8	292.2	5287.3
1969	23.4	2124.6	4021.1	13.5	6182.6	329.5	5488.6
1970	28.9	2216.3	4277.2	10.7	6533.1	358.2	5783.9
1971	22.4	2376.2	4628.4	9.3	7036.4	384.1	6206.7
1972	23.5	2631.1	4523.4	8.6	7186.5	428.2	6277.2
1973	110.2	2902.8	4757.3	17.9	7788.1	452.4	6797.6
1974	120.6	2881.4	4595.3	16.3	7613.6	477.3	6572.5
1975	173.2	2808.9	4052.1	19.2	7053.4	495.9	5989.9

*Total energy use; includes consumption by the electric power sector.
**Direct energy consumption; includes electricity consumption but does not include consumption by the electric power sector.
Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

TOTAL ENERGY CONSUMPTION

ENERGY CONSUMPTION, BY SECTOR



Distribution patterns of energy consumption have changed markedly in the 15-year period from 1960 to 1975. Among the energy sources, use of electricity has grown most rapidly. The industrial sector's share of energy use declined from 65.6 percent of the total in 1960 to 51.0 percent in 1975, primarily because of faster growth in other sector consumption and conservation by industry. The household and commercial sector and the transportation sector both increased their respective portions of total energy use by over 3 percent in the 15-year period.

In 1975 the household and commercial sector consumed 12.1 percent of total energy inputs; the transportation sector, 21.8 percent; electric power loss, 15.1 percent; and the industrial sector, 51.0 percent.

TOTAL ENERGY CONSUMPTION, BY CONSUMING SECTOR*
(Trillion Btu)

Year	Household & Commercial	Industrial**	Transportation	Electric Power Loss	Total Gross Consumption
1960	426.0	3035.2	853.0	313.2	4627.4
1961	428.0	3041.7	879.9	316.8	4666.5
1962	478.0	3176.6	897.5	364.8	4916.9
1963	499.6	3248.9	897.5	408.8	5054.8
1964	524.3	3370.0	952.8	443.4	5290.5
1965	525.8	3245.1	1006.1	463.1	5240.2
1966	563.8	3020.8	1051.2	506.1	5141.9
1967	587.7	3317.1	1057.2	554.6	5516.7
1968	639.1	3452.1	1196.0	616.5	5903.8
1969	697.2	3573.1	1218.3	694.0	6182.6
1970	740.3	3795.3	1248.3	749.2	6533.1
1971	755.1	4166.1	1285.5	829.8	7036.4
1972	796.6	4096.7	1383.9	909.4	7186.5
1973	881.5	4408.9	1507.2	990.5	7788.1
1974	855.2	4235.8	1481.5	1041.1	7613.6
1975	855.8	3597.7	1536.4	1063.5	7053.4

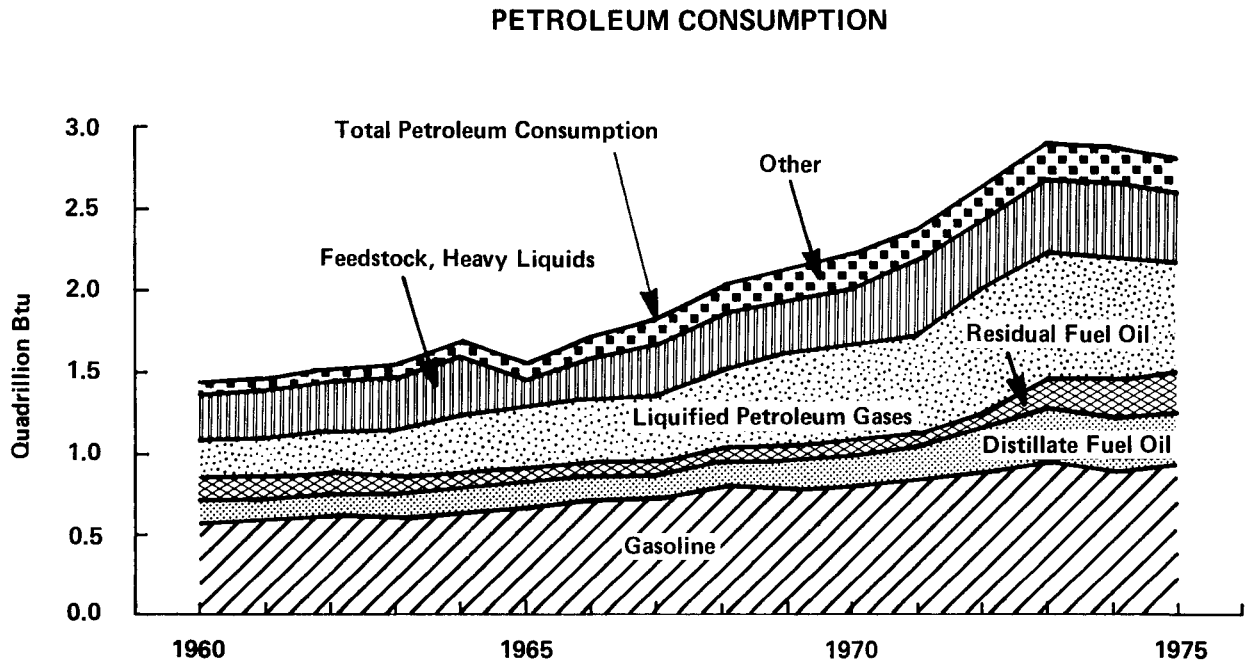
*Electricity consumption is included in data shown for the three final consuming sectors. "Electric Power Loss" reflects the difference between energy inputs to the electric power sector and sales of electricity to consuming sectors.

**Includes petroleum feedstock use by the petrochemical industry.

Note: Data may not add to totals shown due to rounding.

SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

TOTAL ENERGY CONSUMPTION



Of the total petroleum consumption in 1975, gasoline use constituted 33.2 percent. Liquified petroleum gases was the second major petroleum product consumed with 23.5 percent of the total. The gasoline portion of total petroleum use declined significantly over the period 1960-1975, while the liquified petroleum gases portion increased at a rapid rate.

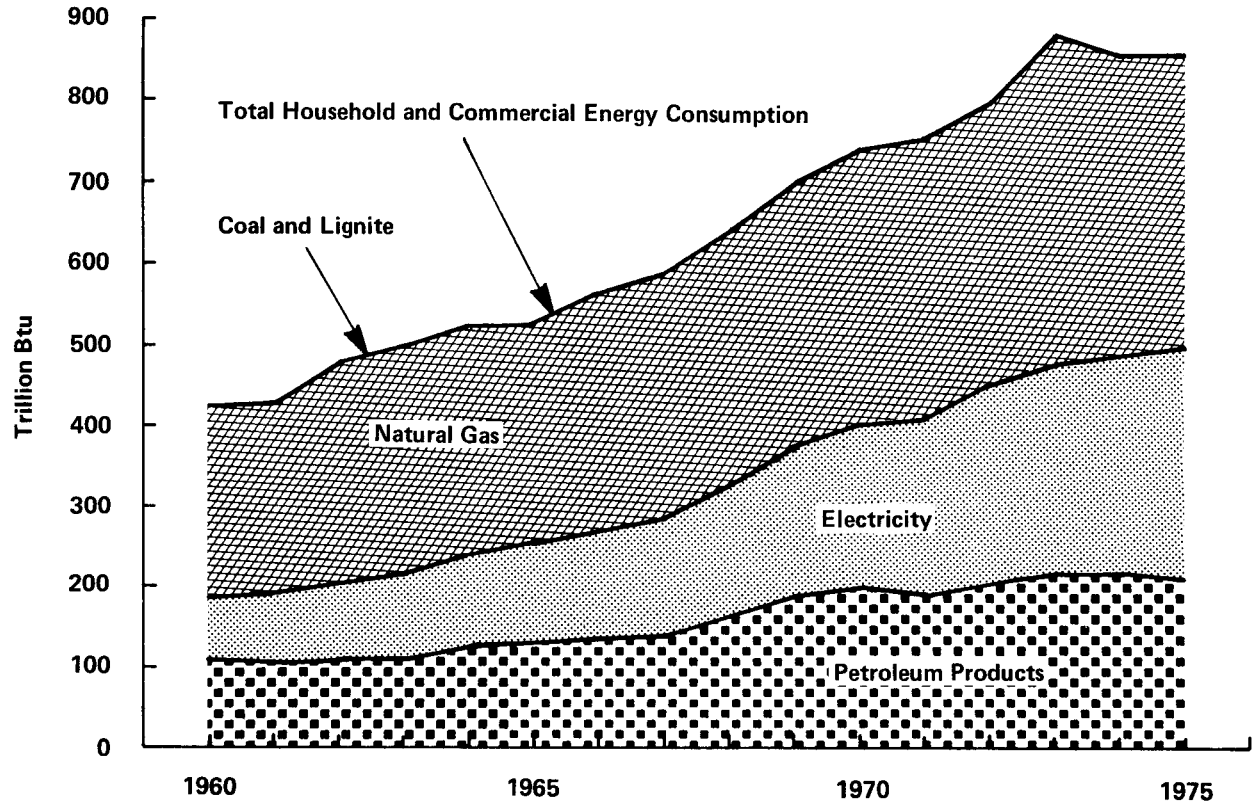
PETROLEUM CONSUMPTION, BY TYPE OF PRODUCT
(Trillion Btu)

Year	Gasoline	Distillate Fuel Oil	Residual Fuel Oil	Liquified Petroleum Gases	Feedstock, Heavy Liquids	Other	Total
1960	566.5	141.6	138.9	227.2	281.2	72.1	1427.5
1961	589.7	126.9	134.7	237.0	293.0	73.2	1454.5
1962	615.5	139.6	117.7	258.6	305.2	83.3	1519.9
1963	608.5	140.3	110.0	281.3	317.9	86.8	1544.8
1964	641.5	139.8	110.1	340.5	358.7	102.3	1692.9
1965	671.2	147.2	86.6	373.0	166.2	108.6	1552.8
1966	721.3	135.8	83.9	392.6	241.3	146.8	1721.7
1967	730.1	134.1	85.6	409.6	305.6	161.1	1826.1
1968	807.5	142.4	86.7	480.2	332.9	175.0	2024.7
1969	785.8	173.6	88.7	572.7	308.9	194.9	2124.6
1970	798.9	188.7	90.8	589.5	337.6	210.8	2216.3
1971	839.7	203.2	76.8	607.2	456.0	193.3	2376.2
1972	886.4	270.9	86.5	763.7	416.6	207.0	2631.1
1973	943.4	335.2	182.1	776.0	443.0	223.1	2902.8
1974	887.4	342.3	231.9	750.5	454.1	215.2	2881.4
1975	932.6	321.9	258.2	661.4	426.1	208.7	2808.9

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ENERGY CONSUMPTION BY SECTOR

HOUSEHOLD AND COMMERCIAL ENERGY CONSUMPTION



From 1960 to 1975 total energy consumption by the household and commercial sector increased at a rate of 4.8 percent annually. While electricity consumption grew at a rapid rate of 9.4 percent per year, natural gas use increased at a slower 2.7 percent annually. Petroleum product consumption increased at an annual rate of 4.4 percent.

In 1975 natural gas constituted 42 percent and electricity supplied 34 percent of the total energy use by the household and commercial sector.

HOUSEHOLD AND COMMERCIAL ENERGY CONSUMPTION
(Trillion Btu)

Year	Coal & Lignite	Petroleum Products	Natural Gas	Electricity	Total
1960	1.8	109.0	239.5	75.7	426.0
1961	1.1	106.3	236.5	84.1	428.0
1962	1.2	109.6	273.6	93.7	478.0
1963	.9	109.7	282.8	106.2	499.6
1964	.8	124.7	284.0	114.8	524.3
1965	.7	128.5	271.4	125.2	525.8
1966	.7	134.8	293.7	134.6	563.8
1967	.6	138.3	301.1	147.8	587.7
1968	.3	162.5	312.2	164.1	639.1
1969	.2	187.9	322.5	186.6	697.2
1970	.2	198.5	336.8	204.8	740.3
1971	.1	188.7	345.5	220.8	755.1
1972	.1	204.3	343.7	248.4	796.6
1973	.1	215.8	404.9	260.8	881.5
1974	.1	217.0	365.6	272.5	855.2
1975	.1	208.8	356.4	290.6	855.8

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ENERGY CONSUMPTION BY SECTOR

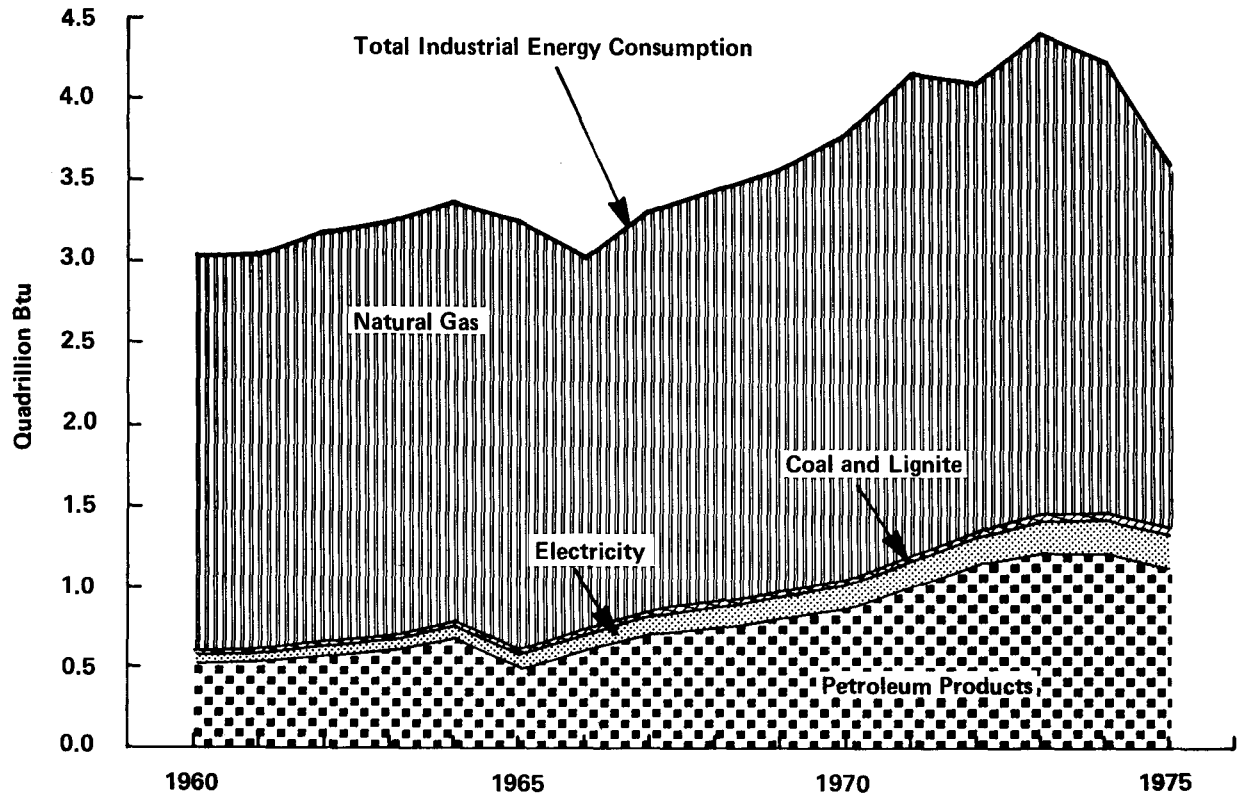
HOUSEHOLD AND COMMERCIAL PETROLEUM CONSUMPTION
(Trillion Btu)

Year	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquified Petroleum Gases	Asphalt	Petroleum Products
1960	4.2	11.2	2.0	47.6	44.0	109.0
1961	1.8	3.9	1.9	47.7	51.0	106.3
1962	2.6	4.9	1.1	48.1	52.9	109.6
1963	3.3	5.4	1.4	49.4	50.2	109.7
1964	5.3	4.6	1.1	60.1	53.6	124.7
1965	5.1	5.9	.3	61.6	55.6	128.5
1966	12.9	5.0	.6	56.0	60.3	134.8
1967	12.3	4.2	.7	57.3	63.8	138.3
1968	21.8	6.1	1.1	66.0	67.5	162.5
1969	22.7	12.4	3.6	78.0	71.2	187.9
1970	23.2	15.4	3.5	72.7	83.7	198.5
1971	19.5	16.9	3.2	69.8	79.3	188.7
1972	22.7	26.1	4.2	72.4	78.9	204.3
1973	33.6	28.2	7.3	66.1	80.6	215.8
1974	28.2	31.5	16.7	58.6	82.0	217.0
1975	27.8	33.6	23.8	53.9	69.7	208.8

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historial Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ENERGY CONSUMPTION BY SECTOR

INDUSTRIAL ENERGY CONSUMPTION



During the 15-year period from 1960 to 1975, total industrial consumption for fuel and feedstock uses increased at a rate of 1.1 percent per year. Consumption declines in 1974 and 1975 were due primarily to the economic recession, but more efficient use of energy by industry was also a factor.

Electricity consumption increased at a rapid rate of 9 percent annually over the 15-year period, while natural gas use declined 0.6 percent annually. Petroleum product consumption increased at a rate of 5.2 percent per year; coal and lignite use, 3.8 percent.

Natural gas supplied 62 percent and petroleum products contributed 31 percent of the total energy consumed by the industrial sector in 1975. The large Texas petrochemical industry requires significant quantities of petroleum and natural gas for feedstock uses.

ENERGY CONSUMPTION BY SECTOR

INDUSTRIAL ENERGY CONSUMPTION
(Trillion Btu)

Year	Coal and Lignite	Petroleum Products*	Natural Gas*	Electricity	Total
1960	26.3	519.3	2433.2	56.4	3035.2
1961	19.1	532.8	2433.4	56.4	3041.7
1962	20.0	575.3	2514.4	66.9	3176.6
1963	18.9	605.1	2551.2	73.7	3248.9
1964	26.5	683.5	2578.3	81.8	3370.0
1965	28.7	487.5	2638.4	90.5	3245.1
1966	26.7	605.0	2286.2	102.9	3020.8
1967	23.5	704.9	2475.7	112.9	3317.1
1968	24.3	745.3	2554.5	128.0	3452.1
1969	23.3	806.8	2600.2	142.8	3573.1
1970	28.6	865.7	2747.5	153.4	3795.3
1971	22.3	1000.1	2980.3	163.4	4166.1
1972	23.4	1139.6	2753.9	179.8	4096.7
1973	42.3	1220.5	2954.5	191.6	4408.9
1974	44.5	1214.4	2772.1	204.8	4235.8
1975	46.2	1116.0	2230.2	205.3	3597.7

*Includes feedstock use by the petrochemical industry.
Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

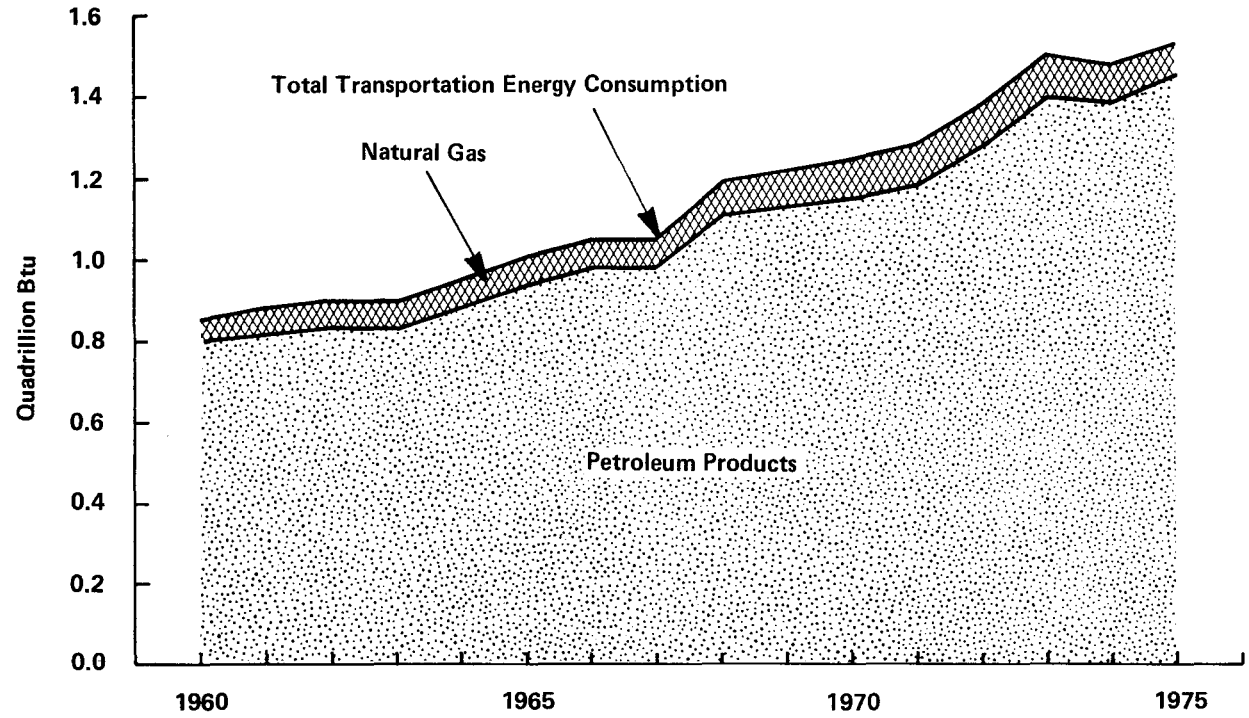
INDUSTRIAL PETROLEUM CONSUMPTION
(Trillion Btu)

Year	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Liquified Petroleum Gases*	Feedstock, Heavy Liquids**	Total
1960	15.0	51.5	27.5	144.1	281.2	519.3
1961	5.8	43.0	37.0	154.0	293.0	532.8
1962	5.7	52.1	35.9	176.4	305.2	575.3
1963	8.3	47.6	35.1	196.2	317.9	605.1
1964	14.7	48.0	30.4	231.7	358.7	683.5
1965	14.5	47.5	11.4	247.9	166.2	487.5
1966	29.1	46.7	11.2	276.7	241.3	605.0
1967	27.6	60.4	11.5	299.8	305.6	704.9
1968	17.8	25.1	11.5	358.0	332.9	745.3
1969	19.5	39.8	10.7	427.9	308.9	806.8
1970	19.3	42.3	11.4	455.1	337.6	865.7
1971	13.0	44.9	9.2	477.0	456.0	1000.1
1972	18.6	62.1	17.9	624.4	416.6	1139.6
1973	15.7	71.7	42.9	647.2	443.0	1220.5
1974	14.9	64.8	44.5	636.1	454.1	1214.4
1975	14.2	65.2	52.1	558.4	426.1	1116.0

*Includes feedstock use by the petrochemical industry.
**Consumption by the petrochemical industry.
Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ENERGY CONSUMPTION BY SECTOR

TRANSPORTATION ENERGY CONSUMPTION



Total consumption by the transportation sector increased at an annual rate of 4.0 percent from 1960 to 1975. Petroleum product consumption increased at a rate of 4.1 percent per year, while natural gas use increased at an annual rate of 3.0 percent.

TRANSPORTATION ENERGY CONSUMPTION
(Trillion Btu)

Year	Petroleum Products	Natural Gas	Total
1960	798.8	54.1	853.0
1961	814.9	65.0	879.9
1962	834.1	63.4	897.5
1963	829.6	67.9	897.5
1964	884.2	68.6	952.8
1965	936.5	69.6	1006.1
1966	981.5	69.7	1051.2
1967	982.6	74.6	1057.2
1968	1108.3	87.7	1196.0
1969	1129.3	89.0	1218.3
1970	1149.1	99.2	1248.3
1971	1183.3	102.2	1285.5
1972	1276.7	107.2	1383.9
1973	1400.4	106.8	1507.2
1974	1385.4	96.1	1481.5
1975	1452.6	83.8	1536.4

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ENERGY CONSUMPTION BY SECTOR

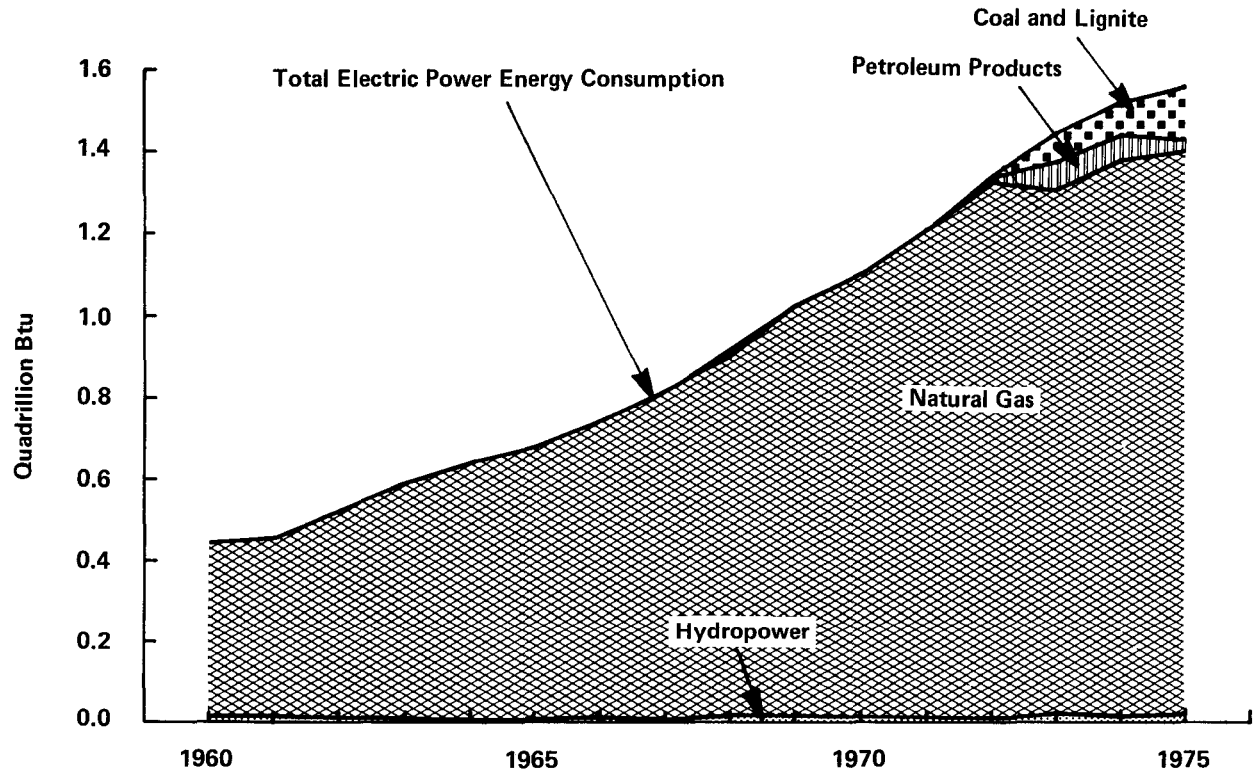
TRANSPORTATION PETROLEUM CONSUMPTION
(Trillion Btu)

Year	Gasoline	Jet Fuel	Distillate Fuel Oil	Residual Fuel Oil	Liquified Petroleum Gases	Total
1960	566.5	8.9	78.7	109.2	35.5	798.8
1961	589.7	14.6	79.8	95.5	35.3	814.9
1962	615.5	22.1	82.3	80.1	34.1	834.1
1963	608.5	25.0	87.0	73.4	35.7	829.6
1964	641.5	28.7	86.9	78.4	48.7	884.2
1965	671.2	33.4	93.6	74.8	63.5	936.5
1966	721.3	44.5	83.8	72.0	59.9	981.5
1967	730.1	57.4	69.3	73.3	52.5	982.6
1968	807.5	67.9	102.8	73.9	56.2	1108.3
1969	785.8	81.5	121.1	74.1	66.8	1129.3
1970	798.9	84.6	130.7	73.2	61.7	1149.1
1971	839.7	81.5	141.1	60.6	60.4	1183.3
1972	886.4	86.8	175.4	61.2	66.9	1276.7
1973	943.4	93.2	203.8	97.3	62.7	1400.4
1974	887.4	90.1	216.1	136.0	55.8	1385.4
1975	932.6	97.0	211.9	162.0	49.1	1452.6

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ENERGY CONSUMPTION BY SECTOR

ELECTRIC POWER ENERGY CONSUMPTION



Total energy inputs to the electric power sector increased at an annual rate of 8.7 percent from 1960 to 1975. From 1973 to 1975, however, consumption increased at a slower rate of 4.0 percent per year.

Natural gas has been the primary source of energy for the generation of electric power since 1960. However, since 1972 fuel sources have diversified. Natural gas use dropped from 98.6 percent of the total energy use in 1972 to 89.5 percent in 1973. Between 1973 and 1975, coal and lignite use increased at a rate of 36.9 percent per year.

In 1975 natural gas constituted 88.6 percent of the total energy consumption by the electric power sector; coal and lignite, 8.1 percent; petroleum products, 2.0 percent; and hydropower, 1.2 percent.

ENERGY CONSUMPTION BY SECTOR

ELECTRIC POWER ENERGY CONSUMPTION
(Trillion Btu)

Year	Coal and Lignite	Petroleum Products	Natural Gas	Hydropower	Total
1960	.0	.4	432.6	12.4	445.4
1961	.0	.5	443.1	13.7	457.3
1962	.0	.9	515.7	8.8	525.4
1963	.2	.4	582.8	5.2	588.7
1964	.3	.5	634.2	5.0	639.9
1965	.0	.3	670.5	8.0	678.8
1966	.0	.4	734.9	8.4	743.7
1967	.0	.3	808.9	6.2	815.3
1968	.0	8.6	886.3	13.8	908.7
1969	.0	.6	1009.4	13.5	1023.5
1970	.0	3.0	1093.7	10.7	1107.4
1971	.0	4.1	1200.5	9.3	1213.9
1972	.0	10.5	1318.5	8.6	1337.6
1973	67.8	66.1	1291.2	17.9	1442.9
1974	76.0	64.6	1361.5	16.3	1518.4
1975	127.0	31.5	1381.7	19.2	1559.4

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

ELECTRIC POWER PETROLEUM CONSUMPTION
(Trillion Btu)

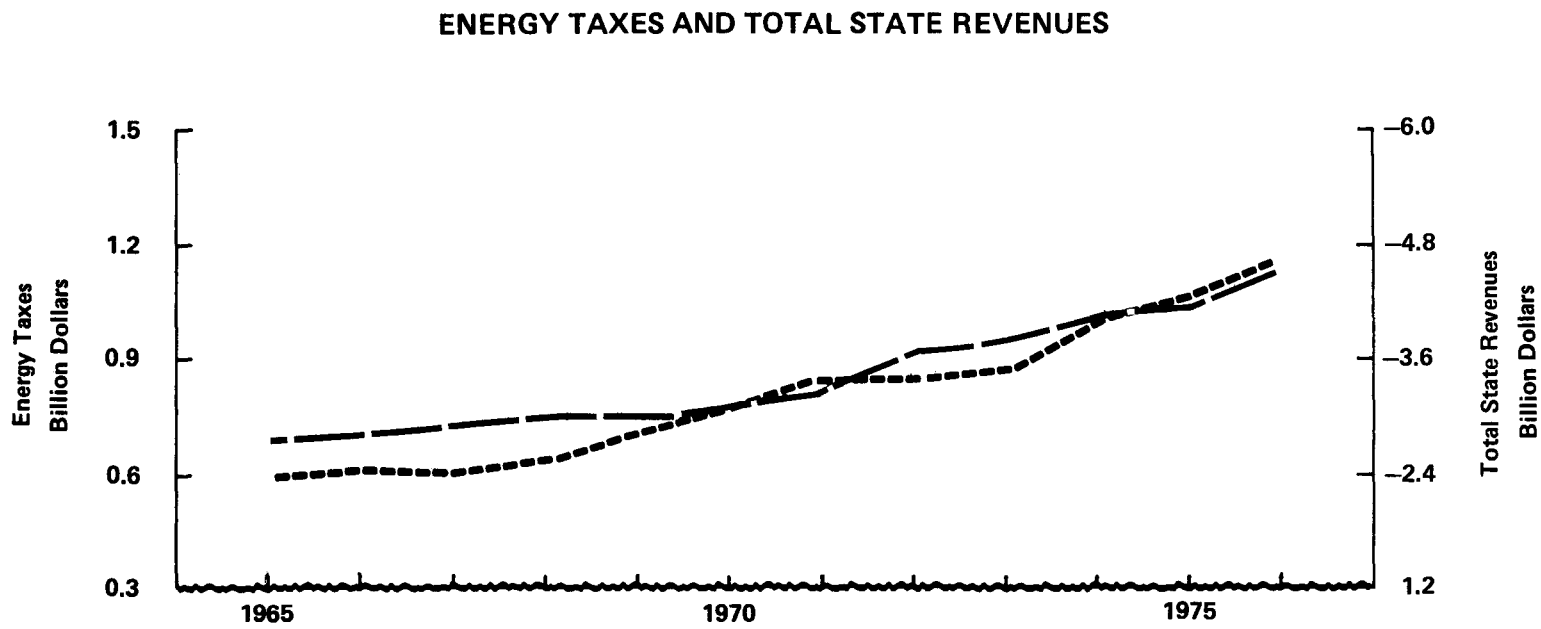
Year	Distillate Fuel Oil	Residual Fuel Oil	Total
1960	.2	.2	.4
1961	.2	.3	.5
1962	.3	.6	.9
1963	.3	.1	.4
1964	.3	.2	.5
1965	.2	.1	.3
1966	.3	.1	.4
1967	.2	.1	.3
1968	8.4	.2	8.6
1969	.3	.3	.6
1970	.3	2.7	3.0
1971	.3	3.8	4.1
1972	7.3	3.2	10.5
1973	31.5	34.6	66.1
1974	29.9	34.7	64.6
1975	11.2	20.3	31.5

Note: Data may not add to totals shown due to rounding.
SOURCE: Governor's Energy Advisory Council based on U.S. Department of Interior, Bureau of Mines, *Historical Fuels and Energy Consumption Data, 1960-1972* and other data provided by the Bureau of Mines.

CHAPTER 2

ENERGY TAX COLLECTIONS

ENERGY TAX COLLECTIONS



The level of State energy tax collections is closely related to the level of total State revenues (excluding federal grants). Energy tax collections represented slightly over one-fourth of the total State revenues from 1965 to 1971, slightly under one-fourth of the total from 1972 to 1974, and in 1975 and 1976 energy taxes contributed $1.1 billion and $1.2 billion, respectively, to state revenues, representing 25.5 percent of total revenues in each year.

During the period 1965-1976, energy taxes in current dollars increased at an annual rate of 10.6 percent while total state revenues increased at a rate of 11.8 percent per year.

ENERGY TAX COLLECTIONS

STATE ENERGY TAX REVENUES AND TOTAL STATE REVENUES
(Million Dollars)

Fiscal Year Ending August 31	State Energy Tax Revenues						Total State Revenues*
	Production & Regulation Tax, Crude Oil	Production & Regulation Tax, Natural Gas	Special Motor Fuel Tax	Motor Fuel Tax	Oil & Gas Well Servicing Tax	Total	
1965	127	73	16	188	1	405	1410
1966	133	74	19	198	1	425	1468
1967	143	78	21	209	1	452	1529
1968	158	82	24	223	1	488	1647
1969	156	84	26	241	1	508	1928
1970	173	96	28	258	1	556	2219
1971	195	109	32	302	1	639	2454
1972	193	114	36	320	1	664	2858
1973	210	125	42	344	1	722	3150
1974	347	171	46	344	1	909	3716
1975	405	260	45	350	2	1062	4151
1976	431	365	51	376	3	1226	4816

*Excludes federal grants.
Note: Data may not add to totals shown due to rounding.
SOURCE: Comptroller of Public Accounts, *Annual Financial Report of the State of Texas* (annual volumes).

CHAPTER XI

POPULATION AND EMPLOYMENT

POPULATION AND EMPLOYMENT

TOTAL POPULATION, EMPLOYMENT, AND ENERGY INDUSTRY EMPLOYMENT*

Year	Total Population (Thousand People)	Total Employment (Thousand Jobs)	Total Energy Industry Employment** (Thousand Jobs)
1952	9299	3075	199
1953	9430	3115	204
1954	9615	3088	205
1955	9786	3203	210
1956	9958	3332	217
1957	10127	3374	219
1958	10295	3344	208
1959	10462	3421	207
1960	10621	3435	199
1961	10816	3441	195
1962	10930	3517	190
1963	10155	3578	183
1964	10265	3670	182
1965	10374	3801	182
1966	10487	3969	179
1967	10606	4117	177
1968	10810	4286	177
1969	11033	4471	178
1970	11240	4510	181
1971	11424	4563	181
1972	11591	4651	184
1973	11819	4776	190
1974	12012	4920	206
1975	12226	4997	220
1976	12476	5217	226

*Annual averages.

**Includes petroleum and coal products (manufacturing), crude petroleum and natural gas (mining), and electric and gas companies and systems (public utilities).

SOURCE: Texas Employment Commission in cooperation with U.S. Bureau of Labor Statistics, *Population and Labor Force Estimates for Texas, 1950-1972,* plus updates for 1973-75, and *Labor Force Estimates, Texas (annual issues).*

CHAPTER XII.

PERSONAL INCOME

PERSONAL INCOME

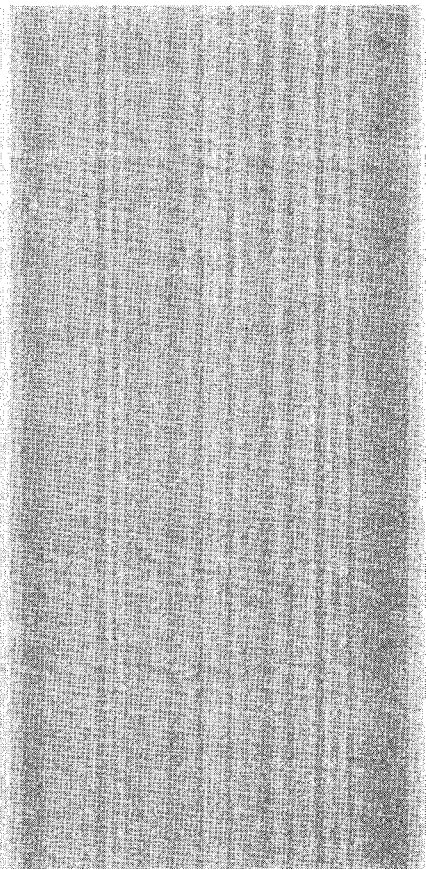
PERSONAL INCOME

Year	Total Personal Income (Million Dollars)
1952	12837
1953	13196
1954	13504
1955	14438
1956	15472
1957	16538
1958	17128
1959	18041
1960	18636
1961	19627
1962	20634
1963	21699
1964	23159
1965	25025
1966	27638
1967	30211
1968	33496
1969	36897
1970	40515
1971	42780
1972	47601
1973	54783
1974	61362
1975	68903
1976	77956

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, "Survey of Current Business", August, 1976 and April 1977.

CHAPTER XIII.

PRICE INDEXES



PRICE INDEXES

PRICE INDEXES*

Year	Dallas Consumer Price Index	Houston Consumer Price Index	U.S. Consumer Price Index	U.S. Wholesale Price Index
1952	--	81.9	79.5	88.6
1953	--	82.9	80.1	87.4
1954	--	82.8	80.5	87.6
1955	--	82.3	80.2	87.9
1956	--	83.6	81.4	90.7
1957	--	86.2	84.3	93.3
1958	--	87.7	86.6	94.6
1959	--	88.4	87.3	94.8
1960	--	89.2	88.7	94.9
1961	--	89.7	89.6	94.5
1962	--	91.4	90.6	94.8
1963	--	92.3	91.7	94.5
1964	92.6	93.7	92.9	94.7
1965	93.8	94.8	94.5	96.6
1966	97.1	97.5	97.2	99.8
1967	100.0	100.0	100.0	100.0
1968	104.5	104.3	104.2	102.5
1969	111.3	111.0	109.8	106.5
1970	117.9	116.8	116.3	110.4
1971	121.3	120.6	121.3	113.9
1972	124.9	124.9	125.3	119.1
1973	131.9	131.4	133.1	134.8
1974	145.5	146.2	147.7	160.1
1975	158.2	163.8	161.2	174.9
1976	167.7	176.5	170.5	182.9

*Annual averages.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics; compiled by the Bureau of Business Research, The University of Texas at Austin.

APPENDIX

TEXAS ENERGY DATA BANK

The Texas Energy Data Bank presently contains 366 data items, many of which have annual data going back as far as 1952. Some items also contain monthly data beginning in 1970. The tables and plots included in this report were obtained from the Texas Energy Data Bank. Some of the data shown in the tables and plots was taken directly from the data bank, while some of it was converted to other units of measurement. The names of each data item in the Texas Energy Data Bank, along with its data item access number, may be found in the List of Data Items. Within the Texas Energy Data Bank, each data item contains the following information: annual values from 1952-1976 (when available), monthly values from 1970-1977 (when applicable and available), title-name, unit of measurement, a shortened version of the title-name and unit of measurement (these are used as column headings in reports), and general source of information.

The Texas Energy Data Bank system uses a combination of System 2000 and Fortran V software. The basic design of the Texas Energy Data Bank includes a file maintenance updating phase and a data retrieval phase.

The maintenance and updating phase allows the capability of adding, deleting or changing individual values of each data item and the adding or changing of title, units of measurement, their shortened version, and general sources. The data base is updated on a Fortran unformatted file. The System 2000 file is created from the Fortran file and used in this form for easier interactive retrieval from a computer terminal. Updates can be made to the System 2000 file by sitting down at a terminal and keying in the data values. But these changes are not permanent unless the Fortran file is updated also. Updates are generally made within two to four weeks of receiving new data.

The second phase of the Texas Energy Data Bank is the data retrieval phase, which includes data manipulation, report retrieval, statistical analysis and plotting capabilities. Some plots and reports may be obtained through the Texas Energy Data Bank - Monitor, (TEDB - Monitor) which can be run by a person who has had minimal computer experience. A handbook is being written to aid in access to the Texas Energy Data Bank through the Monitor. Many of the tables and plots presented in this paper may be obtained from the Texas Energy Data Bank - Monitor, along with a variety of other reports (for example, monthly reports). All of the reports and some of the plots may be obtained directly on the terminal, or for better quality output the reports can be directed to a computer printer and the plots can be directed to the Calcomp electromechanical plotter at the Texas Water Development Board's computer facilities. More complicated access to the Texas Energy Data Bank must be obtained by a person specially trained in the System 2000 basic language and Fortran. When certain statistical analyses or data manipulation programs are found to be in greater demand, they will be added to the Texas Energy Data Bank-Monitor in order to allow for easier retrieval by the novice.

LIST OF DATA ITEMS

Item No.

CRUDE PETROLEUM

Production

1 *Total production of crude petroleum
2 *Production of lease condensate
3 *Total offshore production
4 *Production from federal lands
5 *Production from state lands
6 Total value of crude oil production at wells
7 Approximate number of oil wells producing December 31
8 Average production per well per day

Exports

9 *Crude oil exports from Texas

Stocks

10 *Total stocks of crude petroleum
11 *Stocks at refineries

Reserves

12 Estimates of proved crude oil reserves, December 31
270 Total of discoveries, revisions, and extensions
271 *Production during year

Demand

13 *Indicated demand for total crude oil

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* Monthly data

Item No.

TEXAS RAILROAD COMMISSION CRUDE PETROLEUM DATA

Crude Petroleum Production

296 *Total production
297 *Crude oil production
298 *Condensate production
290 *Total offshore oil production - state waters
291 *Total offshore oil production - federal waters
292 *Crude oil production - offshore state waters
293 *Crude oil production - offshore federal waters
294 *Condensate production - offshore state waters
295 *Condensate production - offshore federal waters

PETROLEUM REFINING

Petroleum Refineries and Capacity

14 Total number of petroleum refineries
15 Crude oil throughput capacity
16 Capacity under construction
17 Gasoline output capacity
18 Capacity under construction

Crude Oil Distillation

19 *Refinery gross input
20 *Refinery capacity
21 *Refinery operating ratio

Refinery Receipts of Crude Oil

22 *Intrastate refinery receipts

DATA ITEMS

Item No.

23 *Interstate refinery receipts
24 *Refinery receipts of foreign crude

Other Refinery Data

25 *Crude oil input to refineries
26 *Refinery fuel use and losses
27 Changes in refinery stocks

Refinery Input

28 *Crude petroleum, total
29 *Domestic
30 *Foreign
31 *Unfinished oils rerun, net
32 *Natural gas liquids, total
33 *Liquified petroleum gases
34 *Natural gasoline
35 *Plant condensate
36 *Other hydrocarbons

Refinery Output

37 *Gasoline, total
38 *Motor gasoline
39 *Aviation gasoline
40 *Jet fuel, total
41 *Naphtha-type
42 *Kerosene-type
43 *Ethane, including ethylene
44 *Liquified gases, total
45 *LRG for fuel use
46 *LRG for chemical use
47 *Kerosene

Item No.

48 *Distillate fuel oil
49 *Residual fuel oil
50 *Petrochemical feedstocks, total
51 *Still gas
52 *Naphtha-400
53 *Other
54 *Special naphthas
55 *Lube oil, total
56 *Bright stock
57 *Neutral
58 *Other grades
59 Wax, total
60 Microcrystalline
61 Crystalline - fully refined
62 Crystalline - other
63 *Coke
64 *Asphalt
65 *Road oil
66 *Still gas for fuel
67 *Miscellaneous products
68 *Processing gain (-) or loss (+)

Refined Product Stocks

69 *Motor gasoline stocks
70 *Aviation fuel stocks
71 *Distillate fuel oil stocks
72 *Residual fuel oil stocks
73 *Other stocks

NATURAL GAS LIQUIDS

Natural Gas Liquids Production and Value at Natural Gas Processing Plants

74 Total production of natural gas liquids
75 Total value of natural gas liquids

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* Monthly data

Item No.	
76	LPG and ethane production
77	LPG and ethane value
78	Natural gasoline and isopentane production
79	Natural gasoline and isopentane value
80	Plant condensate production
81	Plant condensate value
82	Finished gasoline and naphtha production
83	Finished gasoline and naphtha value
84	Other products production
85	Other products value
	Production of Natural Gas Liquids and Ethane
86	*Ethane production
87	*Liquified petroleum gases production
88	*Natural gasoline and isopentane production
89	*Plant condensate production
90	*Other products production
	Stocks of Natural Gas Liquids at Plants, Terminals, Refineries and Pipelines
91	*Ethane stocks
92	*Stocks of liquified petroleum gases
93	*Natural gasoline and isopentane stocks
94	*Plant condensate stocks
95	*Other products stocks
96	*Total stocks of natural gas liquids at refineries
	Reserves
97	Estimated proved reserves of natural gas liquids, December 31
272	Total of discoveries, revisions, and extensions
273	Net production during year

NATURAL GAS

Item No.	
	Gross Withdrawals
98	Total withdrawals of natural gas
99	*Withdrawals from gas wells
100	Withdrawals from oil wells
	Disposition
101	Marketed production
102	Repressuring
103	Vented and flared
104	Change in underground storage
105	Unaccounted for
274	Net interstate movements (exports)
275	Total consumption
	Interstate Movements
106	Imports
107	Exports
	Consumption
276	Field use
108	Extraction loss
109	Lease and plant fuel
110	Pipeline fuel
277	Delivered to consumers
	Delivered to Consumers
111	Residential consumption
112	Commercial consumption
113	Industrial consumption
114	Electric utilities' consumption
115	Other consumer consumption

* Monthly data

DATA ITEMS

Item No.	
	Value of Natural Gas Production and Consumption
116	Total wellhead value of marketed natural gas production
278	Average wellhead value of marketed production
279	Average value of interstate gas sales
280	Average value of intrastate gas sales
117	Total value of natural gas delivered to consumers
118	Value of residential consumption
119	Value of commercial consumption
120	Value of industrial consumption
121	Value of electric utility consumption
122	Value of other consumer consumption
	Producing Wells
123	Number of producing gas and condensate wells
	Reserves
124	Estimated total proved reserves of natural gas, December 31
281	Total of discoveries, revisions, and extensions
282	Net production during year
	Natural Gas Stored
125	Stored natural gas
126	Withdrawn natural gas
127	Net stored
	Underground Storage
128	Total number of underground reservoirs
129	Total stored gas in underground reservoirs
130	Total reservoir capacity

Item No.	TEXAS RAILROAD COMMISSION NATURAL GAS DATA
	Natural Gas Production
131	*Total production
132	*Gas well gas production
133	*Casinghead gas production
284	*Natural gas production - offshore state waters
285	*Natural gas production - offshore federal waters
286	*Gas well gas production - offshore state waters
287	*Gas well gas production - offshore federal waters
288	*Casinghead gas production - offshore state waters
289	*Casinghead gas production - offshore federal waters
	Ultimate Disposition
134	*Marketed production
135	*Transmission lines
136	*Plant fuel and lease use
137	*Other (carbon black)
138	*Extraction loss
139	*Underground storage
140	*Vented or flared
141	*Pressure maintenance and repressuring
142	*Other
	Exports
143	*Texas produced gas exported
299	*Imported Gas exported

* Monthly data

Item No.	
	Natural Gas Processing
144	*Natural gas plant inputs, total
145	*Gas to plants for processing
146	*Refinery vapors
147	*Other sources
148	*Natural gas plant outputs, total
149	*Plant condensate
150	*Natural gasoline
151	*LPG
152	*Ethane
153	Other
154	Total number of gasoline plants
	NATURAL GAS DISTRIBUTION
	Total Sales
155	Total number of customers of gas distributing plants
156	Total quantity sold
157	Average price per mcf
	Residential
158	Number of residential customers
159	Quantity sold
160	Average price per mcf
	Commercial
161	Number of commercial consumers
162	Quantity sold
163	Average price per mcf

Item No.	
	Industrial
164	Number of industrial consumers
165	Quantity sold
166	Average price per mcf
	Other
167	Number of other consumers
168	Quantity sold
169	Average price per mcf
	ELECTRIC POWER
	Consumption of Fuel for Production of Electric Energy
170	Electric utility coal consumption
171	Electric utility fuel oil consumption
172	Electric utility natural gas consumption
	Production of Electric Energy
173	Production of electricity by electric utilities, total
174	Production by water power
175	Production by fuels
176	Production of electricity by industrial establishments
	Electric Utility Fuel Costs ($ per mmBtu Consumed)
177	Composite average electric utility fuel costs
178	Average coal costs
179	Average fuel oil costs
180	Average natural gas costs

* Monthly data

DATA ITEMS

Item No.

ELECTRIC UTILITY DATA

Total Sales

181 Total number of electric utility customers
182 Total electricity sales
183 Total revenues

Residential

184 Number of residential customers
185 Electricity sales
186 Revenues

Commercial

187 Number of commercial customers
188 Electricity sales
189 Revenues

Industrial

190 Number of industrial customers
191 Electricity sales
192 Revenues

Other

193 Number of other customers
194 Electricity sales
195 Revenues

Typical Electric Bills (State Average)

196 Typical residential electric bills (1000 kwh consumption)
197 Typical commercial bills (6 kw billing load- 750 kwh consumption)
198 Typical commercial bills (40 kw billing load - 10,000 kwh consumption)
199 Typical industrial bills (150 kw billing load - 30,000 kwh consumption)
200 Typical industrial bills (1000 kw billing load - 200,000 kwh consumption)

EXPLORATION AND DRILLING

Drilling Applications

201 Total regular drilling applications

Wells Drilled

202 *Total discovery wells drilled
203 *Oil
204 *Gas
205 *Dry holes
206 *Total existing field wells drilled
207 *Oil
208 *Gas
209 *Dry holes
210 *Total service wells drilled
211 *Total oil wells drilled
212 *Total gas wells drilled
213 *Total dry holes drilled

Wells Completed

214 *Total completions
215 *Oil well completions
216 *Discovery
217 *Existing field
218 *Gas well completions
219 *Discovery
220 *Existing field
221 *Service well completions

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* Monthly data

Item No.	
	Holes Plugged
222	*Total holes plugged
223	*Oil
224	*Gas
225	*Oil and gas
226	*Dry
227	*Service
	Depth of Wells Drilled
228	Total depth of total wells drilled
229	Productive oil wells
230	Productive gas wells
231	Dry holes
232	Average depth of total wells drilled
233	Productive oil wells
234	Productive gas wells
235	Dry holes
	Drilling Costs
236	Total drilling costs of wells drilled
237	Productive oil wells
238	Productive gas wells
239	Dry holes
240	Average drilling costs of wells drilled
241	Productive oil wells
242	Productive gas wells
243	Dry holes
	Rig Activity
244	Annual average rotary rig activity

Item No.	
	OTHER ENERGY SOURCES
	Coal and Lignite
245	*Lignite production
246	Lignite reserves
247	Coal imports
	Uranium
248	Production
249	Reserves
	DEMOGRAPHIC AND FINANCIAL INFORMATION
	Population
250	Total population
	Employment
251	Total employment
252	Total energy industry employment
	Personal Income
253	Total personal income
	Price Indexes
254	*U.S. consumer price index
255	*U.S. wholesale price index
256	*Dallas consumer price index
257	*Houston consumer price index
	State Revenues
258	Total state revenues
259	Production and regulation tax, crude oil
260	Production and regulation tax, natural gas

* Monthly data

DATA ITEMS

Item No.	
261	Special motor fuel tax
262	Motor fuel tax
263	Oil and gas well servicing tax
	MISCELLANEOUS INFORMATION
	Gasoline Prices
264	*Houston
265	*Dallas
266	*Amarillo
267	*San Antonio
	Total Energy Production
268	Total energy production in Btu
	ENERGY CONSUMPTION
	Total Consumption
400	Total net consumption
401	Electricity
402	Total gross consumption
403	Coal and lignite
404	Petroleum products
405	Gasoline
406	Jet fuel
407	Kerosine
408	Distillate fuel oil
409	Residual fuel oil
410	Liquified petroleum gases
411	Feedstock, heavy liquids
412	Asphalt
413	Natural gas

Item No.	
414	Hydropower
415	Nuclear power
	Household and Commercial Consumption
416	Household and commercial net consumption
417	Electricity
418	Household and commercial gross consumption
419	Coal and lignite
420	Petroleum products
421	Gasoline
422	Jet fuel
423	Kerosene
424	Distillate fuel oil
425	Residual fuel oil
426	Liquified petroleum gases
427	Asphalt
428	Natural gas
	Industrial Consumption
429	Industrial net consumption
430	Electricity
431	Industrial gross consumption
432	Coal and lignite
433	Petroleum products
434	Gasoline
435	Jet fuel
436	Kerosene
437	Distillate fuel oil
438	Residual fuel oil
439	Liquified petroleum gases
440	Feedstock, heavy liquids
441	Asphalt
442	Natural gas

* Monthly data

Item No.	
	Transportation Consumption
443	Transportation net consumption
444	Electricity
445	Transportation gross consumption
446	Coal and lignite
447	Petroleum products
448	Gasoline
449	Jet fuel
450	Kerosene
451	Distillate fuel oil
452	Residual fuel oil
453	Liquified petroleum gases
454	Asphalt
455	Natural gas
	Electric Power Consumption
456	Electric power gross consumption
457	Coal and lignite
458	Petroleum products
459	Gasoline
460	Jet Fuel
461	Kerosene
462	Distillate fuel oil
463	Residual fuel oil
464	Liquified petroleum gases
465	Asphalt
466	Natural gas
467	Hydropower
468	Nuclear power

* Monthly data

CONVERSION FACTORS

STANDARD CONVERSION FACTORS

Fuel	Btu Factor (Billion)	Fuel Unit
Crude Oil	5.8	Thousand barrels
Natural Gas	1.032	Million cubic feet
Texas Lignite	14.0	Thousand tons
Hydro-Power	10.0	Billion kilowatt-hours
Natural Gas Liquids	4.011	Thousand barrels
Refinery Products	5.248	Thousand barrels
Electricity	3.412	Million kilowatt-hours

GLOSSARY

barrel (bbl)--liquid volume measure equivalent to 42 U.S. gallons.

bcf--billion cubic feet.

BOM--U.S. Bureau of Mines.

British thermal unit (Btu)--amount of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit under stated conditions of pressure and temperature.

capacity--maximum power output or load for which a machine, station, or system is rated.

completion--installation of permanent equipment for the production of oil or gas. If a well is equipped to produce only oil or gas from one zone or reservoir, the definition of a well (classified as an oil well or gas well) and the definition of a completion are identical. However, if a well is equipped to produce oil and/or gas separately from more than one reservoir, a well is not synonymous with a completion.

condensate--see lease condensate, plant condensate.

constant dollars--a unit of measurement in which the effect of changes in the purchasing power of the dollar has been removed. Constant dollar values are expressed in terms of dollars of a selected year, such as 1975.

Consumer Price Index (CPI)--a measure of changes in the prices of goods and services consumed by urban families and individuals. Compiled by the U.S. Bureau of Labor Statistics, the index includes a group of about 300 goods and services, ranging from rent to haircuts, normally purchased by urban wage earners. The relative importance given individual items in the index is based on periodic surveys of consumer expenditures. Current prices are expressed as a percentage of the 1967 average.

consumption--see energy consumption, gross; energy consumption, net.

crude oil--a naturally occurring mixture of liquid hydrocarbons. For statistical purposes, volumes reported as crude oil also include small amounts of hydrocarbon liquids that existed in the gaseous phase underground and small amounts of nonhydrocarbons.

current dollars--a unit of measurement in which the value expressed for each year reflects the purchasing power of the

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dollar in that year. Current dollars are not "deflated," as are constant dollars.

development well--well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

distillate fuel oil--the lighter fuel oils distilled off during the refining process. Included are Nos. 1 and 2 heating oils, diesel fuels, and No. 4 fuel oil. The major uses of distillate fuel oil include heating and diesel engine fuel.

drilling application--formal application to drill a hole for the purpose of finding or producing petroleum or to perform services related to oil and gas production. In Texas permits are issued by the Railroad Commission.

dry hole--an exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

electric generation--the process of transforming other forms of energy into electric energy, or the amount of electric energy so produced, expressed in kilowatt-hours.

electric power loss--the energy lost in the process of generating and transmitting electricity.

energy consumption, gross--total energy inputs into the economy, including coal, petroleum, natural gas, and the electricity generated by hydroelectric, nuclear, and geothermal power plants. It includes conversion losses by the electric power sector.

energy consumption, net--energy inputs into the final consuming sectors (household and commercial, industrial, and transportation) consisting of direct fuels and electricity distributed from the electric power sector. Conversion losses in the electric sector constitute the difference between gross and net energy.

ethane--a colorless, odorless, gaseous hydrocarbon found in natural gas and used as a fuel.

exploratory well--well drilled to (1) find and produce oil or gas in an unproved area; (2) find a new reservoir in a field productive of oil or gas in another reservoir; or (3) extend the limits of a known oil or gas reservoir.

extraction loss--shrinkage in volume occurring when natural gas liquids are removed from natural gas at a processing plant.

feedstock--see petrochemical feedstock.

fossil fuel--a naturally occurring fuel of an organic nature, such as coal, crude oil, and natural gas.

gasoline plant--a plant where natural gas is stripped of the liquid hydrocarbons usually present in wellhead gas.

gas well--well completed for production of natural gas from one or more gas zones or reservoirs and containing no completions for the production of crude oil.

hydropower--production of electricity by water power; hydroelectric generation.

index year--the year used as a reference point for economic data. In an index, relative changes occurring in a series of values are compared with the base period. The base period (or index year) usually equals 100, and any changes from it represent percentages.

kilowatt (kw)--1,000 watts.

kilowatt-hour (kwh)--unit of measurement representing the amount of electric energy consumed by a 10-watt lamp in one hour.

lease condensate--natural gas liquid recovered from gas well

gas in lease separators or field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

lignite--a low grade coal of a variety intermediate between peat and bituminous coal. The heat value of lignite typically ranges from 5,500 to 7,500 Btu per pound, which compares with 12,000 Btu per pound for bituminous coal.

liquified petroleum gas (LPG)--a mixture of gaseous hydrocarbons, principally propane and butane, which can be liquified under moderate pressure at normal temperatures.

mcf--thousand cubic feet.

motor gasoline--all of the various grades of refined petroleum naphtha other than aviation gasoline which by their composition are suitable for use in internal combustion engines.

naphtha--any of various volatile, often flammable, liquid hydrocarbon mixtures used chiefly as solvents and diluents.

natural gas--a naturally occurring mixture of low molecular weight hydrocarbons, which are gaseous under normal conditions, and some nonhydrocarbon gases. Methane is almost always the major constituent. Natural gas exists in natural underground reservoirs in the gaseous phase or in solution with crude oil. Customarily most of the nonhydrocarbons and the heavier hydrocarbons are removed before the natural gas is sold as fuel.

natural gas liquids (NGL)--those portions of reservoir gas which are liquified at the surface in lease separators, field facilities, or gas processing plants. Natural gas liquids include but are not limited to: ethane, propane, pentanes, natural gasoline, and condensate.

natural gasoline--a mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, which meet vapor pressure, end point, and other specifications. One of the liquified gases.

natural gas processing plant--a facility designed (1) to recover natural gas liquids from natural gas which may or may not have been processed through lease separators and field facilities and (2) to control the quality of the natural gas to be marketed.

net additions to reserves--new discoveries, revisions of earlier estimates, and the extension of earlier estimates for previously discovered reservoirs.

net exports--a calculated value obtained by deducting total imports from total exports. The resulting value may be a positive number (whereby the quantity of exports is greater than imports) or a negative number (the quantity of imports is greater).

oil well--well completed for the production of crude oil from at least one oil zone or reservoir.

oil well gas (casinghead gas)--natural gas produced along with crude oil from oil completions.

OPEC--Organization of Petroleum Exporting Countries.

personal income--the amount of current income received by persons from all sources (with the exception of transfer payments among individuals), measured before taxes have been deducted. Personal income includes the net incomes of unincorporated businesses and nonprofit institutions, and nonmonetary income, such as the estimate of the value of food consumed on farms and the estimated rental value of homes occupied by their owners; therefore it is not only the actual dollar income received by consumers.

petrochemical feedstock--fossil fuels used for their chemical properties, rather than their value as fuel, e.g., oil used to produce plastics and synthetic fabrics.

petrochemicals--chemicals derived from petroleum or other hydrocarbons which are used as feedstocks for the manufac-

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ture of a variety of plastics and synthetic rubber.

petroleum--technically, petroleum is that portion of the petroleum series of naturally occurring hydrocarbons which is liquid under normal conditions and includes crude oil and the heavier natural gas liquids. However, in industrial terminology, petroleum refers to the entire series, including the gases called natural gas, petroleum liquids, and the solids called asphalt and asphaltite.

plant condensate--a natural gas plant product consisting primarily of pentanes and heavier hydrocarbons which is recovered and separated as liquids at gas separators or scrubbers in processing plants or field facilities.

proved reserves--the estimated quantity of crude oil, natural gas, natural gas liquids, coal or uranium which field data analysis or geological and engineering evidence demonstrates with reasonable certainty to be recoverable under existing economic and operating conditions.

quadrillion (quad)--1 million billion; 10^{15}.

refinery--an industrial plant which processes crude oil and/or unfinished oils and manufactures refined petroleum products.

residual fuel oil--the heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are Nos. 5 and 6 fuel 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, heating, and various industrial purposes.

rotary rig--machine used for drilling wells that employs a rotating tube attached to a bit for boring holes through rock.

service well--injection well; a borehole drilled for the purpose of injecting water or gas into the pore spaces of a reservoir rock to induce oil or gas to flow into adjacent, producing wells.

short ton--unit of weight measurement equivalent to 2,000 pounds.

trillion--1 million million; 10^{12}.

well-- a hole drilled in the earth 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.

wellhead value--value of fuel at the point of production. Wellhead values are generally equivalent to the first purchase price.

Wholesale Price Index (WPI)--a measure of changes in wholesale prices that is compiled by the U.S. Bureau of Labor Statistics. The index includes a representative group of 2,000 commodities, ranging from crude rubber and cotton to finished apparel and tires. The relative importance given individual items depends on dollar shipments which are frequently measured. The base period for the index is 1967 and current prices are expressed as a percentage of the 1967 average.