

M I N U T E S

SPECIAL COMMITTEE ON NATURAL GAS

June 12 and 13, 1975

Members Present

Representative Harold Dyck, Chairman
Senator Ross Doyen, Vice-Chairman
Senator George Bell
Senator Paul Burke
Senator Jack Janssen
Senator Vincent Moore
Senator John Simpson
Representative Richard Brewster
Representative Keith Farrar
Representative Ben Foster
Representative Walter Graber
Representative Herbert Rogg
Representative William Southern

Staff Present

Russell Mills, Legislative Research Department
Bill Wolff, Legislative Research Department
Don Hayward, Revisor of Statutes Office

Conferees

Dr. William W. Hambleton, Director, Kansas Geological Survey
Margaret O. Oros, Kansas Geological Survey
Gary A. Waldron, Kansas Geological Survey
Shirley Paul, Kansas Geological Survey
Carol Zarley, Kansas Geological Survey
Ronald A. Hardy, Kansas Geological Survey
Richard Carlisle, Kansas Corporation Commission
Dr. R. J. Robel, Chairman, Advisory Council on Energy and
Natural Resources
J. Lewis Brock, Kansas Corporation Commission
George A. Sims, Mobil Oil
Harold Wills, State Fuel Coordinator
Don Schnacke, KIOGA

Conferees (Cont'd)

Jim Gear, Gear Petroleum Company
Bob Spurlock, Clinton Oil Company
Larry Pain, Phillips Petroleum Company
Roger Messman, Messman-Rinehard Oil Company
Robert A. Anderson, Midcontinent Oil and Gas Association
R. D. Randall, Petroleum, Inc.
Robert L. Williams, Imperial Oil Company
Bill Wells, Texas Oil and Gas
Roger McCoy, McCoy Petroleum Company
J. M. Gould, Barnett Oil Inc.
Jack Gurley, Pickrell Drilling Company
Richard Byrd, Mesa Petroleum Company

June 12, 1975
Morning Session

The first meeting of the Special Committee on Natural Gas was called to order at 10:00 a.m., June 12, 1975, in Room 529 by Chairman Harold Dyck.

Introductory remarks were made by Chairman Dyck. He announced that all meetings will start promptly at 10:00 a.m. on the first day of each two-day meeting, and at 9:00 a.m. on the second day. The goal of this Committee will be to arrive at some concrete answers to the problems of the natural gas shortage and develop valid suggestions to present to the next session of the legislature. It was unanimously agreed that future meetings will be held as follows:

July 7 and 8
August 11 and 12
September 11 and 12
September 29 and 30
October 20 and 21

The first conferee was Dr. R. J. Robel, Chairman of the Advisory Council on Energy and Natural Resources. He presented a prepared statement to the Committee. (Attachment No. I).

A member asked for clarification of "interruptible consumer". Dr. Robel explained that a company, such as KPL, buys gas for electrical generation at a lower rate than charged the average consumer and, when a shortage exists, theirs is the first service interrupted to insure sufficient gas for domestic use.

The Chairman introduced Dr. William W. Hambleton, Director of the Kansas Geological Survey. Dr. Hambleton introduced Ronald G. Hardy, Chairman of the Energy Analysis Committee.

Mr. Hardy presented Margaret O. Oros, head of the Oil and Gas Division of the Kansas Geological Survey for presentation of "Overview of Kansas Oil and Gas Occurrences". Ms. Oros presented the following exhibits to the Committee: a typical core sample was passed around; a drilling log; and the printed result of a study of samples from a well. She also exhibited several large maps showing gas and oil fields over the state. The Chairman requested that copies of these maps be sent to the Committee.

Ms. Oros stated the average depth of a gas well in Kansas is 2,800 feet. She showed some transparencies of maps, the first of which was a general geological map of Kansas. The next was the sub-surface map showing underground formations. The primary gas production field in Kansas is in the Hugoton area. There are impermeable beds that trap this oil and gas and keep it from flowing eastward. The next map was a cross section from Kansas City to Lawrence showing the rock formations leaning west. There followed exhibits showing "shoestring sands" where limited production is found; a drawing of an anticline where there is gas on top and water below; a map showing classification of rocks illustrating shales and limestone formations; a chart showing relation of drilling of wells to production; and a chart showing relationship of drilling to reserve estimates.

Mr. Hardy introduced Gary A. Waldron, Kansas Geological Survey, to speak on Federal Power Commission Regulations. Mr. Waldron presented a statement to the Committee. (Attachment No. II).

A member asked if expiring gas contracts are considered new gas. Mr. Waldron stated that it is considered new gas. Chairman Dyck asked if the FPC regulates price and production amount on interstate lines only. Mr. Waldron stated they do not regulate the amount, that is done by the Kansas Corporation Commission. The price is regulated by the FPC. Chairman Dyck asked if it is true that other states also regulate the volume and Mr. Waldron stated that other states do regulate their volume of production.

Dr. Robel stated that much of what happens in the legislature will depend on what happens in federal legislation. He pointed out to the Committee that a former member of the Kansas Geological Survey is now Director of the National Gas Survey, Edwin Goebel.

Mr. Lewis Brock of the KCC stated that he had asked Lester Wilkinson to appear and testify before the Committee but that he is in the hospital and could not be here but that he would be glad to come before the Committee at a future date if they should so wish.

Mr. Hardy introduced Dick Carlisle of the Kansas Corporation Commission. Mr. Carlisle spoke on "State Regulations". He explained some of the history behind gas legislation including the regulations on spacing of wells. He stated that the Commission may establish market demand for a field. Every six months, in March and September, the KCC holds market demand hearings. Several factors are taken into consideration including how much a field can produce without harming it. Allowables are established and each well in a field gets its share.

A member stated that the Committee had several inquiries from citizens regarding companies discovering gas reserves then capping the wells and holding them for higher prices. He asked if there are wells being capped and held back and not asking for connection to a pipeline? Mr. Carlisle stated they were not sure. He advised that all KCC gets is a notice that they are going to drill and that it is hard to tell from completion reports whether the well is capable of producing.

Dr. Hambleton stated that Senator Jackson had looked into this and an analysis was given to the Interstate Compact Commission that there are virtually none in Kansas.

Mr. Brock stated that the only ones they know of are due to no lines being available to connect to.

A member asked if, in fact, the KCC did not regulate price by the regulation of flow. Mr. Carlisle stated that yes, the income from wells was probably regulated by the allowables.

The meeting recessed at noon to be reconvened at 1:30 p.m.

Afternoon Session

The meeting was called to order at 1:30 p.m. by Chairman Dyck. Dr. Hambleton requested the floor for the purpose of making a statement.

Dr. Hambleton explained the difference between permeability and porosity of rocks. He also explained the differences between trapping conditions and the continuous production system as exists in the Hugoton area. He stated they feel there are many untouched areas in Kansas where gas could be found but that it would take good economic conditions to make people invest in wells.

Chairman Dyck asked if the making of oil and gas is still occurring today? Dr. Hambleton stated they think it is still happening in the delta regions but that it takes appropriate conditions.

Representative Southern asked if the reserve figures are based on first and second recovery or are they actual reserves or recoverable reserves? Dr. Hambleton stated they have included secondary recovery.

George Sims explained that tertiary projects include water flooding, gas flooding, and other techniques. They are now using detergents and similar materials to which surface the oil and gas will adhere. Each new condition must be tested.

Chairman Dyck asked if two different persons could own the mineral rights and the royalty rights. Ms. Paul responded yes.

Representative Foster stated that the interest in minerals is severable from the ownership of the surface of the land. He clarified the difference between surface and mineral rights. Usually 1/8th of the production is the owner's share.

Senator Moore asked that if you will the mineral interest, do you control the right of leasing? Dr. Hambleton stated no, you do not control the leasing of the property.

Dr. Hambleton introduced Shirley Paul, Petroleum Geologist, to speak on the subject of "Production and Distribution of Natural Gas from Kansas Gas Fields, 1973." (Ms. Paul distributed a printed handout to the Committee.) She referred to pages 3 and 4 showing interstate pipeline movement of gas in the United States. She pointed out that six states sell gas to other states, Louisiana, Texas, Oklahoma, New Mexico, Wyoming and Kansas. The rest of the country gets gas from these six states and also some from Canada. (A copy of the report used by Ms. Paul is on file in the Legislative Research Department.)

Shirley Paul reported that Kansas production was about 900 billion cubic feet at the last report. Actual consumption was 500 million cubic feet. About 79% comes from the Hugoton area. Production from the eastern part of Kansas is used almost exclusively for domestic purposes. She referred to pages 4 and 5 of the handout. She pointed out that our largest gas company is Cities Service. They have a 26-inch pipeline running from Hugoton to northeast Kansas. She pointed out the storage areas and explained that those areas are depleted fields that are filled with gas to be used later in the year. Cities Service sales in Kansas are 60%. She also pointed out that when gas purchased interstate is comingled with gas in the intrastate lines, it is all considered interstate gas.

Dr. Hambleton discussed S.B. 692 which has been passed by the Senate Commerce Committee and which would place intrastate

gas under federal control, i.e., new gas produced would be called interstate. Effect of the law would be that all new gas would be allocated by the FPC.

Representative Graber asked where the power of the KCC and FPC ends. Dr. Hambleton stated there are a whole series of court proceedings relating to this. The KCC regulates gas in Kansas going into intrastate pipelines, however, if this gas is comingled with any interstate gas, it all becomes interstate gas.

Ms. Paul referred the Committee to page 24 of her hand-out. She explained that the Kansas Gas Supply company operates separately from Cities Service and that their sales run about 32.3 billion cf. Also, Northern Natural is another large company as shown on page 27. They purchase about 215 billion cf.

Senator Janssen asked who determines whether it should be called natural gas or not? What would happen to manufactured gas? Could we still run it through these lines? Ms. Paul stated that yes, it could be run through existing lines, however, if it comingles with other gas it would come under FPC regulation. Manufactured gas is not, at present, under the regulation of the FPC.

Ms. Paul pointed out that she has taken each company operating in Kansas and tried to go through their sales, exchanges and transmission. Maps are included in the book. She also stated that of the natural gas reserves in the United States, Texas has the most, following in order are Louisiana, Alaska, Oklahoma, New Mexico, Kansas, California and Wyoming. Reserves are tested by drilling a test well, much the same as is done with oil. In the back of the book is a glossary of terms regarding proven reserves.

Chairman Dyck asked if it is expensive to liquify gas? Dr. Hambleton stated it is a relative thing. It was cheaper to transport gas from Alaska by pipeline than to liquify it. It costs about \$1.00 per Mcf for liquifying gas.

Dr. Hambleton introduced Carol Zarley, Research Associate for the Kansas Geological Survey, to present her report on "Supply and Demand and Effects of Curtailment and Deregulation". Ms. Zarley projected a graph showing natural gas requirements for dollar of output. She pointed out that the industrial requirement is 1.27 cf per dollar output. Farming requirement is low, .069, while the electric industry is very high, 438.80 cf for every dollar output. As an example she shows in grain milling production the requirement is 1.41 cf per dollar output. So for grain mills, 1 cf of gas will support 71¢ of output which provides a multiplier of 7.18. This information will be found in Jordan Emmerson's report. Farming,

according to Dr. Emmerson, has a requirement of .069 cf for every dollar of output. 1 cf will support an output of \$14.49. The multiplier for farming is \$1.97. She read a part of a report from the FPC guidelines regarding curtailments.

The Committee requested that Ms. Zarley send a copy of the written report showing multipliers and their effect on each of the industries as shown on her projected chart.

Ms. Zarley stated that a number of people think if we deregulate gas it will solve all our problems. She presented a supply and demand graph. She pointed out that when the supply accommodates demand we would have a steady price. As people get used to deregulation, they will be more responsive to supply and demand. She stated that everything she has seen shows that the price for gas with deregulation would be somewhere from 55¢ to \$1.00.

Mr. Sims stated the Department of Commerce has a film on this subject. He thought it would be available through Pete Amstead, 4th National Bank, Wichita, Kansas, and would try to secure it to show to this Committee.

Ms. Zarley stated that without deregulation and with priority we have only delayed the crisis in solving the problem for five or so years.

Dr. Hardy introduced Gary A. Waldron, Kansas Geological Survey, for a presentation on "Resources, Reserves, Production and Distribution Systems: National". A prepared sheet was handed out to each Committee member. (Attachment No. III.)

Mr. Waldron explained the relationship of these figures. He stated that under present economic conditions you cannot drill for non-identified reserves. He stated that the American Gas Association has been responsible for years for supplying figures on reserves to the FPC. The Hubbert figures shown on this page have been used by a number of analysts.

Ronald G. Hardy, Chairman of the Energy Analysis Committee, presented the attached handout "Exploring Kansas Energy Choices" (Attachment No. IV). He projected a graph showing Kansas production and projected requirements. He stated we can raise production or lower requirements to bring these graph lines together. The curtailment graph shows industrial allowance curtailed by 97% by 1980 leaving the remainder for residential use. Consideration should be given to regulating both the amount of gas required for electrical utilities and the amount for space heating and industrial heating from the year 2000 on. Mr. Hardy discussed a possible overall plan and time schedule for phasing in new energy materials:

1. Convert one-half of investor-owned utilities from natural gas to coal by 1980-85;

2. Convert remaining investor-owned electric generating plants to coal and require new residences to be heated electrically by 1990-95;
3. All new electric power to be generated with nuclear energy by the year 2000.

Mr. Hardy distributed a sheet illustrating natural gas production and consumption in Kansas. (Attachment No. V).

Dr. Hambleton stated this concluded their presentation. He stated it is felt that there are several things to be done to encourage industry to do more toward solving the natural gas crisis. There could be increased imports. Also, in a telex to the National Governor's Conference in New Orleans, the FEA asked for support for the national association's effort for a conservation effort in the states.

Mr. Harold E. Wills, State Fuels Coordinator, presented a prepared statement. (Attachment No. VI).

Chairman Dyck asked what we are doing at the state level in our efforts to conserve energy? Mr. Wills replied that his office was involved in an extensive news media campaign to emphasize conservation efforts.

Dr. Hambleton stated that states have been unwilling to get into conservation efforts. Another factor is the difficulty in selling the public on a conservation program. He said there is not a worldwide interchange of product at this time. It is an import-export problem. It is a problem of price, i.e., whether we are willing to buy at OPEC prices or become self-sufficient.

The meeting was adjourned at 4:30 p.m.

June 13, 1975

Morning Session

The meeting was called to order by Chairman Harold Dyck at 9:00 a.m., in Room 519-S. All members were present with the exception of Senators Doyen and Janssen and Representative Brewster.

The Chairman introduced Donald P. Schnacke, Executive Vice-President of the Kansas Independent Oil and Gas Association. Mr. Schnacke passed out an outline of the program to be used at this meeting. (Attachment No. VII). He stated his association was founded in 1938 and represents 652 natural gas producers in Kansas. There are 326 known producing gas fields in 39 counties in this state. He stated that their objective in appearing before this Committee would be participation in all these deliberations throughout the summer and fall. They desire to assist this Committee in coming to grips with the problem of the natural gas crisis.

The first speaker was James Gear of Gear Petroleum Company, Wichita. He exhibited a map showing the oil and gas fields in Kansas. He stated there has not been much progress since 1966 due to the depressed price of the product. KCC is responsible for conservation of the natural resources, but as in the case of the Spivey Grabs field, it is almost impossible to regulate a field like that. The bulk of Kansas gas and oil is in the western half of the state. There is a small amount of gas throughout the central area of Kansas where gas has been trapped and it has only recently become economical to produce. The cost of drilling is directly related to the depth of the well and around central Kansas it costs from \$40,000 to \$50,000 to drill and equip a well. In western Kansas it costs from \$100,000 to \$150,000 to drill. He stated the most important thing to remember is that gas will be produced in a relatively small part of the state.

Mr. Gear discussed the general geology of Kansas. There are more and younger beds on top of the older beds in western Kansas and this creates more potential producing formations for future production. There is a small potential in northeastern Kansas but it has not been developed. Future gas reserves will be deeper and more expensive to produce. Gas reserves are those reserves of gas which are economical to produce. As the price of gas gets higher, we can develop out reserves. Exploration costs are much higher and production must wait for higher prices.

Representative Southern asked what Mr. Gear thought gas should sell for. He replied that \$1.00/mcf is the figure used most frequently.

The next conferee was Robert C. Spurlock, Clinton Oil Company, Wichita. He presented a prepared statement to the Committee. (Attachment No. VIII).

Senator Simpson asked why our price for gas has not increased in Kansas. Mr. Spurlock stated it was a lack of competition in intrastate pipelines. Representative Graber asked if Mr. Spurlock would object to a priority system? Mr. Spurlock stated he would have no objection. Mr. Spurlock stated that Clinton Oil Company has dedicated a portion of its gas to Wichita. Also, they have been in steady negotiation with KPL the last three to four months and have reached an agreement for the contract. The price that was offered was \$1.50/Mcf.

Representative Southern asked if this was similar in dealing with other production in this area. Mr. Spurlock stated that KPL wanted everything to be the same and as a result of that request all meetings have been open.

Chairman Dyck stated that he noticed an attempt was made to work out a contract with Anadarko to use their transmission lines. Does this line have the capability of transmitting gas to El Dorado as well as Wichita? Mr. Spurlock stated that any comment of his would be 3rd, 4th, or 5th hand but that he understood from Wichita Industrial that they had reached agreement with Anadarko for transportation, and they do have the capability of transmission.

Senator Burke asked if the consumers of intrastate gas in Oklahoma are paying in excess of what Kansas users are paying? Mr. Spurlock stated he did not know. The pipeline companies are paying more. Oklahoma has allowed an automatic pass-through on transportation cost. Gas has only gone up 4¢ over the last few years which is lower than the national average.

Mr. Spurlock explained that Oklahoma does not regulate at the well head and does not regulate purchase of gas. They do regulate what the utilities can charge. In Oklahoma they have allowed an automatic pass-through for cost of supply. Kansas has not allowed that pass-through. Everytime the price increases, they have to go to KCC and ask for right to pass this cost through to the consumer.

Larry Pain spoke briefly on the proposal before the FPC with regard to carrying gas from well head and only through interstate pipelines.

Chairman Dyck said that, in essence, Mr. Spurlock is saying that, since KPL is the major purchaser in the Hugoton field, this creates a lack of competition. How many interstate lines are getting gas from the Hugoton field? Mr. Spurlock stated 12 lines get gas from Hugoton areas.

Roger Messman, Messman-Rinehard Oil Company, addressed the Committee. He stated his remarks have been confined to the cost of an exploratory program and how they have increased over the past two years. Cost in exploration projects have increased about 150% to 200%. One item alone, the seismograph, has increased from \$100 a shot point to \$280 to \$300 a shot point. Drilling costs have escalated. The price per foot to drill increased from \$2.15 for a 3,500 foot hole in Barton County two years ago to \$4.95 on a recently drilled hole. This represents an increase of over 100% over the two-year period. Completion costs have increased. The shortage of new tubular goods has been the principal factor. Seamless 5½ inch pipe cost \$1.50 per foot two years ago and recently it cost as much as \$6 per foot. This is used pipe, not new. New pipe is not even available. Operating costs are up about 150%. This applies to labor costs, servicing costs, etc. During the past 12 months the national average cost of drilling per foot has increased from \$22 to \$26 per foot.

Senator Moore asked if the national average included the drilling of dry holes? Mr. Messman replied that it includes figures for every foot drilled. The Kansas cost is on the average of \$12 per foot.

Mr. Anderson stated that the Committee should add the footage cost of dry holes to the cost of producing wells. The \$12 average in Kansas does not include drilling of dry holes.

Representative Foster asked Mr. Messman to tell the Committee what they do to drill a well. Mr. Messman stated that when you contract for drilling the first thing is to get a bid on the cost per foot to drill. In addition, the contractor gives you a daywork rate. Daywork figures has increased from \$800 per day to \$2,400 per day. Included in daywork is circulating for samples and the drill stem test. Testing service is what you call a third-party service. Other third-party services include the supply of mud used to prevent the caving in of the hole.

Representative Farrar asked for the cost to have a gas well "fracked". Mr. Messman stated it depends on the size of the "frack", but the average cost would be \$5,500. "Fracking" is a method to increase the permeability and porosity to stimulate flow.

The next conferee was R. D. Randall, General Counsel of Petroleum, Inc., of Wichita, Kansas. His subject was "Governmental Regulation of Natural Gas Industry". (Attachment No. VIII A). He stated that they are a major producer in 10 states. They do explore extensively in Kansas, having about 100 gas wells in Kansas about half of which are interstate and half are intrastate. He discussed the history of the 1938 Natural Gas Act which regulated transportation and sale of natural gas. The FPC method of gas producer regulation is through price. In 1954 they used the cost-of-service concept. In 1961 they used the area rate concept. In 1974 they had to scrap the area rate concept and move to the national rate concept. The producer had to get a certificate to sell gas from any well. The FPC also approved temporary contracts that were conditioned to refunds. Drilling with old contracts with general low prices did not justify exploration. The FPC finally raised the area rate from 12¢ to 18¢ up to about 40¢. Then a year later jumped it to 50¢ and six months later to 51¢. Mr. Randall stated that producers should not be regulated by price. Kansas has not had the activity of some other states but has had a lot of increased activity in the last few years. We suffer from lack of markets, not just lack of pipelines.

In answer to Mr. Rogg's question asking what the purpose of the dual pricing system is to be, Mr. Randall stated it would hopefully keep the supply available and the price down.

Representative Foster asked Mr. Randall to discuss natural processes of exploration. Mr. Randall said you first consider geology of the area. You must consider the gas market because if there is no way to sell the gas it is not worth anything. His company has wells in Canada and Wyoming that are "shut in", in other words they are too far from a pipeline to sell the gas. The availability of a market is crucial. It also

makes a difference whether it is interstate or intrastate gas because of price. His company is exploring very actively for gas particularly in Texas, Oklahoma and Wyoming, and the main consideration is price. They are drilling in higher priced areas and selling primarily intrastate.

Mr. Schnacke called the attention of the Committee to SCR 23 introduced during the last session of the legislature that asked Congress to deregulate gas. He stated that the passage of this resolution is of utmost concern to them.

Mr. Bob Williams, owner of the Imperial Oil Company, and Chairman of the Natural Gas Committee for KIOGA, was introduced as the next speaker. Prior to reading his prepared statement, Mr. Williams suggested that this Committee have a visit with the Kansas Economic Development Commission and find out what they can do. He stated that we have only one intrastate line in the prime gas producing area, Hugoton, and that we need to get several lines out there. Also, the price of 51¢ will not pay for exploration wells to be drilled. His company has drilled 13 wells since the first of the year and finds they cannot afford it at the 51¢ price. In the Council Grove or other shallow well areas, wells can be drilled and sold at 51¢ but they are not expensive wells. When they are looking at deeper exploration they must have a certainty of price. Mr. Williams then read his prepared statement entitled "Pending Federal Legislation". (Attachment IX).

Representative Foster asked why the Kansas independents haven't gone into the pipeline business themselves. Mr. Messman answered that back in 1960 they drilled in an area where they discovered sour gas and they built a pipeline. They were forced to sell as they had to become a utility or go out of business.

Representative Foster asked what do they expect KEDC to do? Mr. Williams stated that they are specialists in the area of keeping business in Kansas and developing new industry. They have the expertise for these matters. Representative Foster pointed out they have no money for this type development. Mr. Williams suggested they could encourage companies to raise money through industrial revenue bonds.

Senator Burke asked where the 13 wells were located, how many are producing, and what type of line they will go into. Mr. Williams replied the wells were located in Barber and Seward Counties. Ten out of the thirteen wells are producing. They will go into the interstate line.

The next speaker was Bill Wells, District Manager for the Texas Oil and Gas Company. The district office is located in Wichita and the main office in Texas. He read a prepared statement entitled "Governmental Activity in Other States". He commented that if S.B. 564 is adopted, drilling in Kansas will practically cease. He urged the Committee to vote against S.B. 564.

The following conferees submitted written statements to the Committee opposing the regulation of interstate gas in Kansas:

Roger McCoy (Attachment No. X)
Jack Gurley (Attachment No. XI)
Byron Thomas (Attachment No. XII).

A closing statement was made by Don Schnacke. He first submitted to the Committee copies of his statements as presented to the Senate Ways and Means Committee during the last legislative session (Attachment No. XIII), and a copy of his remarks presented on April 26, 1975 to the Governor's Natural Gas Supply Conference (Attachment No. XIV).

Mr. Schnacke commended the Committee on their approach to this problem and believes they are handling it in the right way to reach a solution to the problems. He stated the big issue is S.B. 692 in the U.S. Senate and they have been very active in that area. They are pleased with Senator Pearson's bill and they believe his approach is a better one. He suggested that the use of intrastate lines as common carriers be further explored. The 1975 Legislature authorized 625 cities in Kansas to purchase gas and interstate lines could be used to help transmit this gas to the purchasers. He recommended that the Corporation Commission should permit the automatic pass-through of cost of supply. He stated he thinks the newly created Kansas Energy Office will be useful. Mr. Schnacke stated he would be attending all meetings of this Committee to be of whatever help he can.

Meeting recessed at 12:05 p.m. to reconvene at 1:25 p.m.

Afternoon Session

The afternoon session was called to order by Chairman Dyck. All members present with the exception of Senators Doyen and Janssen.

The Chairman introduced Bob Anderson from Midcontinent Oil and Gas Association. Mr. Anderson stated that the mere fact that this Committee is studying the intrastate gas situation is already having an effect on the producing community. He suggested that if a decision is to be made, that it be announced so that business can get on and have some reason to believe that Kansas is not going to regulate the price of gas. He urged the Committee not to regulate the price of gas.

Mr. Anderson introduced Larry Pain, Attorney for Phillips Petroleum Company, Bartlesville, Oklahoma. Mr. Pain stated he did not have a prepared statement but had brought along a great deal of material prepared by a group studying policy covering regulation, or deregulation, of gas by the federal government. He pointed out that gas has been price regulated for 21 years. The current legislation has failed by not maintaining an adequate supply through restrictive price regulation. All three current members of the FPC, as well as two recently resigned members, are on record as favoring decontrol of new gas prices at the federal level. Former Commissioner Rush Moody resigned a year before his term was up in disgust over the FPC not taking the steps it needs to.

Senator Moore asked why the FPC is continuing to support pricing regulation if they want to repeal it? Mr. Pain stated that in the view of the law, price is to be based on consumer cost. Gas production will be an inherently increasing cost as we are having to move our search for gas to more expensive areas. They have recently found gas in Oklahoma at about 19,000 feet. Kansas is the only state considering this kind of producer regulation and it would be unwise for Kansas to limit gas with regard to intrastate regulation. He recommended the Committee not pass the bill they are considering (S.B. 564).

Senator Bell asked how soon profit would be used for exploration? Mr. Pain stated that gas well footage drilled in 1974 had increased. Exploration has more than doubled since 1960. These results were not brought about by price incentives in the interstate market, but by price incentives in intrastate market.

Senator Bell also asked who determines when profit goes into exploration? Mr. Pain stated that Phillips made profits last year of four hundred million dollars and that they are hoping to invest in new projects approximately nine hundred million dollars this year.

Representative Brewster asked for Mr. Pain's comments on the fixing of rates. Mr. Pain stated that it is the rate that forces us into ever decreasing exploration. The FPC has established a two price system for gas - a lower price for old gas and that keeps incentive down. The price for new gas is higher and based on historical cost and study. The result is that you must drill more profitable wells.

The next speaker was George Sims of Mobil, Hugoton. He commented briefly on deregulation and priorities. He stated that other energies cannot compete with gas because of the regulated supply at low prices. He also stated you could only give priorities until you run out of product. When you run out of the product you will have to meet the crisis.

Representative Farrar asked if Mr. Sims favors any priority system. He answered no, only perhaps on a temporary basis. Representative Farrar then asked if the company would decide who would get the gas. Mr. Sims answered by saying that natural gas is the only energy being used and as long as people get it at the lower price they won't look at other energies. Representative Farrar then stated he would favor looking at a priority system so that interruption of service for companies would be equitable.

Senator Burke asked if we are not going to run out of natural gas at some point? Mr. Sims answered yes, at some point we will. He believes given the free enterprise system we will resolve this problem and be using atomic or solar energy. At present we are delaying the point in time when we have to look at other systems. Senator Burke then asked if it would not be appropriate to establish some sort of priority system and decide which companies will be cut off first. Mr. Sims stated he believed a temporary system might be necessary. He believes if people are curtailed they will take care of themselves by searching for other energies. Senator Burke stated he was going to be hard to convince that a priority system would not need to be established in Kansas.

Bob Anderson introduced as the next speaker, Mr. Richard Byrd appearing on behalf of Mesa Petroleum Company, the largest intrastate seller of gas in Kansas. He stated his principal concern relates to processing gas. Gas in its natural state contains several types of hydrocarbons: methane, butane, propane, nitrogen and helium. S.B. 564 would prohibit the stripping of these several hydrocarbons. Mesa has a stripping plant at Hugoton for propane and butane and proposes to build a new plant to strip methane, propane and butane, and by keeping the nitrogen out they can do this. Liquid hydrocarbon can be stripped and still maintain BTU contract requirements. Eliminating 19% of the nitrogen from the gas would increase the efficiency for domestic use. The value of liquids is such that it has prompted several states to require (Texas particularly) removal of liquids from gas before it is sold. Mesa has promised that if this plant is built we will offer these liquids first to Kansas consumers. Of liquids now processed in Kansas, 72% are used for residential purposes, 19.5% for agriculture, 5.5% for industrial and 3% commercial. He feels this Committee would not want to legislate away peoples' rights to use the more efficient hydrocarbon liquids. The FPC has set up categories for priorities. They have asked for priorities for Cities Service. On June 24 they will eliminate all category 8 customers and curtail their service to 30% of demand for the next three months. The problem arises if a state says one type of customer is a 6 and the federal government says it is another category. We must have legislation for producers to have authority to regulate who gets gas.

In discussion regarding the loss of volume by stripping natural gas of the "heavies", Mr. Byrd stated their contracts require certain BTU volume and distributing companies must deliver gas that has that minimum amount of BTU.

Senator Simpson commented that he had strong feelings that industry is certainly not a place where we should be using natural gas. He asked what he thought about cutting off industrial use in the near future? Mr. Byrd stated some industries cannot use coal but some can, especially for boiler use.

Mr. Byrd stated he would appreciate an opportunity to put into the record the relative value of liquids taken out of gas.

The Chairman thanked those attending and invited their specific recommendations for legislation. He announced permission for the addition of one member to the staff with expertise in the field of energy. He announced that they would endeavor to secure the Department of Commerce film for showing at the next meeting.

Meeting adjourned.

Prepared by J. Russell Mills, Jr.

Approved by Committee on:

9-8-75
Date

THE NATURAL GAS SITUATION ¹

R. J. Robel, Chairman
Advisory Council on Energy and
Natural Resources

Nobody needs to tell you that we have problems with supplies of natural gas. I am most pleased to note that the Honorable Robert Bennett considers natural gas supplies a serious problem for Kansas and placed it in the highest priority ranking for study by interim committees of the Kansas Legislature. This nation does have serious problems with supplies of natural gas----we are already experiencing significant natural gas curtailment schedules nationwide. Even though we in Kansas have fairly good reserves of natural gas, we too have experienced problems of deliverability, resulting in industrial curtailments.

This nation is facing a general energy problem because its leaders focused on only one aspect of energy at a time. For years we were concerned only with keeping prices of natural gas low, we imported foreign oil because it was cheaper, we switched our electrical generating plants from coal to oil and natural gas because it was cleaner and cheaper, we built high speed interstate highways for ease of travel, we subsidized air and truck transportation at the expense of more energy efficient rail and barge transportation, and so on. I trust we will not continue to be myopic in our approach

¹Remarks presented 12 June 1975 to the Kansas Legislative Interim Committee on Natural Gas, Room 529 of the State House, Topeka.

to our energy problems. I respectfully urge that as you wrestle with our natural gas problems, you consider natural gas supplies as only a portion of our overall energy problem, a problem which involves both rates of consumption and rates of production. For your information, I am attaching to my remarks today, a more general overview of our national energy problem.

Since Dr. William Hambleton and the staff of the Kansas Geological Survey will be presenting a detailed analysis of production methods, state and national reserves, and other such technical information, I believe my time can better be spent briefing you on broader issues such as national curtailment schedules, some pending legislation, and political moods in Washington.

As you are aware, the natural gas supply problem is not something that developed overnight. The problem is complex and inter-related. Our Governor sponsored a natural gas supply conference in late April 1975 to obtain some facts on natural gas supplies. Each of you will be provided a summary of presentations made at that conference. Facts presented at the Governor's Natural Gas Conference will be of use to you as you consider actions for state government.

The facts behind our overall gas supply situation are cause for grave concern:

1. not since 1967 have the interstate lines increased their net reserves.
2. in 1967, interstate pipelines had 198 trillion cubic feet (Tcf) of natural gas in reserves; while at the end of 1974 those reserves had dropped to between 120 and 125 Tcf (almost 40% less reserves).
3. in 1968, natural gas production exceeded reserve additions

by 3 Tcf; in 1974, withdrawals exceeded reserve additions by 13 Tcf.

Thus, for seven consecutive years, the interstate natural gas system has been eating away at natural gas reserves. The reserves are not being systematically replenished, therefore, our reserve supplies are being depleted. A result of this exploitation is that our interstate system can no longer meet the demands of its customers. Curtailments of firm customers began in 1970, and today have increased to between 15% and 20% of total marketed production on the interstate system. In 1974, 19 of the nation's 44 major pipelines curtailed firm service; this year 25 of the 44 pipelines will be curtailing firm customers.

Total firm requirements in the United States amount to approximately 15 Tcf; only about 12.1 Tcf will be available this year, therefore, average curtailment will approximate 19%. However, the shortages will not be spread equally across the nation; customers served by some interstate lines will be curtailed more drastically than others. For example, firm customers of the United Gas Pipeline Co. in the south central and southeastern states will experience a 48% curtailment in 1975-76. Other interstate systems which will experience 25% or higher curtailments during 1975-76 are listed below.

	<u>'75 - '76 Curtailment</u>
United Gas Pipeline Co.	48%
Trunkline Gas Co.	47%
Transcontinental Gas Pipeline Co.	40%
East Tennessee Natural Gas Co.	36%
Eastern Shore Natural Gas Co.	33%

'75 -'76 Curtailment

Arkansas - Louisiana Gas Co.	30%
Columbia Gas Transmission Corp.	28%
Cities Service Gas Company	26%
Texas Eastern Transmission Corp.	26%

Obviously, curtailments of interruptible customers are, and will continue to be greater than for firm customers. In 1973-74, interruptible customers suffered 38% curtailment; in 1975-76, they can expect to be curtailed 60%.

The outlook is not good, in fact, I personally feel it is gloomy at best. In 1973, this nation's interstate pipeline system delivered about 14 Tcf of natural gas to its customers, that deliverability will probably decline to 11 Tcf in 1976, and to 9.5 Tcf by 1978. The 9.5 Tcf is only 63% of the requirements of today's firm customers.

Few people have faced the real problem of increased costs of less gas flowing through existing pipeline systems. If we assume it costs 50¢ per Mcf to transport natural gas from the well to the customer when the lines are full, handling of that natural gas could cost as much as 93¢ per Mcf if the pipeline volumes are reduced by 45%.

Because of the declining reserves of interstate supplies of natural gas (due mainly to Federal pricing mechanisms and reserve depletions), some consuming parts of the country are turning toward the intrastate supplies of natural gas available in the producing states. Likewise, within producing states, competition between the intrastate and interstate markets is becoming acute.

A bill which should be of great interest to each of you is S. 692, introduced into the U. S. Senate by Senators Hollings (South Carolina) and Magnuson (Washington). S. 692 is an exceedingly complex

bill which, if any of its major provisions are enacted, will directly effect your deliberations. A 10-page summary of S. 692 is attached. Because of time constraints, I will not discuss the bill in detail today, but rather, will mention only a few of its major provisions. S. 692 was reported favorably out of the Senate Commerce Committee on 6 May 1975. The Hollings - Magnuson bill proposes to:

1. create a complex multi-tiered price control system for new natural gas.
2. extend Federal control of interstate natural gas to intrastate natural gas.
3. prevent natural gas produced on Federal lands from being available (as intrastate gas) to the state in which it is produced.
4. prohibit joint exploratory and production ventures by major oil companies . . . a step which could result in greater concentration of natural gas ownership rather than less.
5. essentially nationalize the pipeline system, and negate the successful efforts of some pipelines to obtain supplies of natural gas for their customers.
6. extend FPC pricing authority to some synthetic natural gas.
7. extend Federal controls to many areas previously under state jurisdiction, i.e., retail price of natural gas, exploration and production reporting requirements, state-owned royalty gas, end use priorities, etc.
8. infringe on the freedoms and normal business activities of producers.
9. create a condition which is not economically suitable for production of natural gas costing over 4¢ per²Mcf to produce.
10. favor major producers, and discourage independent producers.

I doubt if S. 692 will be passed in its entirety, however a modified form could be adopted. Likewise, some of the provisions of S. 692 could easily end up as amendments to one of the innumerable energy bills now circulating in the House and Senate. Shortages of natural gas in the consuming states coupled with depressed economic conditions are causing great pressures for politicians to obtain supplies of cheap natural gas for their constituents. Politicians from consuming states are seeking any source of natural gas, including here-to-fore untouchable intrastate supplies.

You may be interested to learn also that natural gas currently used in agriculture is being sought by the "have nots". The first attack was made on natural gas used to pump irrigation water in the Texas, Oklahoma, New Mexico, and Kansas area. Governor Bennett prepared a statement (attached) defending the use of natural gas to pump irrigation water in Kansas. I travelled to Washington and presented the Governor's statement at Federal Power Commission hearings on 20 May 1975. Much to my surprise, I was confronted and questioned at the FPC hearings by 7 General Motor's lawyers who were trying to reduce the priority of the natural gas now being used for irrigation agriculture, so that it would be available for general industrial use.

I believe S. 692 and the General Motors attempt to acquire additional natural gas for industrial use, reflects the mood of consuming states relative to natural gas, i.e., supplies are insufficient to meet demands, therefore, let us do anything in our

power to capture some cheap natural gas for our specific use.

Hopefully, these brief comments will be of help to you as you begin your important deliberations.

Thank you.

FUTURE ENERGY CONSTRAINTS¹

R. J. Robel, Chairman
Advisory Council on Energy and
Natural Resources

It has been a year and a half now since the OPEC cartel flexed their composite muscles and imposed the oil embargo on the industrial nations. This nation squirmed a bit, felt some minor temporary discomforts, formed a few new agencies, created some short-lived energy Czars, engaged in political dialog and even threatened to use force to acquire oil if our shortage became severe enough. We muddled through the fuel shortage during the winter of 1973-74....thanks to mild weather. We are still getting by, but, today this Nation faces an energy situation more serious than we had during the summer of 1973, and worse than during the oil embargo. Today's energy problems are being compounded by citizen complacency, political rhetoric, bureaucratic red tape, short-sighted provincialism by certain segments of our country, and untenable economic policies which boggle your imagination. Today, 20 months after the OPEC imposed petroleum shortage, we still do not have a national energy policy for this country. Instead we see the development of regulations and decisions which may in fact worsen our energy problem rather than resolve it.

Let me emphasize right now, our energy problems are real, and they are most serious. I personally feel our energy problems pose greater hazards to this country than the current runaway inflation because most people do not desire to accept the facts concerning our energy problems, and also, most people do not realize the potential economic impact of an energy shortage on an industrialized nation. Our energy shortage can be likened to a ticking time bomb----it is not a matter of "will it explode?",-----but rather, "when will it explode?" The energy problem facing this nation is basically one of imbalance, that is, domestic

¹ Address presented 7 June 1975 to the 16th Annual meeting of the Kansas Council of Chapters, Soil Conservation Society of America, Theme: Energy for Land Use, Food and Living. Manhattan, Kansas.

energy consumption is exceeding domestic energy production. Our current energy problem is fundamentally one of petroleum and natural gas, with a complex mixture of politics and economics.

Most of you are aware that petroleum production in this country has been declining steadily since the late 1960's. We are becoming more and more dependent on expensive imported crude oil and refined products to make up the difference between our domestic production and domestic consumption. Today the crude oil production in the United States amounts to approximately 8.4 million barrels per day, 11 percent less than the 9.4 million barrels per day which was produced in the summer of 1973. In December of 1973, we had to import petroleum at the rate of 5.1 million barrels per day to meet our domestic consumption, this past December we had to import 6.9 million barrels per day, that is an increase of 35 percent over December of 1973. In the summer of 1973, 38 percent of the petroleum available in this country was imported, in February and March of 1975, 43 percent of the petroleum available in this country was imported. Increased prices of foreign oil coupled with our greater reliance on foreign supplies, has resulted in higher energy prices for every segment of our society, a serious balance of payments problem for this nation, and a greater vulnerability to actions by foreign powers and cartels. We now pay \$75 million per day for foreign petroleum; that amounts to more than \$25 billion per year. Just to give you a comparative figure, if we sold all of the 1974 Kansas wheat crop for \$4 per bushell, the income would be approximately \$1.5 billion. People who feel we can simply trade crops for foreign oil need to examine their figures first.

As I stated earlier, our energy problem is a simple imbalance between production and consumption. We can liken it to your personal budget when spending exceeds earnings. The possible solutions to your budget problem are obvious;

either decrease spending, and/or increase earnings. A long-term solution to our energy problem can only be attained by attacking both sides of the equation, that is, reducing energy consumption while at the same time increasing energy production. However, this is not as easy as it sounds.

As far as increased production goes, almost everyone agrees that refineries and deepwater ports must be built---just build them somewhere else. Nuclear power plants hold promise, but don't build them too close to my home. On the whole, offshore drilling holds great potential.....but don't put the platform in my view, or drill off my coast, or pipe the crude to my shores.

The same viewpoint applies to reduced consumption: lower speeds and fewer gadgets on a car give better gas mileage -- but don't encroach on my freedom to drive how and what I want. Sure, mass transit systems reduce fuel consumption.... but don't infringe on my right to drive my car to work. Agreed, storm windows and proper insulation reduce fuel waste, but don't establish building codes which require me to include these energy conservation measures in the home I build.

We simply cannot afford the luxury of automatic opposition--opposition to reducing consumption and opposition to increasing production. Automatic opposition will significantly delay the solution to our energy problem.

The Cause of Our Problem

Let us digress now and examine some of the causes of our current fuel shortage. First I want to review a few of the reasons for increased fuel consumption. I am not inferring that they were or are incorrect or bad policies or actions, but rather, each has contributed to our increased fuel consumption in the United States.

1. Price of Fuel. Until a year ago, energy was a bargain compared to most other items. The price of energy, relative to the prices of other goods and services actually declined during the 1960's. Low prices encouraged

inefficient usage of energy.

2. Rate Structures. Rate structures for natural gas and electricity prompted more consumption by offering large-volume users a significantly lower price per unit of energy than small users.

3. Promotional Advertising. Mass media advertising encouraged the use of energy-consuming goods such as automobiles, air conditioners, home appliances, electric heating systems, frost-free freezers, color televisions, petrochemical products, etc. Obviously, the more of these products in use, the more energy is consumed in their operation.

4. Interstate Highway System. Construction of 4-lane Interstate Highways encouraged a rapid increase in inter-city, high-speed auto travel. Higher speeds require larger cars for comfort, both of which (vehicle speed and weight) increase fuel consumption. A 5,000-pound car consumes almost twice the fuel of a 2,000-pound car -- a 1975 "intermediate-sized" car weighs about the same as did the 1972 "full-sized" model. In 1960, total passenger car mileage was 550 billion miles, compared to 1.03 trillion miles in 1973, an increase of about 480 billion miles.

5. Truck and Air Transportation Subsidies. Public expenditures for road and airport construction plus military development of aircraft later used for freight and passenger travel, were in essence subsidies to truck and air transportation. These subsidies encouraged a shift of freight away from rail transport. It requires more than twice as much fuel to transport a ton of material by truck than it does to transport a ton of material by rail, and about 10 times as much to ship by air compared to rail.

6. Passenger Air Fares. Between 1950 and 1970, air fares increased by only

8%, while during the same period, bus fares increased by 90% and rail fares increased by 47%. These price shifts stimulated air travel and discouraged more energy-efficient bus and rail travel.

7. Wage Increases. A combination of steadily rising wages and investment tax incentives, encouraged industry to expand with energy-intensive capital equipment. Such economic forces reduced reliance on expensive manpower, but increased reliance on energy consumptive machinery.

8. Suburbia. Encouraged by tax incentives for home owners, the urban sprawl has resulted in soaring use of fuel for commuting by the single-family dweller. In addition, poorly constructed single-family dwellings tend to be large consumers of energy, i.e., they tend to lack insulation and storm windows, and contain much energy inefficient equipment, etc.

Many additional examples of actions which have contributed to increased energy consumption could be cited, however suffice it to say, many factors are responsible for the increased energy consumption in this nation. Let us now turn our attention to actions which decreased, or at least failed to increase petroleum energy production in this country during the last decade.

1. Foreign Tax Credits. Allowing oil companies to subtract payments to foreign governments from their U.S. income taxes, became a great incentive for oil production abroad -- rather than at home. During the 1950's and 1960's, such foreign tax credits to international oil companies were enough in most cases to eliminated U.S. income taxes on income from oil produced abroad.

2. FPC and Natural Gas. Federal Power Commission control of interstate natural gas prices has discouraged exploration. Costs of exploration for natural gas have continued to rise, however the price of interstate natural gas has been held at an unrealistically low level.

3. Price Controls. Federal price controls imposed in 1971 on fuels (as

well as other goods and services) distorted marketplace actions which normally balance supply and demand.

4. Federal Leases. Offshore oil and gas lease sales on Federal land were virtually halted after 1969 for a year and a half.

5. Safety. Implementation of the Coal Mine Health and Safety Act of 1969 resulted in lower productivity in underground coal mines. That Act combined with citizen concern against environmental damage from surface coal mining, resulted in little increase in coal production during the 1960's and early 1970's.

6. NEPA. The National Environmental Policy Act of 1969, requiring environmental impact assessment of major federal projects, caused delays in the construction of the Trans-Alaskan Pipeline, nuclear power plants, and other such energy sources.

7. Clean Air. The Clean Air Act of 1970 caused industrial and power plant operators to change fuels to meet sulfur oxide standards. This was a shift from coal, an abundant domestic energy source, to less abundant energy sources, natural gas and oil.

Most of these actions have been formulated around desirable social goals: environmental quality, higher standards of living, and the economic well-being of the nation. As seen in hindsight, our actions were not bad; rather, we simply failed to assess the total impact of our policies. We did not view energy consumption and energy production as an equation. We must now.

Gasoline Prices - Everybody's Concern

A result of the OPEC petroleum power play which I am sure has attracted your attention is one of fuel prices. We all know gasoline, diesel fuel, heating oils, and other petroleum products are more costly now than they were prior to the embargo. But few people understand why. Presented here is a breakdown of average gasoline prices in this country during June 1973 (pre-

embargo), and March 1975 (post-embargo). These prices do not include any of the gasoline taxes recently proposed by Congress.

<u>Costs of Gasoline (cents per gallon)</u>		
	<u>June '73</u>	<u>March '75</u>
Transportation to refinery and refining	5.3	5.5
Wholesaling costs (jobbers, etc.)	6.9	6.9
Retailing costs (local gas station)	7.0	9.0
State and Federal taxes	11.7	11.7
Crude oil	9.0*	24.7**
	<u>39.9¢/gal.</u>	<u>57.8¢/gal.</u>

*based on 70% domestic crude @ \$4.15 per barrel and 30% imported crude @ \$2.95 per barrel.

**based on 56% domestic crude @ \$8.27 per barrel and 44% imported crude @ \$13.01 per barrel.

It should be pointed out that small companies relying solely on local old domestic crude oil for refining can still sell gasoline for as low as 38¢ per gallon and make a profit while companies relying solely on imported crude oil must sell gasoline for at least 63¢ per gallon to even break even. Other fuels have shown similar increases in price. We will continue to see the cost of fuel rise as our local petroleum production decreases and we rely more on imported fuels. The President's recent energy-economic proposal could add another 12¢ to 20¢ per gallon to the price of gasoline.

How About our Conservation Efforts?

As you recall, the President made an appeal to the nation on November 1973, requesting that we reduce our energy consumption. From November 1973 on, the Federal Energy Office has monitored the petroleum consumption in the United States. Following is a summary of our usage pattern; comparing 1973-74 with comparable 1972-73 periods.

Post-Embargo vs. Pre-Embargo fuel usage in the United States. Figures in percent; 1973-74 usage compared with same months in 1972-73, i.e., -6.1 = 6.1% less gasoline used in November 1973 than in November 1972. FEA statistics.

	<u>Gasoline</u>	<u>Distillates*</u>	<u>Residual*</u>	<u>Jet Fuel</u>	<u>Weighted Averages</u>
Nov. '73	-6.1	-1.5	-6.5	-29.3	-7.1
Dec. '73	-8.7	-1.0	-2.5	-17.6	-6.7
Jan. '74	-13.1	-10.8	-16.2	-26.1	-14.3
Feb. '74	-13.7	-20.8	-25.6	-35.6	-19.4
Mar. '74	-8.8	-11.6	-23.4	-30.9	-13.8
Apr. '74	-6.3	-4.4	-22.7	-22.9	-9.8
May '74	-5.9	+2.3	-19.6	-16.9	-6.9
Jun. '74	-1.3	+10.3	-6.9	-13.5	-0.2

*"Distillates" are used for trucks, tractors, and home heating while "residuals" are used mainly for generation of electricity.

July 1974 on -- consumption of most petroleum products was equal to, if not greater, than consumption in 1973. During April 1975, our petroleum consumption was 6% greater than during April 1974.

Essentially these data show that the public responded quite well to the requests to reduce petroleum consumption. However, the response was of short duration. The conservation ethic was lost in March 1974 probably coincidental with the lifting of the OPEC oil embargo. Consumption from July 1974 to now, has been equal to or greater than our consumption during comparable periods of the previous year. That increased consumption coupled with our 6% annual decrease in domestic production causes us greater concern each day.

How about our Increased Reserves?

We all read the stories of refinery storage tanks overflowing, of the increased

reserve stocks of fuel oils and gasoline and so on. Yes, I will agree our reserve stocks increased when people used less. The refinery system in this country is designed to refine crude oil, not store the products. Thus when consumption decreases, stocks do build up, and storage tanks do overflow. Let's look more closely at the current status of these "increased stocks". I am afraid our past "extra inventories" gave false assurance to the average public. For example, at the end of May 1974, we had 226 million barrels of gasoline in storage: we had 208 million barrels in storage in May 1975 (18 million barrels less). The following is a comparison between our May 1974 inventories and our May 1975 inventories, and remember, our 1973-74 stocks were dangerously low.

Petroleum Inventories (million barrels)

<u>Products</u>	May 1975 levels minus <u>May 1974 levels</u>	1974-1975 <u>changes</u>
Gasoline	-17.4	-7.7%
Distillate fuel oil	- 2.3	-1.6%
Residual fuel oil	+ 1.8	+3.4%
Jet fuel	- 1.6	-4.9%

Relative to reserve petroleum stocks, this nation is in a worse position now than it was last year at the end of the oil embargo.

The Petroleum Outlook - Not Encouraging

The average American seems to forget that the petroleum shortages during the

summer of 1973 occurred five months prior to an Arabian oil embargo. Estimates which our Council made in September 1973 projected a 2.6% shortage of petroleum products for the winter of 1973-74. As you know, the Arabian oil embargo increased that winter fuel shortage to about 15%.

The potential of increased prices for crude oil stimulated drilling activity in Kansas during 1974. Increased drilling activity has been concentrated in known fields, not new areas. The total number of exploratory and development wells drilled in Kansas during 1974 was 2,917, up 864 over 1973, but, the success ratio was down. In 1973, the success ratio for exploratory wells- i.e., success of finding new oil or gas- was 18.7%; in 1974, success declined by about 30% to a success ratio of only 13.3%. In 1973, the chances of developing new production in areas of known reserves was 63.8%; in 1974 that success declined by 33% to a success ratio of only 42.7%. These are not encouraging signs, in fact, substantiate some of the more pessimistic predictions we have been making during the last few years. Oil production from Kansas wells was 66.2 million barrels in 1973; production dropped to 61.7 million barrels in 1974 (a 6.8% decrease).

The Natural Gas Situation -- Less Encouraging

If you feel I have presented a gloomy picture of the petroleum situation, let me just briefly review an even more serious situation, the supplies of natural gas. You are all aware of the natural gas usage in Kansas. Most of you have heard of the large Hugoton gas field in southwestern Kansas. The Hugoton field produces about 70% of the natural gas produced in Kansas. Natural gas is an important fuel in Kansas; 82% of our homes are heated with natural gas, and 78% of our electricity is generated from natural gas. In fact, 83% of our non-transportation energy is supplied by natural gas. Natural gas is used in many industrial processes,

it is used to manufacture anhydrous ammonia fertilizers, and to dry grain. For years, natural gas has been a very cheap fuel. Its price has been held at a level so low as to encourage wasteful use. The current price of interstate natural gas -- (51¢ per MCF) is approximately equal to crude oil at \$2.25 per barrel. The reserves of natural gas have declined rapidly due to high consumption, and lack of successful exploratory activity.

In 1959, our proven natural gas reserves in Kansas were 20.2 trillion cubic feet (we use approximately 640 billion cubic feet each year in Kansas). Five years later, our proven reserves were 18.0 trillion cubic feet, and by 1969, our reserves had declined to 14.5 trillion cubic feet. At the end of 1973, our known natural gas reserves were down to only 11.7 trillion cubic feet---and we are withdrawing from those reserves at a rate of almost 1 trillion cubic feet per year. Last year, we punched a great many holes in the Kansas landscape in search of new natural gas reserves.....but we didn't find much. Only one significant pool was discovered, and that pool probably contains less than 1 trillion cubic feet of new natural gas. Natural gas will be in short supply in the future. Maybe you can help me, who should get less natural gas? The petrochemical company that makes gaskets for the drilling rigs in western Kansas? The fertilizer company that uses natural gas as a feed stock for nitrogen fertilizer? Your local electric generating plant? Or should we cut the supply of natural gas to your home? How about cutting the supply to your local hospital? Should we curtail natural gas used to pump irrigation water in southwestern Kansas this summer?

Present priorities include maintaining natural gas service for residential and commercial usage and curtailing industrial usage of natural gas. Assuming that we allow no additional residential or commercial natural gas customers in the future, we will probably be able to supply our current residential and commercial users for 15 to 20 years.....at the expense of industrial users. Nationally, in 1975

industrial customers will be curtailed 29%, and in 1976, their use will be curtailed 42%. By 1980, there will be little if any natural gas available for industrial usage.

The outlook for Kansas is not much better. Our three major suppliers of natural gas anticipate supply problems in 1975. Many industrial consumers have already been notified of summer curtailment schedules; the major natural gas suppliers predict 1975 curtailments will be twice what they were in 1974. In general, large industrial users in Kansas can expect to receive no more than 40% of their needs. I mentioned earlier that 78% of the electricity used in Kansas is generated from natural gas. . . by 1977 to 1978, natural gas will not be available for generation of electricity. Obviously, a switch to other fuels to generate electricity will be costly for every segment of the Kansas economy, be it industry, a municipality, an irrigator, or a private home owner. It might be of interest for you to know that our inventories of propane were 64 million barrel at the end of April 1974; at the end of April 1975 they were 59 million barrelsdown 8%

Where do we go from here?

I hope by now you realize we have problems---serious problems. I don't recall how many times Kansas has testified at federal energy hearings during the last two or three years, but I do know we forcefully stressed the need for the development of a balanced national energy policy. Over the last one and one-half years, we have seen the development of a federal fuel policy, one based on regulations and redtape---that policy does not attempt to either increase production or reduce consumption. Former President Nixon's Project Independence

was an effort to develop a national energy policy, and Kansas actively participated in those hearings. However, that project sunk with Watergate. We now see the emergence of a new attempt to develop a national energy policy. President Ford stimulated Congressional action with his Economy-Energy State of the Union message on 15 January 1975. Certain aspects of the President's proposal were distasteful enough to some legislative members that Congress began working on their own energy program. Compromises between the President's proposal and the Congressional plan, could provide us with a long awaited national energy policy. Hopefully we can eliminate partisan politics as we develop our national energy policy.

The solution to our energy problem can be achieved only through increased energy production and decreased energy consumption. Our plan to increase energy production must include an expanded energy base. Expanding our energy base will allow us to increase our production without exploiting our resources, sacrificing our environmental quality, or degrading one section of our country so another section can benefit. Expanding our energy base means we cannot concentrate only on massive energy developments such as converting all the western oil shale into oil, or drilling all the areas of the Continental Shelf or exploiting all the strippable coal in the western states.

All energy production, whether it be from coal, oil, uranium, or whatever, produces some environmentally distasteful effects. We as a nation must decide on how much environmental degradation will be tolerated by the public, and then develop our energy reserves under those constraints. Carefully planned energy development will allow increased energy production with minimal environmental damage.

We must strive to reduce energy consumption so that we will have time to develop an environmentally acceptable and balanced national energy program. You who are knowledgeable, industrial leaders must help set the pace.

We must accept the fact that the availability of cheap energy will be a constraint on our future activities. We must develop plans now so that we can live with these energy constraints. If we do not plan intelligently now, energy shortages will cause chaotic disruptions in the future.

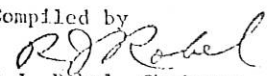
Thank you.

U.S. PETROLEUM SUPPLY TRENDS
(millions of barrels per day)*

Period	Domestic	Imports	Total	% Imports
Nov. 72	9.5	4.9	14.4	34.0
Dec. 72	9.5	5.1	14.6	34.9
Jan. 73	9.4	5.9	15.3	38.6
Feb. 73	9.4	6.0	15.4	39.0
Mar. 73	9.3	6.3	15.6	40.0
Apr. 73	9.3	5.9	15.2	38.8
May 73	9.4	6.0	15.4	39.0
Jun. 73	9.4	5.7	15.1	37.7
Jul. 73	9.3	5.9	15.2	38.8
Aug. 73	9.4	6.0	15.4	38.9
Sep. 73	9.3	6.3	15.6	39.7
Oct. 73	9.3	6.5	15.8	41.1
Nov. 73	9.1	6.2	15.3	40.1
Dec. 73	9.1	5.8	14.9	38.9
Jan. 74	9.2	5.0	14.2	35.2
Feb. 74	9.2	4.8	14.0	34.3
Mar. 74	9.1	5.3	14.4	36.8
Apr. 74	9.0	5.6	14.6	38.4
May 74	9.0	6.3	15.3	41.2
Jun. 74	9.0	6.8	15.8	43.0
Jul. 74	8.9	6.7	15.6	42.9
Aug. 74	8.9	6.4	15.3	41.8
Sep. 74	8.9	6.7	15.6	42.9
Oct. 74	8.7	6.3	15.0	42.0
Nov. 74	8.6	6.9	15.5	44.5
Dec. 74	8.7	6.9	15.6	44.5
Jan. 75	8.6	6.7	15.3	43.9
Feb. 75	8.5	6.3	14.8	42.6
Mar. 75	8.4	6.2	14.6	42.5

OPEC embargo

* API statistics

Compiled by

 R.J. Robel, Chairman
 Advisory Council on Energy
 and Natural Resources
 7 May 1975



Capital Energy Report

The CAPITAL ENERGY REPORT features a thorough review and summation of the people, policies, and legislation making energy news in Washington. It is compiled with the cooperation of the State of Louisiana and distributed weekly to the Chairman and his advisory committee by the Interstate Oil Compact Commission.

Senate Commerce Committee Reports Natural Gas Bill -- S. 692. On Tuesday, May 6, 1975, the Senate Commerce Committee, by a vote of 10-8, ordered reported the Hollings-Magnuson natural gas re-regulation bill, S. 692, as amended by an amendment offered by Senator Cannon. The basic provisions of S. 692, as originally reported to the full Committee by the Subcommittee, have been discussed in prior memoranda. As the delegation has been aware, the Committee has been deadlocked since the Easter recess. In order to effect a "compromise," Senator Cannon offered his amendment to S. 692, which apparently satisfied the majority, resulting in the 10-8 vote.

Voting for the bill were Chairman Magnuson, Senators Hart, Moss, Pastore, Stevenson, Inouye, Hartke, Cannon, and Ford. Voting against the bill were Senators Long, Tunney, Pearson, Stevens, Griffin, Buckley, Weiker and Beall.

If S. 692, as amended, is enacted into law, it will produce profound changes in the current law. Reports concerning the bill, appearing in the media, grossly misrepresent what the bill will accomplish. These misconceptions apparently are the result of representations by the Senate Commerce Committee staff and some of the Senators who voted favorable upon the bill.

S. 692, as modified by the Cannon amendment, becomes a tremendously complex piece of legislation, which is extremely difficult to understand and produces a complex multi-tiered pricing structure for new natural gas, with numerous anomalies and clear disincentives to a supply response. For example, it

creates four different classes of producers. First, there is the "producer" which is defined as "a person who produces and sells more than 10 million Mcf of natural gas per year or who produces and sells natural gas and does not qualify as a small producer." Then there is the "small producer," which is defined as "a person as determined by the Commission (A) who is not an affiliate of a person who produces and sells more than 10 million Mcf of natural gas or an affiliate of a person engaged in, or who is not himself engaged in, the transportation by pipeline of natural gas in interstate or intrastate commerce; and (B) who, together with all affiliates, if any, has not produced and sold more than 10 million Mcf of natural gas in any calendar year (subsequent to 1973) preceding the year in which he wants to qualify for small producer pricing under Sec. 204 of this Title as determined by the Commission; Provided that the provisions of Sec. 204 of this Act shall be applicable only to the first 10 million Mcf of natural gas production in any subsequent year." The "independent producer" is defined as "a producer or small producer who is not a major integrated petroleum company." A "major integrated petroleum company" is defined as "any petroleum company who owns total assets (including assets of all affiliates) that exceed \$1 billion, and which is engaged in production and in refining, transporting, or marketing of crude oil or product refined."

In light of the misconceptions one might gain from the media reports concerning this bill, coupled with the apparent confusion as to its impact and effect upon the current regulatory structure, both inside and outside the Senate Commerce Committee; we feel it necessary to afford the delegation with an analysis of the Committee print dated May 6, 1975, of S. 692, as amended and ordered reported by the Senate Commerce Committee on the same date. At the time of this analysis, we are led to understand that the Senate Commerce Committee staff is perfecting substantive changes in the Committee print, prior to its reporting, although we have no idea under what authority the staff is acting. Obviously, depending upon the extent of those changes, if any, the following analysis might also be changed.

The "Natural Gas Production and Conservation Act" changes the structure of the industry, the relationship between the state and Federal government, the relationship between different agencies, and the structure of Federal regulation of the producer and pipeline industries. A summary of the changes effected by this legislation in each of these areas will be discussed as follows.

I. Changes in the structure of the industry.

1. S. 692, as reported, extends Federal price regulation to the intrastate market for the first time [Sec. 202(6) and Sec. 203(a)] and through the redefinition of what constitutes "interstate commerce" [Sec. 202(4)], those intrastate pipelines, which have traditionally relied upon supplies from Federal lands, onshore, which are transported and consumed within the state of production, will not have access to new gas produced from those Federal lands by operation of Sec. 206(f). This provision requires that all production of new natural gas from Federal lands, after January 1, 1975, must be sold to an interstate pipeline.

This will primarily occur in the Rocky Mountain states where there are large tracts of Federally-owned lands leased, and subject to lease, by the Department of the Interior, wherein those states' intrastate pipeline systems buy substantial quantities of their traditional supply. The enactment of this bill is tantamount to saying that a state with Federal lands within its borders, which state bears the environmental impact incident to drilling, production and transportation, will not have access to gas produced from those lands within its borders, but must instead stand by as the gas moves into the interstate system and beyond the reach of the citizens of the state which supports the development of the resources.

2. The bill, immediately after enactment, would outlaw future joint venture arrangements, on Federal lands, between "major oil companies" [Sec. 210(a)(1)]. Within one year after enactment, no major oil company may continue to engage, directly or indirectly, in any joint venture, established prior to the date of enactment, on Federal lands, with any other major oil company. [Sec. 210(2)] This will result in a major restructuring of the oil and gas exploration and production effort, on Federal lands, and will most certainly result in a greater concentration of ownership of gas reserves on presently leased Federal acreage, at a minimum. Clearly, on currently leased Federal acreage, wherein one or more majors are co-owners, it is difficult to conceive how any such joint venturer, other than a major, would have the capital to buy out the other joint venturers, when consideration is given to the huge lease acquisition costs incurred on such ventures, and the value of productive reserves to be so sold or bought. As to future Federal lands acquisitions or ventures, it remains to be seen just how much diversification of ownership will occur, should this bill be enacted.

Insofar as joint ventures on private lands are concerned, effective immediately after enactment, it would be unlawful for a major oil company to enter into joint ventures with any other person, whether a major oil company or not. [Sec. 210(b)(1)] Joint ventures have historically formed a principal means whereby capital can be pooled on high risk ventures, and whereby sound production methods can be maintained in a common reservoir where there is multiple ownership of minerals. Joint venture arrangements are a virtual necessity as production moves into secondary and tertiary recovery phases.

The language employed with respect to joint ventures [Sec. 210(d)(3)] very probably would preclude the continued use of farmout arrangements which operate largely in favor of the independents, both small and large. Much of the acreage controlled by the major oil companies has traditionally been made available for exploration by the independents on a farmout basis, whereby the major will authorize the independent to conduct exploratory operations, with the major oil company also maintaining some degree of control over the timing and extent of the exploration or development effort. Most certainly, should the party owning the lease farm that lease out to another, and retain an interest in the minerals produced, as is consistently the case, such an arrangement would establish a "community of interest in the purposes of the undertaking." Clearly, if the present practice of farming out acreage by the majors is inhibited, the result will be that the majors will be compelled to explore and develop the large blocks of acreage which they have under lease, and here again the end result will be a greater concentration of ownership of gas reserves in the hands of a few.

The effect of the bill's prohibition of joint ventures, and its consequent effective prohibition of farmout arrangements, will have a pronounced anticompetitive effect and unquestionably many of the independent producers will be forced out of business. The major companies currently have the financial capability of assembling large blocks of acreage and paying the large lease acquisition costs therein involved. Most of the independents do not. The majors also have the financial capability of supporting the extensive seismic and geophysical work which is necessary for a preliminary evaluation of any potentially productive acreage, prior to its exploration. Most of the independents historically have not demonstrated the financial capability to undertake these aspects of gas prospect acquisition, evaluation and exploration. If, therefore, many independents are denied the opportunity of making farmout arrangements with the majors, it is most reasonable to assume that these independent producers will be compelled to leave the business since they do not have the financial capability to undertake those functions which the majors have historically performed in assembling acreage blocks and conducting the necessary preliminary work.

The Federal Trade Commission is charged with the responsibility of enforcing these joint venture prohibitions. [Sec. 210(b)(3), et seq]

As to joint ventures between major oil companies and independent producers, the Federal Trade Commission is authorized to permit such ventures, on a case by case basis, if it determines that to do so would be "consistent with the policy of maximizing competition in the petroleum sector of the economy." Insofar as this proviso is concerned, it should be noted, however, that for the first time the Federal Trade Commission is called upon to exercise expertise in an area where none has heretofore been developed. The standards it might therefore employ, at least in the short or mid-term, may be totally inconsistent with the national goal of increasing domestic energy supplies.

3. The bill converts interstate pipelines into common carriers. [Sec. 207(c)] This is a marked departure from the pattern developed in the industry over the past thirty-five years, for historically each pipeline has maintained its own gas procurement effort and has obtained gas supplies for non-discriminatory distribution among all its customers. When the pipelines become common carriers, as mandated by this Act, this means that the pipelines can be compelled to transport gas for certain of its customers who have the financial resources to purchase their own gas supplies, and unquestionably this provision will result in situations where some customers on the same pipeline are receiving adequate gas supplies while others are not, and where certain localities served by the pipeline are receiving adequate service while others are not. Smaller gas users will be disadvantaged under this arrangement inasmuch as the gas supply which the pipeline would have obtained for the benefit of all customers will be subject to ownership and control by the larger gas user who has a superior bargaining position in contracting for its own gas supply.

4. The bill empowers the Federal Power Commission to allocate gas supplies among interstate pipelines. [Sec. 209(b) and (c)]² As previously noted, each pipeline has historically maintained its own gas procurement effort, and today we find a situation in which some pipelines have achieved a greater degree of success in securing gas supplies for their customers than have other pipelines. With the advent of FPC allocation authority between pipelines, the provident, well-managed pipeline will be compelled to share its gas supply with the pipeline which was less successful or

aggressive in its gas procurement efforts. The customers of the provided pipeline will see the gas supply which they have in part paid for taken from them and sold to customers of the less provident pipeline. While the bill provides for compensation to be paid to the pipeline from which gas is taken, there is no adequate provision for protection of that pipeline's customers in terms of future availability of gas. That gas which is diverted today from one pipeline for the benefit of customers on another pipeline will, in all probability, never be replaced, and accordingly, the customers of the pipeline from which gas is taken can never truly be made whole after the allocation effort is once undertaken. The effect of FPC allocation of supplies between pipelines upon the developing regional polarization threatening national unity is evident.

5. The bill also works a fundamental change in industry structure through its extension of FPC control over an emerging synthetic natural gas industry. [Sec. 203(d)(2)]

At the present time, SNG facilities are non-jurisdictional with the Federal Power Commission, and this means, most simply, that pipelines and distributors which are considering entry into this line of endeavor are not able to obtain rate base treatment of the investment to be made in SNG facilities. This will change if S. 692 is enacted and there will be a complete rate payer underwriting of the risks inherent in a line of activity which has yet to demonstrate economic feasibility. Another consequence of the extension of FPC jurisdiction to SNG operations will be a drain upon the very limited quantities of hydrocarbon feedstocks presently available in this country. If SNG activities receive rate base treatment, virtually all impediments to the development of this industry will be removed, and those who engage in SNG activities, with the financial underwriting of the pipeline rate payers, will demand and unquestionably receive such scarce national resources as naphtha, refined from petroleum, and natural gas liquids. Since the total cost of the SNG feedstocks will be of no real concern to the pipeline SNG operation, then we may reasonably expect to see large quantities of very scarce natural gas liquids diverted from higher and better uses to the SNG process. There are, of course, tremendous conversion losses involved in making SNG from natural gas liquids and from naphtha, and these feedstocks are vital to the continued existence of such industries as the petrochemical industry and the textile industry. Many uses by the petrochemical industry of the same feedstocks, which will be diverted to SNG plants, have no substitute, and the diminished availability of the feedstock, and the higher prices which will result from vastly increased demand, will produce a severe impact upon the petrochemical industry and consumers of its products. All of these observations do not, however, apply to coal-based SNG.

The changes to Sec. 2 of the Natural Gas Act [Sec. 4 of the Committee print], and the definition of "synthetic natural gas" thereunder would appear, at a minimum, to extend FPC pricing authority over the delivery of synthetic natural gas to an intrastate pipeline. However, it is difficult to determine from an examination of the proposed amendments to Sec. 2 of the Natural Gas Act, in this particular, whether FPC jurisdiction will end with the pricing of such deliveries to the intrastate market or the ramifications of such expanded FPC authority.

II. Changes in the Federal-state relationship.

1. As already noted, the bill extends FPC jurisdiction to the intrastate market.

2. The bill also requires Federal control over one aspect of the retail rates at which natural gas is sold. [Sec. 206(a)] Historically, retail rate regulation has been a state or local prerogative, but the present bill dictates end use rate designs and charges state utility commissions with the duty of enforcing the Federal standards. [Sec. 206(b)]

3. The bill extends the jurisdiction of the FPC to empower the Commission to compel reporting by states and local units of government with respect to all aspects of natural gas exploration, production, development, conservation practices, and regulatory functions. [Sec. 207(g)] The bill also extends FPC reporting jurisdiction to producers and pipelines which have, heretofore, been subject only to whatever reporting requirements may have been imposed by the state or local regulatory units with respect to intrastate operations. [Sec. 207(g)]

4. The bill purports to limit the amount of state-owned royalty gas, which is subject to the ownership and control of the state, to a total of one-eighth of production [Sec. 203(j)(3)], ignoring the fact that most producing states have for years provided for a state royalty on state-owned lands of one-sixth production. Such notwithstanding, the provision raises serious constitutional questions.

5. The bill extends Federal controls over the end use of natural gas in the intrastate market. [Sec. 208] Specifically, boiler fuel usage within a state, whether a result of intrastate or interstate production, is subject to control by the FPC without regard to the wishes or needs of the local community involved.

6. In establishing a preference or priority for agricultural natural gas usage, the bill extends FPC authority to force allocation of natural gas supplies to agricultural usage, in the intrastate market, should the Commission determine that the state has not, "within 180 days after the date of enactment . . ., taken action substantially consistent with the purposes" of this provision. [Sec. 209(a)(2)]

III. Changes in the structure of regulation.

1. The structure of producer regulation is changed in the following respects. Many producers not heretofore subject to FPC jurisdiction are made subject thereto. [Sec. 203 (j)(2)] Producers are told what length of contract they may lawfully enter. [Sec. 202(6)] Producers are told that they may not have gas produced from Federal lands transported to their own facilities for company use. [Sec. 207(f)] Producers are told that their production activities on Federal lands must be specifically spelled out and approved by the Department of the Interior and by the Federal Power Commission. [Sec. 207(d)] The reporting requirement of producers is vastly expanded. [Sec. 207(g)]

2. With respect to the pricing of natural gas at the wellhead, the bill creates a multi-tiered pricing structure which is difficult of concise summation. Before it can be determined what the lawful price is for a producer sale in either inter- or intrastate commerce, it must first be ascertained when the particular gas in question was dedicated to either inter- or intrastate commerce [Sec. 202(6)]; and, the specific character of the producer who proposes to make a sale, i.e., whether he is a "small producer" [Sec. 202(13)], an "independent producer" [Sec. 203(1)(4)(c)], a "producer" [Sec. 202(9)], or a "major integrated petroleum company" [Sec. 203(1)(4)(b)]. Again, before the appropriate price can be determined, one must also know whether that gas is associated or non-associated [Sec. 203(1)(4)(C)] and whether it comes from Federal lands offshore or whether it is produced onshore. After these determinations are made, and they will in the future be made by the Federal Power Commission after protracted proceedings, then the appropriate price for a producer sale can be determined in accordance with the following:

a. If the sale is a sale of old flowing gas in intrastate commerce, the bill has no apparent price effect. It should be noted, however, that should an independent producer who is delivering non-associated gas from an onshore well to an intrastate pipeline, under a contract entered into prior to enactment, and that contract expires subsequent to enactment, with the producer recommitting or rededicating that supply to the intrastate pipeline; the new contract or rededication would seem to qualify as "exempt natural gas," or "natural gas which ... was not dedicated to interstate commerce prior to January 1, 1975." [Sec. 203(1)(4)(C)] If so, the producer would thereby be entitled to receive the exempt Btu equivalent price. [Sec. 203(1)]

b. If the sale is of old interstate gas, the price to be received by the producer is that price determined by the Commission for old gas; these prices are frozen in perpetuity, except to the extent that the Commission specifically and individually grants rate increases on the basis of added costs or the costs of "deeper drilling." [Sec. 205]

c. New interstate gas produced from the offshore Federal domain will qualify for one of two rates -- either a rate as yet undetermined by the FPC but falling within the range of 40¢ to 75¢ per Mcf [Sec. 203(g)], or a rate for a small producer which is 150% of the latter rate. [Sec. 204] If, however, the producer proposing to make the sale of new gas from the offshore area has had the gas available for sale more than two years and cannot demonstrate justification for failing it to sell it on an earlier date, his gas will be priced at the FPC set rate for old flowing gas. [Sec. 203(e)]

d. New gas produced onshore whether sold inter- or intrastate, will qualify for any one of several rates dependent upon the particular circumstances presented. (1) If the onshore sale is by a major producer, the rate will be that set by the FPC in the range of 40¢ to 75¢ per Mcf. [Sec. 203(g)] Once commenced at this rate, it cannot escalate except in accord with the very limited circumstances set forth in Sec. 203(b) and (c) of the Act. (2) If the gas is produced from Federal lands, and if the seller has withheld the gas from market for two years without justi-

fication, he will be denied this rate and will be compelled to sell at the old FPC rate for flowing gas in the particular area in question. [Sec. 203(c)] (3) If the onshore sale is by a small producer, he can sell at 150% of the rate permitted the large producer (Sec. 204). (4) If the onshore sale is by an independent producer, he may receive any price up to a price which equates, on a Btu equivalency test, with the price for new crude oil. [Sec. 203(1)] At current new crude prices, this Btu rate will be in the range of \$2.00 per Mcf. It should be noted, however, that a producer who attempts to take advantage of the Btu equivalency rate is subject to a plowback requirement which will be discussed hereinafter. The Btu equivalency rate is by no means certain; if the appeal presently pending before the Temporary Emergency Court of Appeals in Consumers Union v. FEA results in a decision that the FEA unlawfully decontrolled new crude prices, then it is impossible to predict at this time what rate will be generated for new gas sales since that rate will be tied to whatever determination may be made by the FEA as the proper price for new crude, subject to Congressional review. Also, if the Congress takes affirmative action to control new crude prices or roll back prices from their current levels, this would have a direct impact upon the Btu equivalency rate for new onshore gas. Thus, the application of this pricing standard is one of uncertainty at the present, and will be subject to monthly variations even if the FEA is permitted by the courts and by the Congress to let the price of new crude float at market levels.

e. Associated gas -- that which is produced in conjunction with the production of crude oil -- can never qualify for the Btu equivalency rate, but can qualify for the FPC new gas rate of 40¢ to 75¢ per Mcf if the associated gas in question meets the tests of new gas as set forth in the Act. [Sec. 203(1)(4)(C)]

f. All of the price conditions discussed above are subject to further change through operation of the new gas definition contained in the bill. [Sec. 202(6)] If the contract of sale is one of twenty years or more, then the pricing standards set above apply, if, however, the contract of sale is for a period of time between ten and twenty years, then the producer can obtain a rate of only 75% of the rate which would otherwise apply.

3. The Btu equivalency rate discussed above for new onshore dedications is structured so that the producer who attempts to collect such a rate is under an obligation to "plowback" all revenues in excess of 50¢ per Mcf which he receives. [Sec. 203(1)] The plowback obligation shall be enforced by the Commission, and the Commission is authorized to collect from the producer all plowback sums not properly invested and deposit these sums in the general fund of the United States Treasury, thereby becoming a collector of revenue. [Sec. 203(1)(3)] In order to meet the plowback obligation, the producer must, within two years of the receipt of funds in excess of 50¢ per Mcf, expend all such excess revenues in activities relating to the effort to produce new gas. [Sec. 203(1)(2)]

Sec. 203(1) is entitled "Exemption of Independent Producers Onshore" and at first reading might seem to accomplish that result. As a practical matter, however, any independent producer attempting to utilize Sec. 203(1) will find himself far more heavily regulated than he is under other pricing provisions of the bill, and may find that gas exploration and development is potentially disastrous, from a financial standpoint, under the exempt price mechanism.

The problems inherent in Sec. 203(1) are legion. First, as pointed out above, the lawful rate therein established is tied to the price of new domestic crude oil, which as also noted above may float up or down. But, of course, the producer who commences deliveries under Sec. 203(1) must do so under a minimum ten-year contract, and he may not discontinue deliveries without FPC approval even if downward price fluctuations render his operations totally unprofitable.

Secondly, Sec. 203(1) is economically unsound for gas costing over 4¢ per Mcf. If a producer sells under this Section at \$2.00 per Mcf, he must, from date of first receipt of revenues, pay his royalty owner a percentage of the gross revenues. This percentage, on the average, for new gas will be at least 16%, or 32¢ per Mcf. The producer is also obligated to pay state severance taxes, which currently run in the range of 14¢ per Mcf on a \$2.00 sales price. Thus, while Sec. 203(1) apparently provides a producer with a 50¢ per Mcf price to cover his costs, it is obvious that after payment of royalty and severance taxes the producer will have only 4¢ per Mcf to cover his actual costs of exploration and production and provide a return on his original capital investment. He cannot use the \$1.50 per Mcf balance of his \$2.00 sales price to cover costs and return, because this \$1.50 must be expended for additional production efforts, "in the succeeding or next succeeding year following the collection of revenues." [Sec. 203(1)(2)]

In every instance, therefore, where the cost of new gas exceeds 4¢ per Mcf, use of Sec. 203(1) will result in a loss to the producer.

Thirdly, consider the following. Sec. 203(1)(4)(d) describes plowback expenditures, for which credits will be allowed as "any expenditures for reasonable and prudent activities to explore, develop and produce exempt natural gas or new natural gas" Does the use of the conjunctive "and" require an interpretation that should the producer undertake to explore for new or exempt natural gas and encounter a "dry hole," would such expenditures fail to qualify as credits or offsets against the \$1.50 realized in the sale? If so, and if the producer took advantage of the exempt price mechanism and sold his new or exempt gas for \$2.00 per Mcf, he would first pay 32¢ per Mcf to the royalty owner, 14¢ to the state in severance taxes, expend \$1.50 per Mcf in the unsuccessful venture, only to find that he was required to pay or remit an additional \$1.50 per Mcf to the FPC at some time in the future. This would clearly inhibit gas exploration efforts since the independent producer would be placed in a position of incurring a substantial economic penalty in all instances where his exploration effort was unsuccessful.

Fourthly, it is anomalous that a major integrated petroleum company may lawfully sell new gas at 75¢ per Mcf, under Sec. 203(g), and incur no plowback obligation, while an independent producer, if he sells at 75¢ per Mcf under Sec. 203(1), would incur a 25¢ per Mcf plowback responsibility. The obvious theory of the "all over 50¢ per Mcf" plowback feature is that revenues over 50¢ per Mcf represent a windfall to the producer. This cannot be reconciled with the recognition in Sec. 203(g) that costs plus fair return may justify a current rate of 75¢ per Mcf, with escalations for inflationary changes.

Fifthly, inasmuch as the provisions of Sec. 203(1)(2) preclude the "banking" of costs and require the expenditure by the producer of his plowback money within the first two years following receipt of revenues in connection with a Sec. 203(1) sales, it is questionable whether a prudent operator can always have sufficient new gas prospects to absorb his plowback obligations; the legislation may thus force an uneconomic expenditure for gas activities when the operator could put the funds to be better use in searching for oil. This raises yet another anomaly.

Under the plowback provision of the exempt gas mechanism, expenditures on new ventures, which result in the discovery and production of oil, would clearly not qualify as an offset against the \$1.50 per Mcf excess over the 50¢ per Mcf threshold. Thus, should the producer, in an attempt to earn qualified plowback credits, undertake to drill for and produce natural gas, and suffer the misfortune of finding oil, this discovery would operate to require that he remit to the FPC, at some time in the future, \$1.50 per Mcf. This then has the result of rendering the prior successful gas venture uneconomic.

Next, what are the

Next, what are the overall income tax consequences of the plowback mechanism? Clearly, the producer would be required by current income tax law to pay income taxes on the basis of gross receipts. Therefore, should he make a sale under the exempt mechanism, and sell gas for \$2.00 per Mcf, and either fail to reinvest \$1.50 per Mcf, in accordance with the plowback requirements, or make such investments, which do not qualify thereunder, because he discovered oil or encountered a dry hole, the producer would then be required to remit to the FPC at some time in the future \$1.50 per Mcf, with no provision whatsoever for recovering or recouping the income taxes paid on the gross producer price in the past. By no means does this analysis propose to make an indepth study of the interrelationship and impact of the Internal Revenue Code and IRS regulations, however, the potentially disastrous economic consequences of the implementation of the plowback mechanism, without regard to Internal Revenue taxation policies is self-evident.

4. The pricing structure built into the legislation discriminates between producers and constitutional questions under the equal protection clause are clearly raised. In addition, the plowback provision, since tied to payment of funds to the United States Treasury is clearly a revenue measure, which did not originate in the House of Representatives. Additional problems are raised thereby.

*Presented at
Rt. Col on 20 May
1975 in Washington, D.C.*

THE HONORABLE ROBERT F. BENNETT

Governor of Kansas

Statement before the Federal Power Commission

Re: Priority Use of Natural Gas for Irrigation

Hearing Room F
Federal Power Commission Building
Washington, D. C.
20 May 1975

Judge Curtiss L. Wagner, Jr. presiding

Judge Wagner, thank you for affording me the opportunity to present my views on the Federal Power Commission's Opinion Number 697-A, Docket Number RP72-6 of 19 December 1974, which downgraded the priority of natural gas used to pump water for irrigation, from Priority 2, to Priority 3. As the Governor of the State of Kansas, I wish to express my concern relative to that decision, and to respectfully request that you reverse that decision. I feel strongly that use of natural gas to pump irrigation water for agricultural production should be given high priority, the highest priority practicable in these trying times of dwindling natural gas supplies.

Mr. Chairman, I speak as Governor of an energy producing state, and a state in which agriculture is of great importance. In 1974, we in Kansas produced close to 900 billion cubic feet of natural gas, and consumed

only 600 billion cubic feet within our boundaries. Therefore, we provided approximately 300 billion cubic feet of natural gas to other parts of this country. In addition, of the 600 billion cubic feet of natural gas consumed in Kansas, over 100 billion cubic feet was used to extract oil and gas from our oil and gas fields, and to move those fuels through pipelines leading to consumers throughout this great nation. Like you, I am greatly concerned to see the natural gas reserves of our great Hugoton field being depleted. We have observed the pressures in the Hugoton pool gradually decline over the past decade, from 303.4 psig in 1963, to 212.2 psig in 1974. We now estimate that the Hugoton pool has a life expectancy of less than 12 to 15 years. This Office is well aware of the seriousness of the natural gas situation, and fully appreciates the urgency to use our remaining natural gas supplies for only the most essential needs.

In addition to being an energy producing state, Kansas is also an important agricultural state. We export foodstuffs, some of which are grown on irrigated land. I trust there is no need to amplify the importance of Kansas as an agricultural state; we rank No. 1 in wheat production, No. 2 in total cropland under cultivation, and No. 3 in total farm acreage in the United States. Last year, Kansas ranked fourth in the United States in total agricultural exports, with a total dollar value of over \$1.6 billion. We in Kansas, exported over 67 percent of our wheat production, 50 percent of our soybean crop, and 25 percent of our grain sorghum and corn production. These exports are an important ingredient in this nation's balance of pay-

ments. Approximately 4 percent of our wheat is produced on irrigated land, 19 percent of our grain sorghum is raised on irrigated land, and 80 percent of our corn is grown under irrigation. Thus, crops produced on irrigated land in Kansas play a significant role in the total food production in this country, the food exports of this country, and the balance of payments for this nation. If it had not been for the extra exports of agricultural products in 1974, the dramatic decline in exports of non-agricultural products would have resulted in a negative balance of payments for this country. Instead, exports of agricultural products, many of which were grown on irrigated lands, more than offset the reduction in exports of non-agricultural products, giving the United States an overall trade surplus of \$2.8 billion. I believe the above facts must be given careful consideration as we decide priority uses of natural gas.

In Kansas, approximately 10 percent of our cropland is irrigated. That irrigated land produces more than 25 percent of our annual crop yield. Of the 2.5 million acres of irrigated land, 77 percent is irrigated by surface methods and 23 percent by sprinklers. There are an estimated 28,000 irrigation pumping units in Kansas, 60 percent fueled by natural gas, 15 percent by propane, 10 percent by diesel, 2 percent by gasoline, while 15 percent are electric-powered. The 22.8 billion cubic feet of natural gas used annually to operate our irrigation pumps in Kansas, represents only 2.5 percent of the annual production of natural gas in Kansas.

Interruptions of irrigation due to non-availability of fuels could

result in dramatic reductions in agricultural production on irrigated lands in Kansas. The magnitude of the effect of interruptions of irrigation water depends on many factors: water storage capacity of the soil, amount of water stored in the soil at time of interruption, stage of crop development, duration of interruption, and water requirements of the crop. The water storage capacity of most irrigated lands in Kansas averages 1.0 inch per foot of soil. Most of the important agricultural crops grown in Kansas use approximately 0.3 inch of water per day for normal growth, and the need for this amount is especially critical at tasseling and silking stages in corn, and the boot to heading time in grain sorghum. Yield reductions of 25 to 50 percent can be expected by lack of water for periods of as little as one to two days during the tasseling stage of corn. Under optimal conditions, one can expect significant reductions in corn and sorghum yields if the soil is not completely recharged every 5 to 6 days. Obviously, the amount of yield reduction will increase as the period of water denial is increased, leading to total crop failure in as little as 13 days. The importance of proper water management can be illustrated by comparing the following 1972-74 production figures from irrigated and non-irrigated lands in western Kansas.

	<u>non-irrigated</u>	<u>irrigated</u>
wheat	23.6 bu./a.	48.3 bu./a.
sorghum	58.2 bu./a.	84.3 bu./a.
corn	37.0 bu./a.	101.7 bu./a.

It is apparent, therefore, that proper, uninterrupted irrigation is necessary to sustain the food production which is so important to this nation. As exemplified in the preceding material, use of natural gas for irrigation might be considered in the same light as Priority 2 use of natural gas for industrial plant protection.

Basically, it might be argued that natural gas use for agricultural irrigation could be considered "process gas", and, therefore, qualify for inclusion in Priority 2 as defined on page 18 of Opinion No. 697-A. The critical part of that definition involves the non-availability of alternate fuels for the irrigation pumps. To be sure, alternate fuels are technically available for the 16,800 natural gas fueled irrigation pumps in Kansas, however, since natural gas fueled pumps cannot be converted to diesel or electricity by merely installing a simple attachment, 16,800 pumps would need to be replaced.

Replacing 16,800 natural gas fueled irrigation pumps with heavy duty industrial diesel engines in the 100 to 225 horsepower range is not possible in less than 8 to 10 years. The total United States annual production of industrial diesel engines suitable for use to power irrigation pumps is approximately 12,000. Even if Kansas irrigators would be fortunate enough to secure 20 percent of the total annual United States production of heavy duty diesel engines, they would need seven years to replace the 16,800 natural gas fueled pumps. Such a strategy of course would not provide a supply of diesel engines to replace worn out diesel

engines already in service in the irrigation fields of Kansas and other irrigated areas in the United States. Therefore, although it is theoretically possible to replace our 16,800 natural gas fueled irrigation pumps with diesel engines, it is not a realistically feasible option at this time. The same type of reasoning applies to gasoline powered pumps, with even greater supply constraints.

A second alternative would be to replace the present natural gas fueled irrigation pumps with electric powered units. In this case, both the supply of industrial electric motors and availability of electricity would be severe constraints, with electrical supplies being the most critical. In 1974, the state of Kansas had 3,971 MW of firm electrical generating capacity; the peak demand during the irrigation season was 3,870 MW. The 100 MW excess would not be sufficient to absorb even a small portion of the 600 to 800 MW requirement of irrigation now served by natural gas fueled pumps. At the present time, irrigators in western Kansas are being refused hookups for irrigation needs. Significant additions to the electrical generating capacity in Kansas are not expected until 1978. Therefore, conversion of our natural gas fueled irrigation pumps to electricity will not be a technically feasible alternative until at least 1978 when we expect some additions to our electric generating capacity.

Judge Wagner, as you are aware, a significant part of our state must cope with the problems of insufficient rainfall. The southwestern portion of our state, in particular, is often subjected to drought conditions, and the

ability to produce agricultural commodities is dependent upon irrigation. Therefore, based on the critical need for an uninterrupted supply of water for agricultural irrigation, and the unavailability of alternate fuel sources for irrigation pumps, I respectfully petition you to reverse the Federal Power Commission's decision to downgrade natural gas used for agricultural irrigation pumps from Priority 2 to Priority 3.

As I stated in my opening remarks, I am well aware that this nation currently faces a serious natural gas shortage, a shortage which will become even more momentous within the next two or three years.

In view of an increasing shortage of all forms of energy, Kansans have unselfishly responded to the urgency of the situation through successful conservation efforts. The significant reduction in gasoline consumption from 1 billion 518 million gallons in 1973 to 1 billion 431 million gallons in 1974 (5.7 percent reduction) exemplifies the effectiveness of measures being undertaken. However, this approach in itself is not adequate. We must proceed to increase our exploratory efforts in a favorable economic atmosphere. We cannot expect exploration to increase our supplies of natural gas unless we create economic incentives for exploration. I am of course referring to the need to deregulate the wellhead price of new natural gas, and to provide some types of incentives so that high risk capital can become available for exploration, and for enhanced recovery of our known reserves. I am also advocating exploration and production on the outer continental shelf areas. We must accelerate our efforts to increase

our energy reserves.

While we are attempting to increase the amount of energy available for this nation, increased efforts must likewise be made to reduce energy waste. As you realize, agriculture accounts for less than 3 percent of the total energy consumed annually in the United States, however, we in Kansas are conducting an aggressive program to reduce energy waste in agriculture. Three major agricultural activities are relatively large consumers of energy in Kansas: irrigation, fertilizer production, and grain drying. Realizing the need for more efficient use of energy and water for irrigation purposes, the Kansas Legislature and the Kansas Agricultural Experiment Station established the Evapotranspiration Laboratory at Kansas State University in the late 1960's. Basic and applied research of the Evapotranspiration Laboratory have resulted in the development of techniques which make possible higher crop yields, while at the same time using less fuel and water. As early as 1969, the Kansas Water Resources Board established procedures and policies which would result in a 25 percent decrease in the quantity of fuel and water needed per acre of irrigated land in Kansas. Active programs by our Cooperative Extension Service and the Kansas Agricultural Experiment Station are making progress toward the realization of that goal.

The relationship between nitrogen fertilizer and crop production is well known. For several years now, agronomists in Kansas universities have been actively engaged in research to maximize crop production, yet

minimize fertilizer usage. As you know, natural gas is the feedstock in the manufacture of nitrogen fertilizer, thus any reduction in fertilizer usage is a reduction in natural gas consumption. In 1974-75, the Cooperative Extension Service at Kansas State University conducted training sessions for farmers and fertilizer dealers in each of our 105 counties, stressing the efficient usage of fertilizers. Soil testing is an excellent method to reduce fertilizer waste; Kansas is one of only a handful of states which offer this service to its producers. During the last year alone, the number of soil samples analyzed by our state laboratories increased by 30 percent, a direct result of our educational program.

Much grain produced on irrigated land must be dried before it can be stored in elevators. Most grain drying is done with natural gas or propane. Beginning in the 1960's, the Department of Agricultural Engineering at Kansas State University began studies on the use of solar energy for grain drying. That research effort was accelerated in 1973. It appears that within the next five years, grain drying utilizing solar energy, dryeration, and low heat will significantly reduce the amount of natural gas currently being used to dry grain in Kansas.

This should give you a good idea of some of our efforts to reduce consumption of natural gas. But these efforts should not be negated by the imposition of a low priority for the utilization of natural gas for irrigation purposes.

Gentlemen, I wish to again emphasize that uninterrupted supplies

of natural gas are essential to irrigation agriculture, and that we in Kansas are making every effort to reduce waste of natural gas in agriculture. Thank you for your concern and attention. I trust you will give serious consideration to reversing your Opinion of 19 December 1974, and will reinstate use of natural gas for irrigation pumping into the Priority 2 category.

Robert F. Bennett
Governor

Natural Gas Regulation by the FPC.

Presented to Interim Study Committee on Natural Gas
June 12, 1975

Natural gas field-price regulation began in 1938 with the passage of the Natural Gas Act by the 75th Congress. The Natural Gas Act resulted from a report by the Federal Trade Commission on the inability of state regulatory bodies in two different regions to be effective. In the east the switch from manufactured gas to cheap natural gas was creating enormous profits for the pipeline companies. West Virginia, the state primarily concerned, attempted to put a lid on prices but the pipeline companies had only to extend their services to Ohio and Pennsylvania which were eager markets for the product. A number of legislative attempts to halt the export of this gas were ruled unconstitutional.

In our region, the problem was one of an excess supply of gas. Well-owners could cap their wells, hoping to avoid bitter price wars and expecting to realize a better profit at some later date, but if one well in the field opened production then pressure and supply for all of the capped wells were reduced. This problem could only be solved by regulation which controlled production so as to prevent drainage or by negotiation among all producers in the field. Unfortunately the fields were large, producers numerous, and the common interest was poorly understood so only regulation was a viable alternative. The Natural Gas Act was designed to respond to the problem in Appalachia, regulation of the pipeline companies, not producers, leaving the second problem to the states.

Section 1b of the Natural Gas Act contains the crux of the FPC's role and is the source of most of the subsequent litigation.

1. (b) The provisions of this chapter shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or the facilities used for such distribution or to the production or gathering of natural gas. [emphasis added]

In 1948 the FPC decided to clarify the limits of its jurisdiction with finality. The case chosen involved Phillips Petroleum Company, the biggest independent gas producer. In 1951 the FPC voted 4-1 that Phillips' sales to interstate pipelines were an integral part of its extensive gathering process and, as such, were exempted from regulation under the Natural Gas Act.

As you all know, the case ended up in the Supreme Court in 1954 as Phillips Petroleum Company v. State of Wisconsin. I might note parenthetically that a brief in support of Phillips was entered by the State of Kansas. The Supreme Court ruled that sales directly to interstate pipeline transmission companies by independent producers were subject to

FPC regulation but that gathering lines behind processing plants are exempt from jurisdiction. The intent of the decision was protection of the consumer from monopoly pricing measures. As a result the FPC has kept natural gas prices far below the market-clearing level every since then.

In response to the Court's ruling, from 1954-1960, the FPC attempted to regulate natural gas producers' prices on an individual cost of service basis. In 1960, during hearings on the case known as the Second Phillips case the independent cost of service method was abandoned. One reason was the terrific backlog of cases which had developed. The second was the Commission's realization that natural gas producers by their nature could not be classified as public utilities. Contrasted to natural gas pipelines, which have an opportunity to earn a fair rate of return on their investment, the producer must make high-risk investments in the effort to discover gas with no guarantee of success. Because producers are very heavily involved in exploration and development as well as selling such gas as may be found and produced, production costs vary considerably in individual situations.

With the end of the cost of service basis for pricing, the FPC began regulation by an Area Rate Method. The U.S. was divided into 7 producing regions and a composite price for each region was determined. After more than ten years of adversary hearings and appeals through the court system, including the Supreme Court on a number of occasions, only two of the seven areas had complete area price systems. In April 1974, the FPC issued a rule ending area-rate pricing and establishing a single, national price on new gas. New gas is gas from expiring contracts, gas produced from new wells, together with new dedications from intra-state to the interstate market. This price was initially pegged in 50¢/thousand cf, but has risen since then. Actually, the entire regulatory function of the FPC is more or less in limbo right now awaiting the outcome of measures in the present Congress.

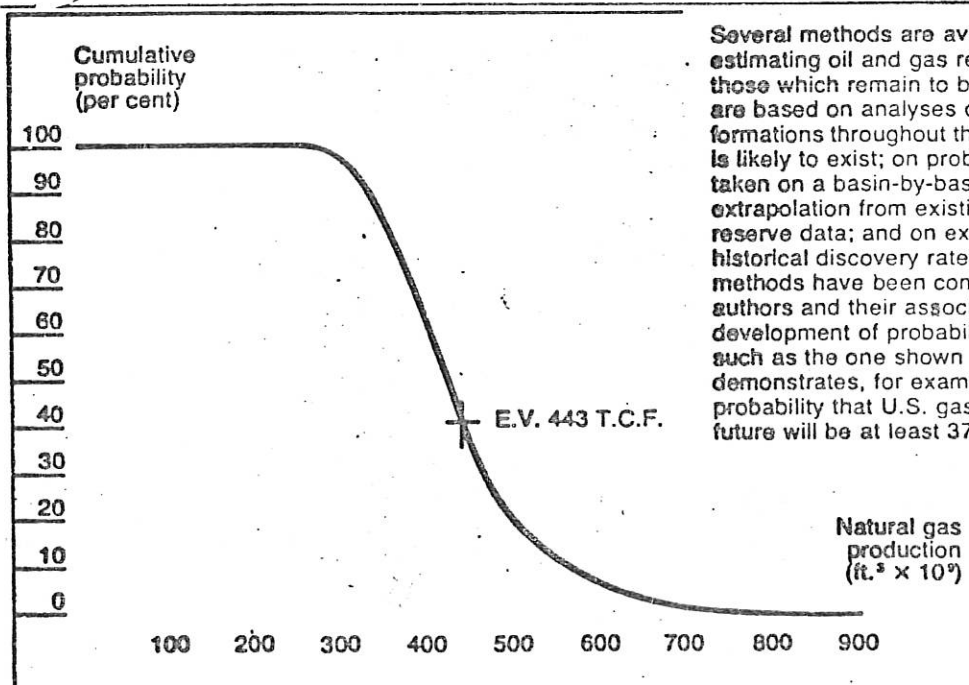
NATURAL GAS
RESERVE & RESOURCE ESTIMATES

Harry Wadsworth
Attachment III

Cumulative U.S. natural gas production through 12/31/73 - 456.12 trillion cubic feet

<u>Estimating Agent</u>	<u>Reserves</u>	<u>Resources</u>
USGS (1975)	237.1+	322-655*
OCS (to 200 meters)	180 inferred reserves	55-110
USGS (1974)		990-2000
onshore - lower 48 states		600-1100
offshore		390- 810
American Gas Association(1974)	250	1146
(1970)	290	
<u>FPC National Gas Reserves Study(1970)</u>	<u>261.1</u>	
Potential Gas Committee and National Petroleum Council(1970)	286.9	1178
onshore - lower 48		613
offshore - lower 48		238
Alaska		327
Hubbert(1974) <i>Shell oil Nat'l gas survey</i>		
onshore - lower 48		
Total Resource		1050
-cumulative production		478
=Remaining Resource		572
Alaska		134
Total U.S.(not including OCS)		706
National Academy of Sciences(1975)		530

*All figures in trillion cubic feet



EXPLORING KANSAS ENERGY CHOICES

by

Ronald G. Hardy

**The Kansas Geological Survey
W. W. Hambleton, Director
University of Kansas
Lawrence, Kansas**

EXPLORING KANSAS ENERGY CHOICES

INTRODUCTION

This report highlights and/or summarizes facts pertaining to the following: (1) Kansas energy resources and reserves, (2) current patterns of Kansas energy consumption, (3) future energy consumption in Kansas, (4) energy supplies available in the short run, and (5) longer run prospects for energy supplies.

Briefly, resources refers to identified energy supplies which may or may not be recoverable under present technologies and economic conditions; reserves are the assured volumes that can be produced under existing technology and cost-price relationships.

RESOURCES AND RESERVES

Energy resources within the boundaries of the State of Kansas include the following:

(1) Conventional primary sources

coal--bituminous and lignite

natural gas

crude oil

hydro-energy

(2) Unconventional primary resources

oil shale

tar sands

solar

wind

fissionable material

organic products and waste

Utilizing the U.S. Geological Survey and the U.S. Bureau of Mines standardized mineral resource terminology, Figure 1 shows the current status of Kansas energy resources and reserves.

Based on the 1973 production of coal, natural gas, and crude oil; the measured and indicated reserves have the following life expectancy if no new reserves are identified.

Material	Total Reserves	1973 Production	Life Expectancy (Years)
Coal	900 million tons	1.3 million tons	692
Natural Gas	11,900 billion cu. ft.	897 billion cu. ft.	13.3
Crude Oil	454 million barrels	66.2 million barrels	7.0

Figure 2 shows the historic trend of energy production in Kansas.

CURRENT PATTERNS OF ENERGY CONSUMPTION

The pattern of Kansas energy for 1973 use is shown by Figure 3. In addition to the use distribution of primary energy materials the chart includes electric power.

Data selected from this chart are summarized as follows:

Natural Gas

Gross production (million cu. ft.)	897,289
Imports	<u>2,079,962</u>
Total available	2,977,251

		IDENTIFIED		UNDISCOVERED		
		DEMONSTRATED		INFERRED	HYPOTHETICAL	SPECULATIVE
		MEASURED	INDICATED			
ECONOMIC		165 MILLION TONS	(1) COAL 735 MILLION TONS (2) CRUDE OIL 453.7 MILLION bbls (3) NATURAL GAS 11.9 TRILLION CU. FT.		(1) COAL 18.7 BILLION TONS.	
SUB-ECONOMIC	PARAMARGINAL					
	SUBMARGINAL			(1) OIL SHALE 3 BILLION bbls OIL 3 TRILLION CU FT GAS (2) TAR SANDS 1.6 BILLION bbls	(1) URANIUM (U3O8) 136 GMS/TON SHALE (UNKNOWN SHALE TONNAGE)	

and USBM Standardize Mineral-Resource Terminology

New definitions for mineral-resource terms have been announced jointly by the U.S. Geological Survey and the U.S. Bureau of Mines. The classification system adopted is based on the extent of geologic knowledge about mineral deposits, including fuels, and the economic feasibility of their recovery. The chart that accompanies this article was supplied by these agencies to help demonstrate relationships between the terms.

The Oklahoma Geological Survey has not yet adopted the new classification system but is evaluating its applicability to Oklahoma terminology. Terms of the new system are defined below. Please note that "measured," "indicated," and "inferred" are applicable for both the reserve and the identified-subeconomic components.

Resource—A concentration of naturally occurring solid, liquid, or gaseous materials in or on the earth's crust in such form that economic extraction of a commodity is currently or potentially feasible.

Identified resources—Specific bodies of mineral-bearing material whose location, quality, and quantity are known from geologic evidence supported by engineering measurements with respect to the demonstrated category.

Undiscovered resources—Unspecified bodies of mineral-bearing material surmised to exist on the basis of broad geologic knowledge and theory.

Reserve—That portion of the identified resource from which a usable mineral and energy commodity can be economically and legally extracted at the time of determination. The term *ore* is also used for reserves of some minerals.

Measured—Material for which estimates of the quality and quantity have been computed, within a margin of error of less than 20 percent, from analyses and measurements from closely spaced and geologically well-known sample sites.

Indicated—Material for which estimates of the quality and quantity have been computed partly from sample analyses and measurements and partly from reasonable geologic projections.

Demonstrated—A collective term for the sum of materials in both measured and indicated resources.

Inferred—Material in unexplored but identified deposits for which estimates of the quality and size are based on geologic evidence and projection.

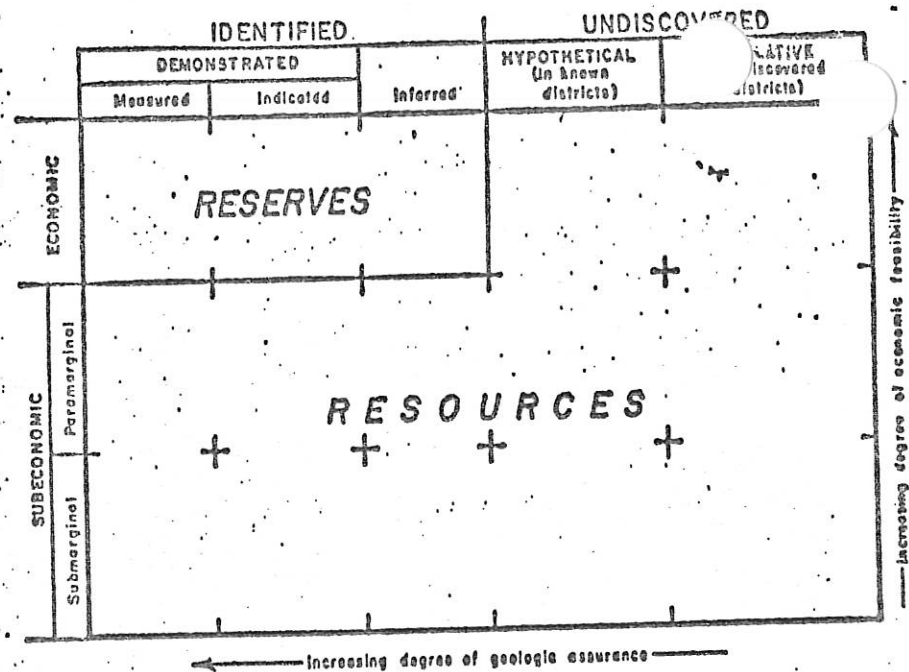
Identified-Subeconomic resources—Known deposits not now minable economically.

Paramarginal—The portion of subeconomic resources that (a) borders on being economically producible or (b) is not commercially available solely because of legal or political circumstances.

Submarginal—The portion of subeconomic resources which would require a substantially higher price (more than 1.5 times the price at the time of determination) or a major cost-reducing advance in technology.

Hypothetical resources—Undiscovered materials that may reasonably be expected to exist in a known mining district under known geologic conditions. Exploration that

TOTAL RESOURCES



confirms their existence and reveals quantity and quality will permit their reclassification as a reserve or identified-subeconomic resource.

Speculative resources—Undiscovered materials that may occur either in known types of deposits in a favorable geologic setting where no discoveries have been made, or in as yet unknown types of deposits that remain to be recognized. Exploration that confirms their existence and reveals quantity and quality will permit their reclassification as reserves or identified-subeconomic resources.

PRIMARY ENERGY PRODUCTION IN KANSAS 1945-1970

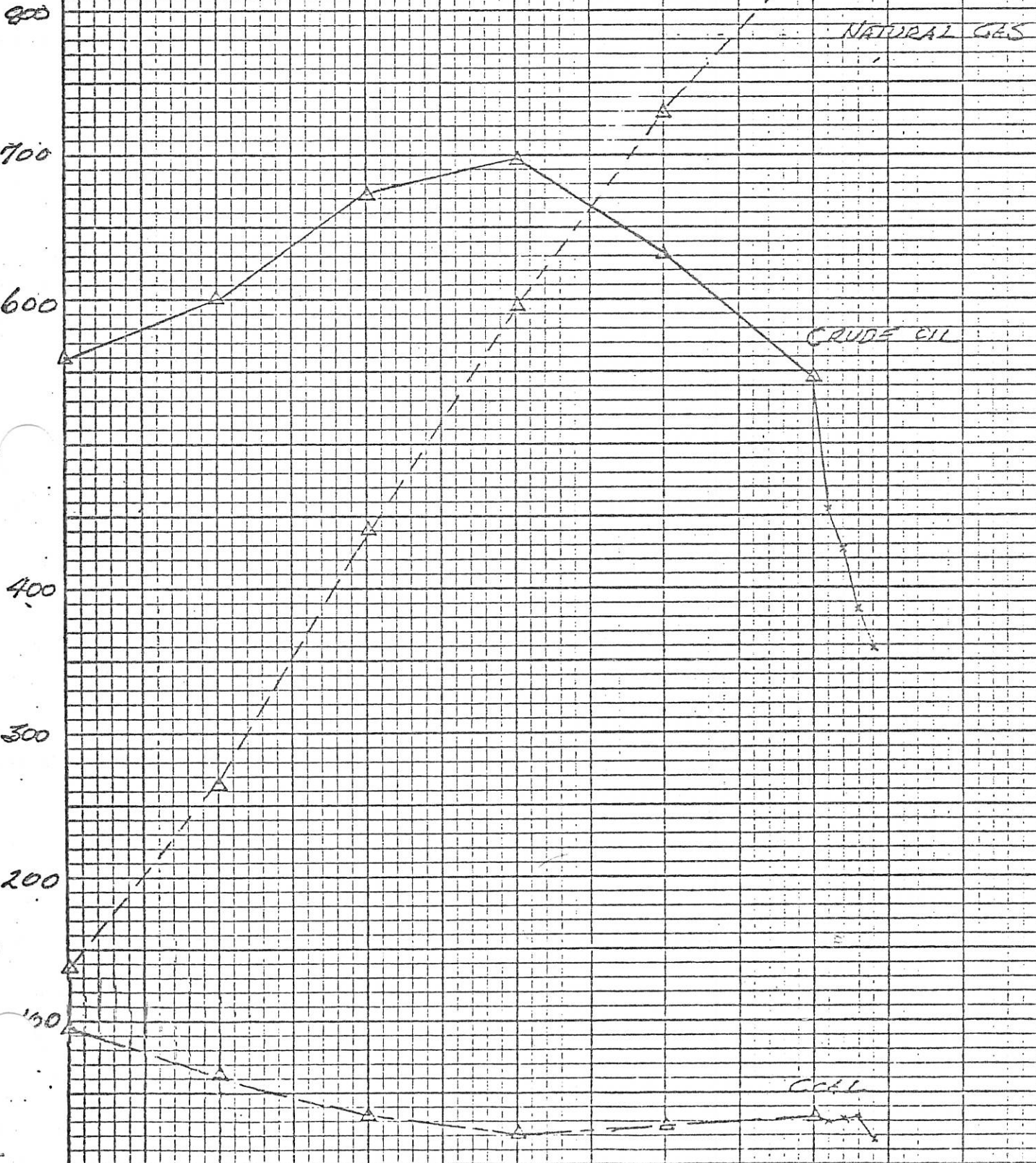
N = 5 YEAR AVERAGES (X = YEARLY SUPPLY)

NATURAL GAS - 960 BTU/CF

CRUDE OIL - 5,800,000 BTU/66L

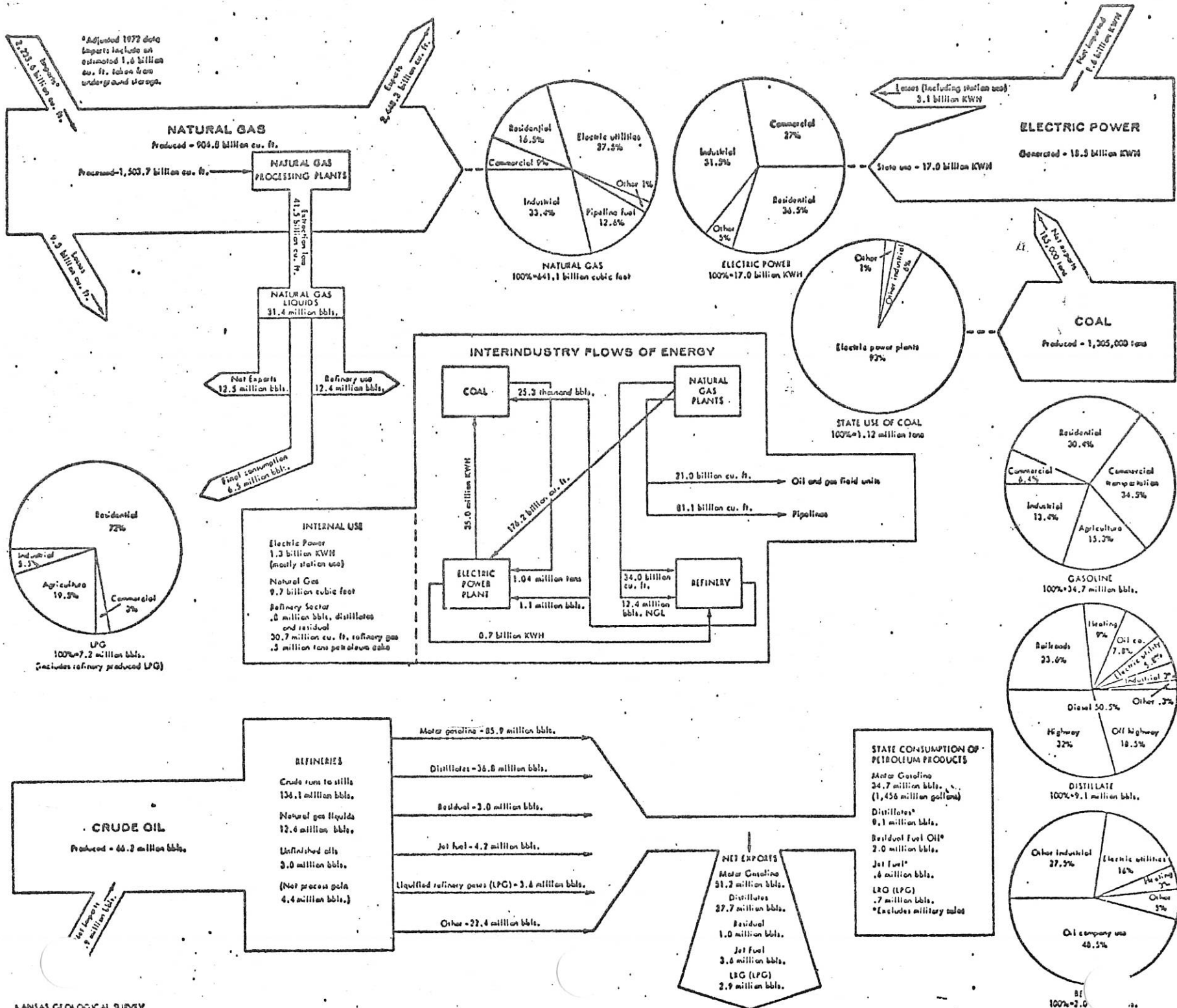
BITUMINOUS COAL - 26,000,000 BTU/TON

ENERGY - BTUX 10¹²



KREUPPEL & SOBER CO.
ENGINEERS & ARCHITECTS
1015 N. 10TH STREET
TOPEKA, KANSAS

1945 46 51 56 61 66
45 50 55 60 65 70
5 YEAR PERIODS



Natural gas (continued)

Exports	<u>2,314,562</u>
Net available	662,689
Repressuring, storage & losses	<u>14,320</u>
Available for utilization	648,369

Utilization

Pipeline and transport fuels	105,595
Natural gas liquids plants, extraction loss	43,909
Electric utilities	176,174
Residential	96,468
Commercial	48,902
Ammonia plants	26,148
All other industry	147,401
Other	<u>3,772</u>
Total	648,369

Crude Oil

Gross production (barrels)	66,227,000
Imports	<u>79,481,000</u>
Total available	145,708,000
Exports	<u>9,630,000</u>
Net available (runs to stills)	136,078,000

Utilization (production from refining)

Motor gasoline (barrels)	85,900,000
Distillates	36,800,000
Residuals	3,000,000
Jet fuel	4,200,000
Liquefied petroleum gases	3,600,000
Other	22,400,000

Bituminous Coal

Gross production (tons)	1,305,000
Imports	<u>none</u>
Total available	1,305,000
Exports	<u>185,000</u>
Available for utilization	1,120,000

Utilization

Electric utilities	1,042,000
Industrial	67,000
Other	11,000

FUTURE ENERGY CONSUMPTION IN KANSAS

To have some indication of the potential future requirements for energy in Kansas forecasts were made by Emerson based on the Kansas input-output model¹. Forecasts were made for natural gas requirements, gasoline and

¹Emerson, M. Jarvin, Interindustry Projections of the Kansas Economy 1980-2020. Department of Economics, Kansas State University, Manhattan, Kansas. 1971.

crude oil, refined petroleum other than gasoline, coal, and electric power, and are shown on figures 4, 5, 6, 7, and 8 respectively. These forecasts are basically from historic trends; such things as allocation and conservation programs or increased car mileage will alter requirement growth rates. The overall effect could be one of changing time schedules.

These schedules are also based on continued availability of adequate quantities of natural gas, crude oil, and coal. Actually, only coal appears to be present in sufficient quantity for long range use whereas natural gas and crude oil are being depleted.

ENERGY SUPPLIES AVAILABLE IN THE SHORT RUN

The short run supplies of energy to meet Kansas needs must of necessity consist of the following:

- (1) increased use of coal for generating electricity and possibly some other uses;
- (2) increased imports of crude oil and natural gas and, if foreign crude or gas, at a substantially increased price;
- (3) the development of as much new oil and gas as can be found by stepped up exploration; and
- (4) continued withdrawals from present in-state reserves of crude oil and natural gas.

Available crude oil and natural gas supplies will need to be allocated to present uses which in turn suggests restrictions on new construction,

FIG KANSAS NATURAL GAS REQUIREMENTS AND PROJECTED PRODUCTION

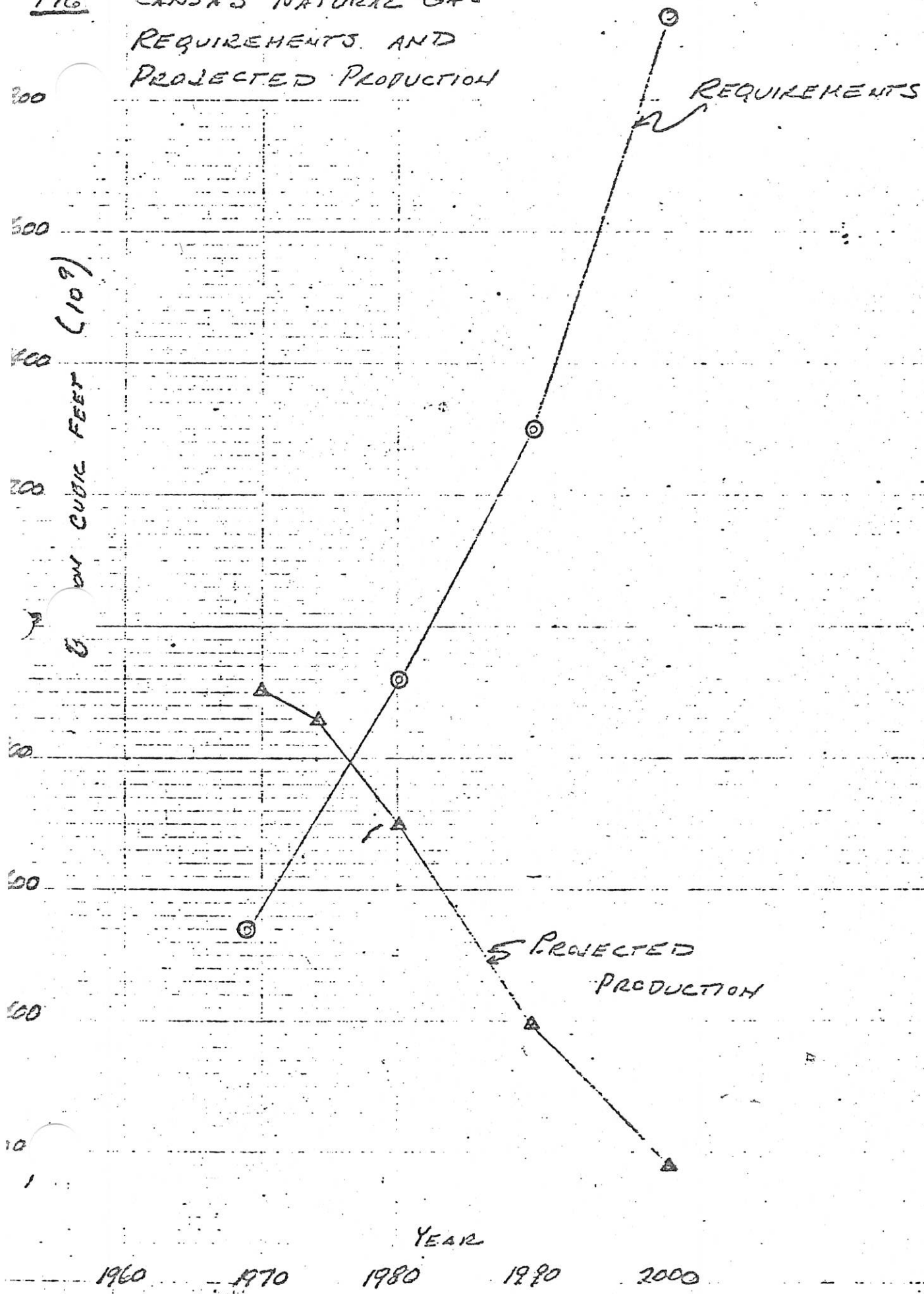


FIG. 6 KANSAS REQUIREMENTS FOR
REFINED PETROLEUM OTHER
THAN GASOLINE.

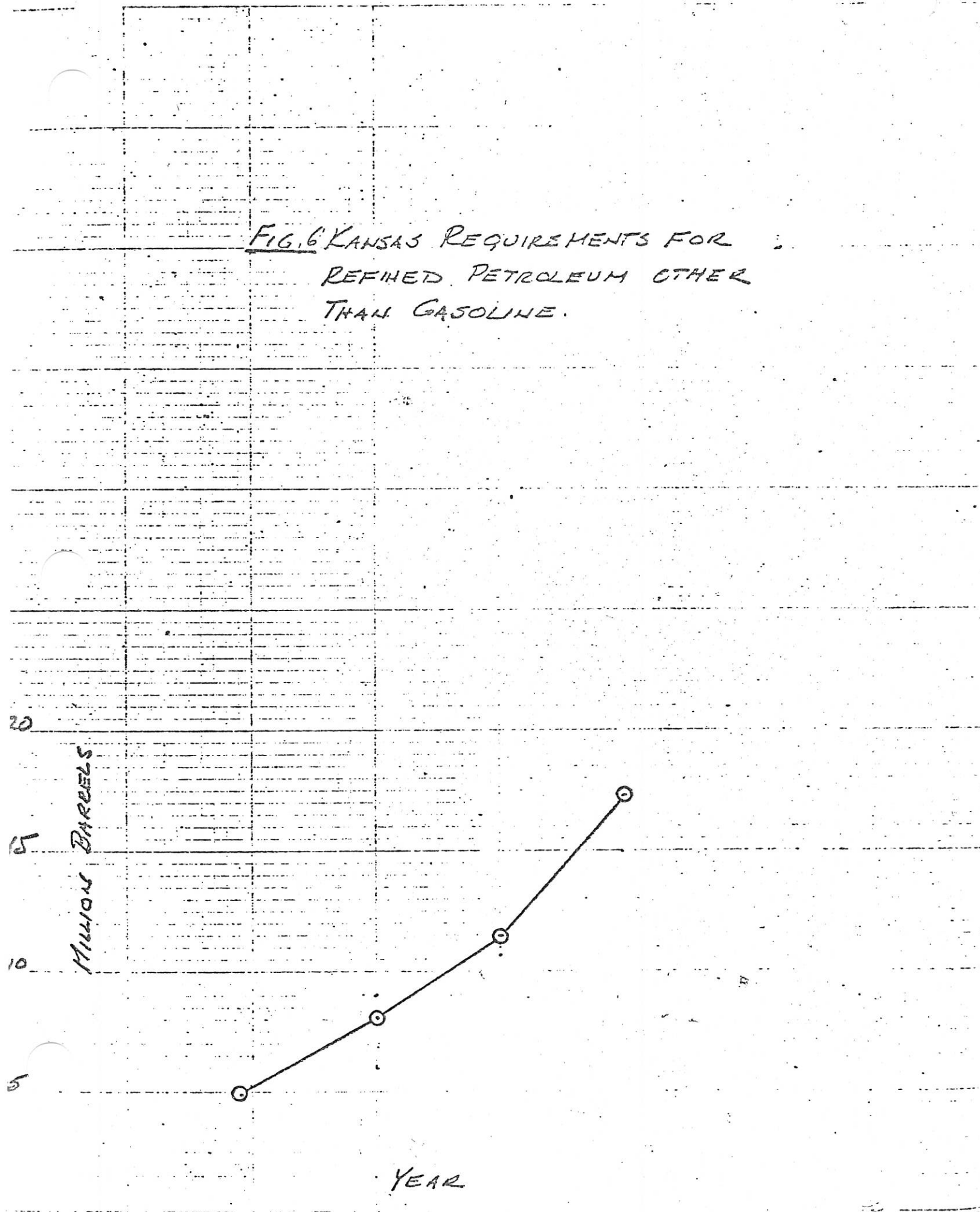
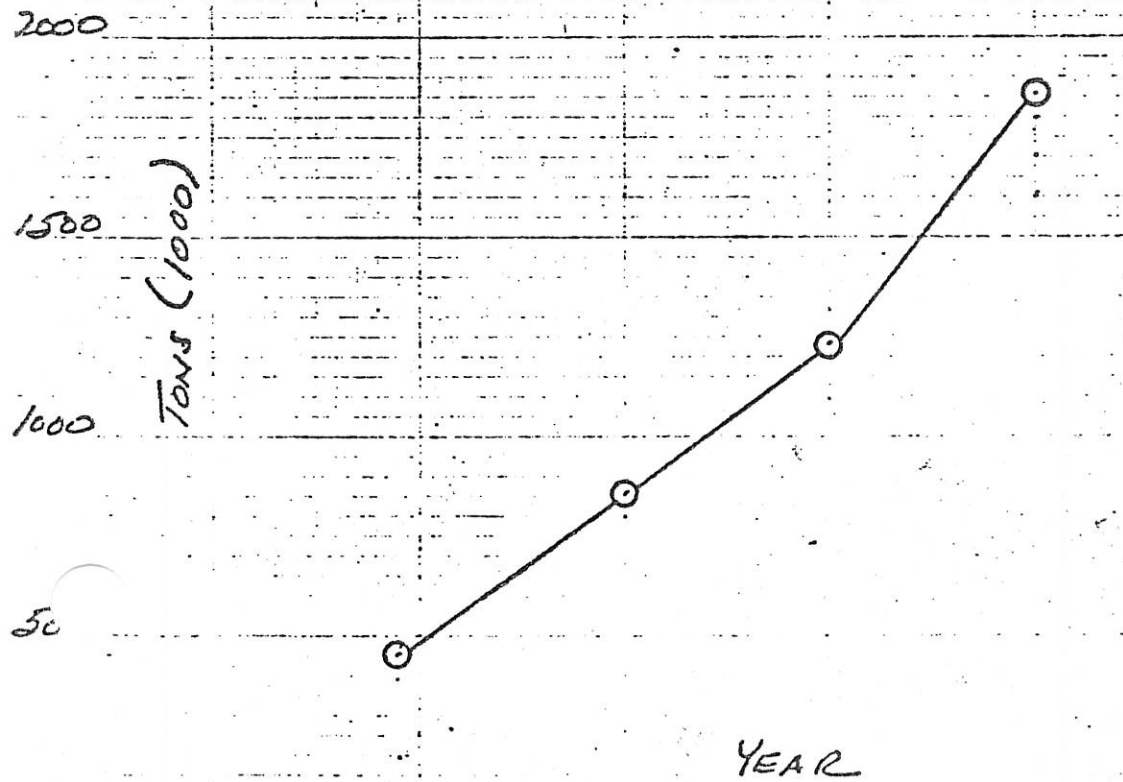
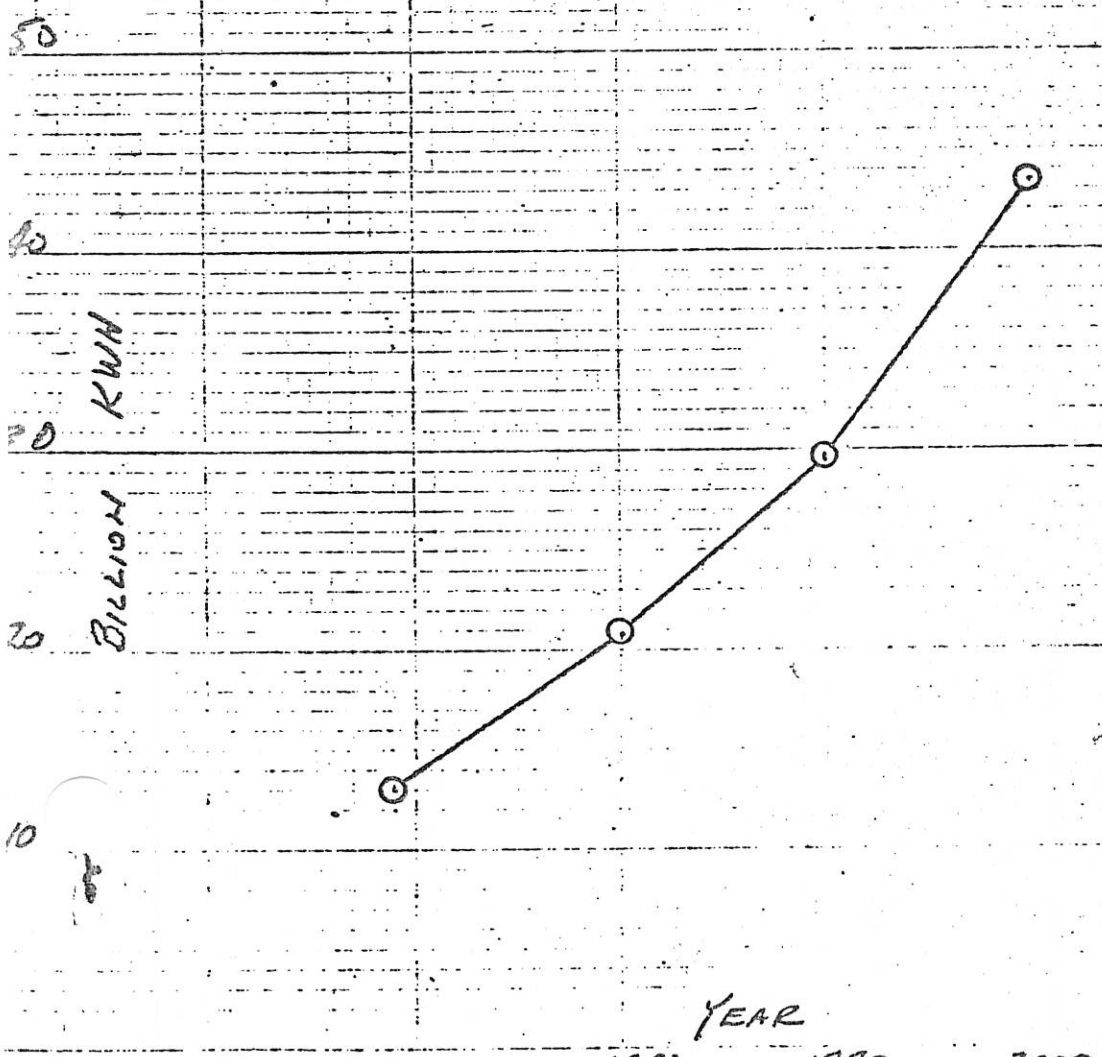


FIG: 7 KANSAS REQUIREMENTS
FOR COAL



ESTIMATED KANSAS
FIG. 8 ELECTRICITY REQUIREMENTS



new industry, and possibly exports of crude oil and natural gas from Kansas. At the same time new types of energy materials should begin to be developed to prepare for the longer run.

LONG RUN ENERGY PROSPECTS FOR KANSAS

Faced with depleting reserves of natural gas and crude oil in Kansas, which have been corner stones of the Kansas economy, Kansas citizens are going to be faced with choosing alternate fuels.

Kansas coal with its substantial reserve and resource position should be one of the leading energy materials utilized for electricity generation. Utilization could be either raw coal with SO₂ removal, coal gasification add on units, or solvent refined coal. Minimally, all investor owned electricity generating plants could convert to a coal based fuel. The needed basic research is completed with coal conversion plants already operating in other countries. They need only to be adopted in the U.S.

Tar sands and oil shales could become sources of large quantities of crude oil and/or gas. The immediate need is to define the extent of the reserves and develop methods of obtaining the oil and gas from the host rock.

Nuclear energy is the sleeping giant and its use should be programmed into the Kansas energy picture as part of long range planning. This could carry the anticipated increased electrical energy load as well as the added electrical load needed to supply residential, commercial, and industrial heat.

Energy needs in BTU to the year 2000 and anticipated supplies from Kansas are listed in Table 1. These data point to a much needed overall plan and time schedule for phasing in new energy materials as present supplies become inadequate.

The use of natural gas is an issue that can well illustrate the need for action. It appears that by 1980 practically 100 percent of industrial and power generation use of natural gas will be curtailed. Most all remaining gas will be reserved for residential/commercial use. Figure 9 illustrates a probable curtailment schedule.

One scenario that might be followed consists of the following steps.

(1) Convert one-half of present investor owned utilities now using natural gas to coal by adding low to medium BTU gasification plants. Complete this change over by 1980-85.

(2) Convert remaining investor owned electric generating plants to coal firing and require all new residences to be heated electrically. Complete this by 1990-95.

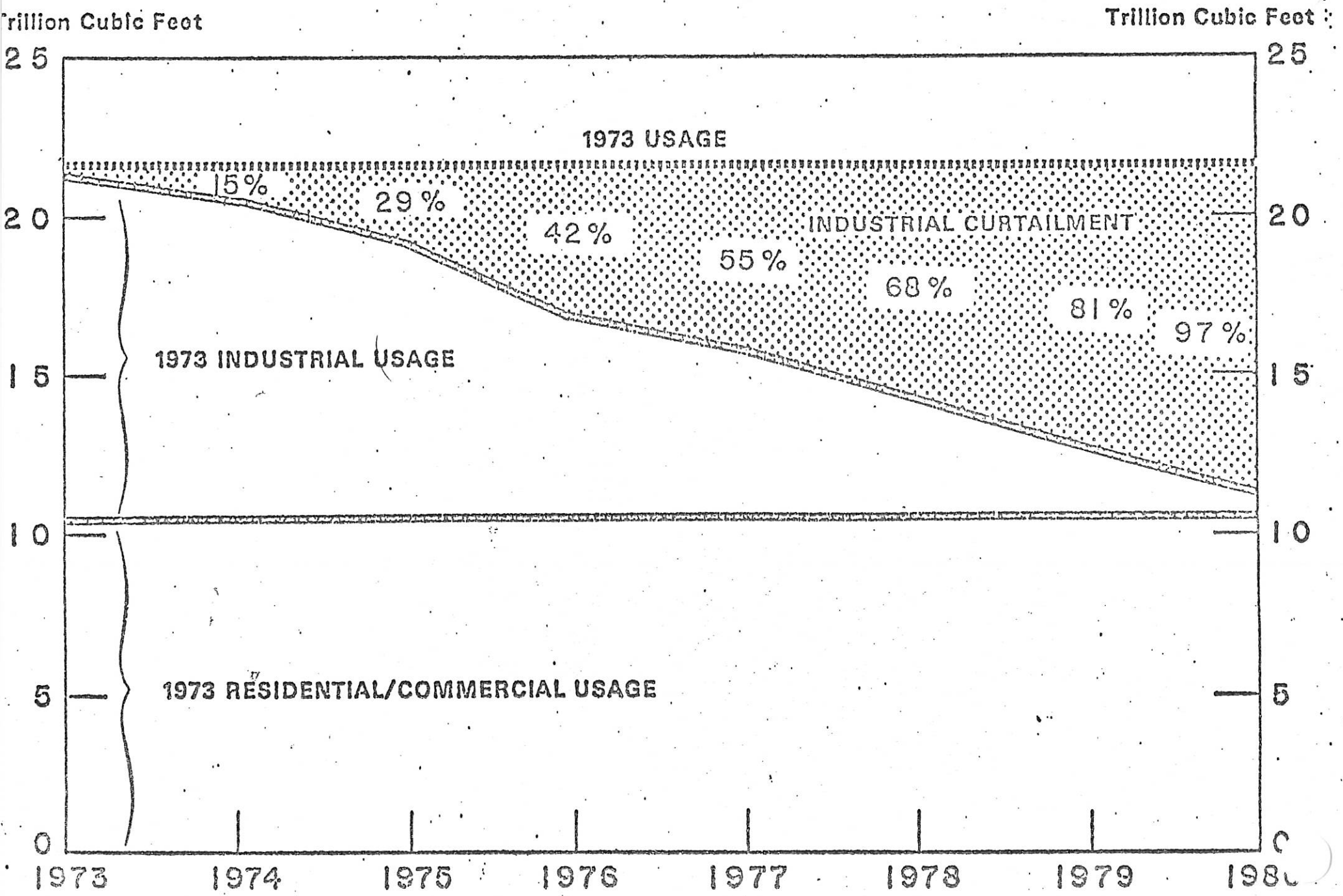
(3) Finally, all new electric power to be generated with nuclear energy, with one-half of commercial heating to be done electrically as well as one-third of industrial heating. This step to proceed from year 2000.

There are several important omissions in the foregoing schedule such as: availability of capital, availability of equipment, and the lead-time needed for each conversion. Interminable delays to prepare acceptable

Table 1: Kansas Energy Needs and Anticipated Supplies in BTU ($\times 10^{12}$)

	BTU produced 1973	Estimated BTU Requirements Historical Growth Scenario			Estimated Projected BTU Available--Most Likely Events		
		1980	1990	2000	1980	1990	2000
Natural Gas	709	949	1,342	1,990	765	426	197
Crude Oil	762	1,043	1,438	2,120	263	140	67
Total	1,471	1,992	2,780	4,110	1,028	566	264
Coal	27	21	30	45			
Total	1,498	2,013	2,810	4,155			

Fig. 9:- ESTIMATES OF NATURAL GAS CURTAILMENT

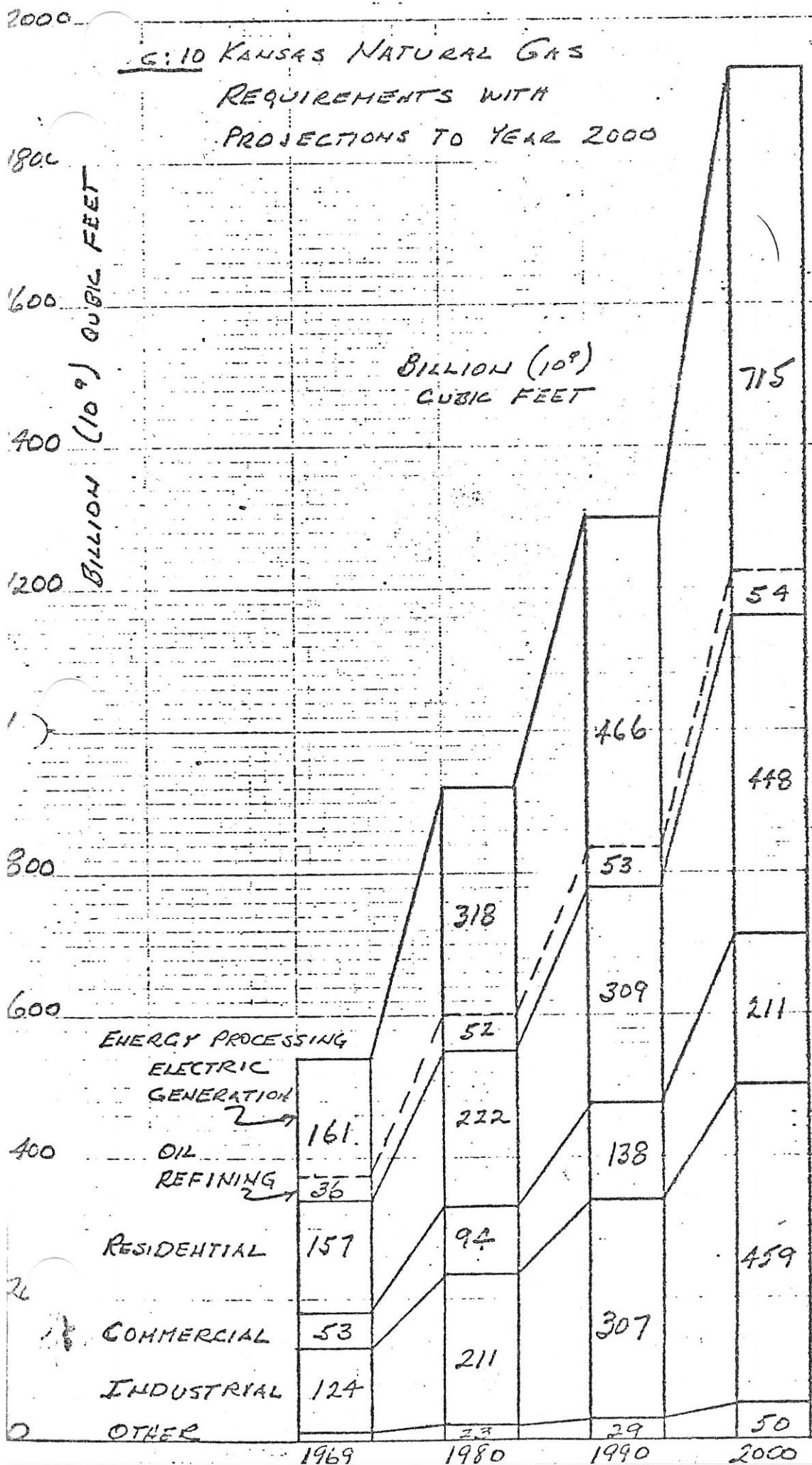


impact statements and to obtain approvals are virtually unknown time constraints. Nevertheless, contingency plans must be formulated.

The present situation and the effects of changes are displayed graphically in Figures 10-13 inclusive. These show this use distribution of natural gas with projections to 2000 and the effects of the stepwise change over from natural gas to other energy sources.

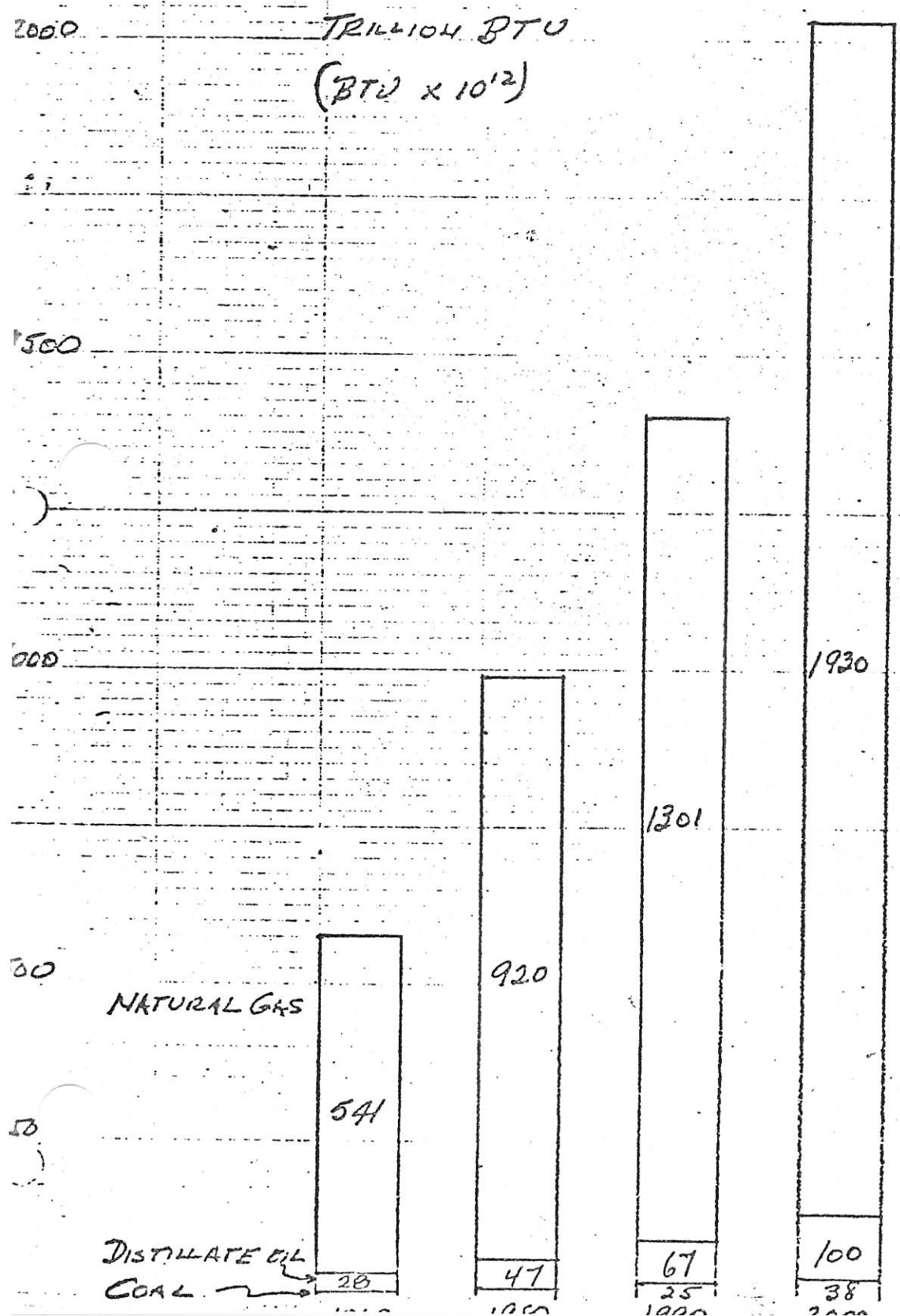
5:10 KANSAS NATURAL GAS
 REQUIREMENTS WITH
 PROJECTIONS TO YEAR 2000

ACTUAL
 PRODUCTION
 FOR 1969 AND
 1973.



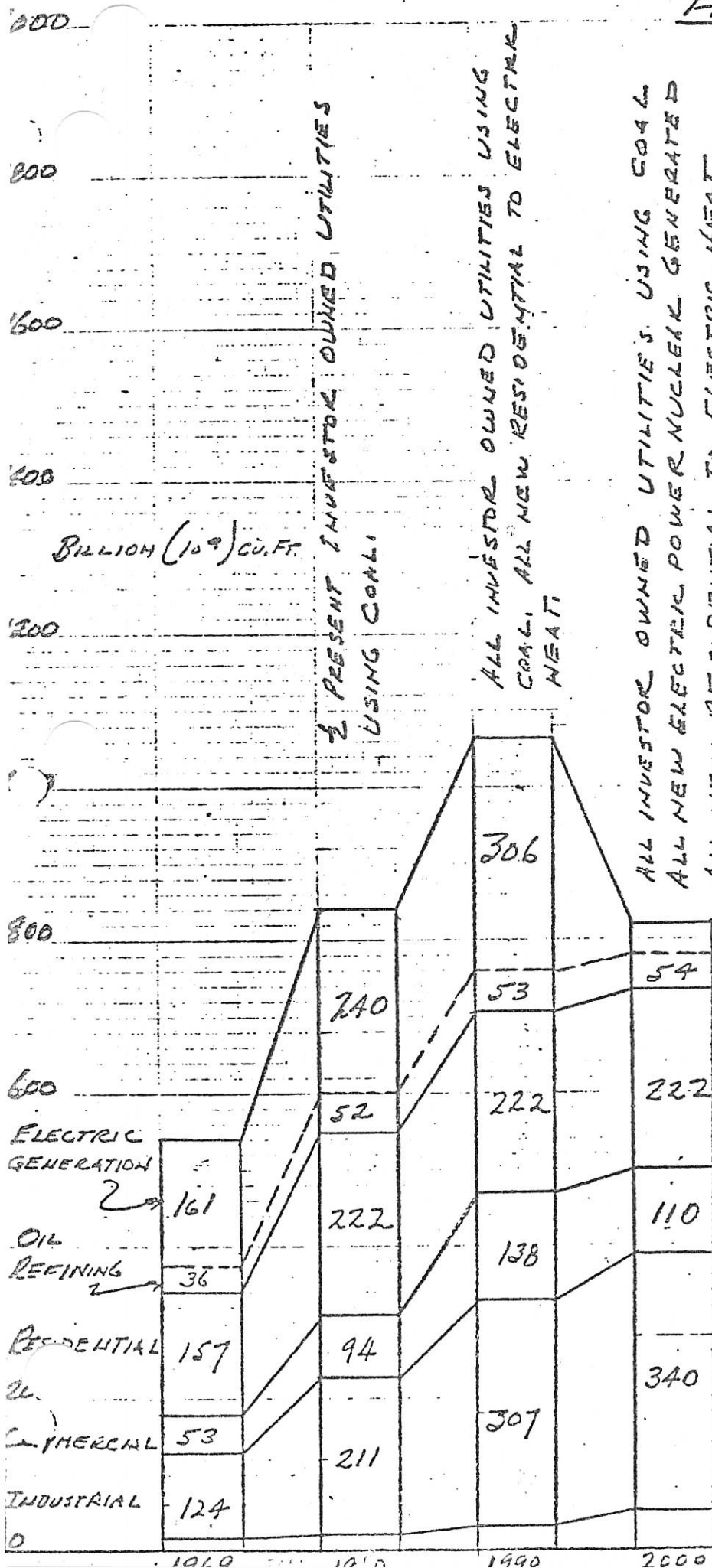
Category	1969	1973
LOSSES & STORAGE		
ELECTRIC UTILITIES	161	176
TO LPG	36	44
EXPORT	294	235
FOR GAS PRODUCTION	81	106
RESIDENTIAL	298	319
COMMERCIAL		
INDUSTRIAL		

1.11: KANSAS NATURAL GAS
 REQUIREMENTS WITH
 PROJECTIONS TO YEAR 2000



GAS
 OIL
 COAL

FIG. 12 NATURAL GAS ESTIMATED CURTAILMENT BILLION CU. FT.



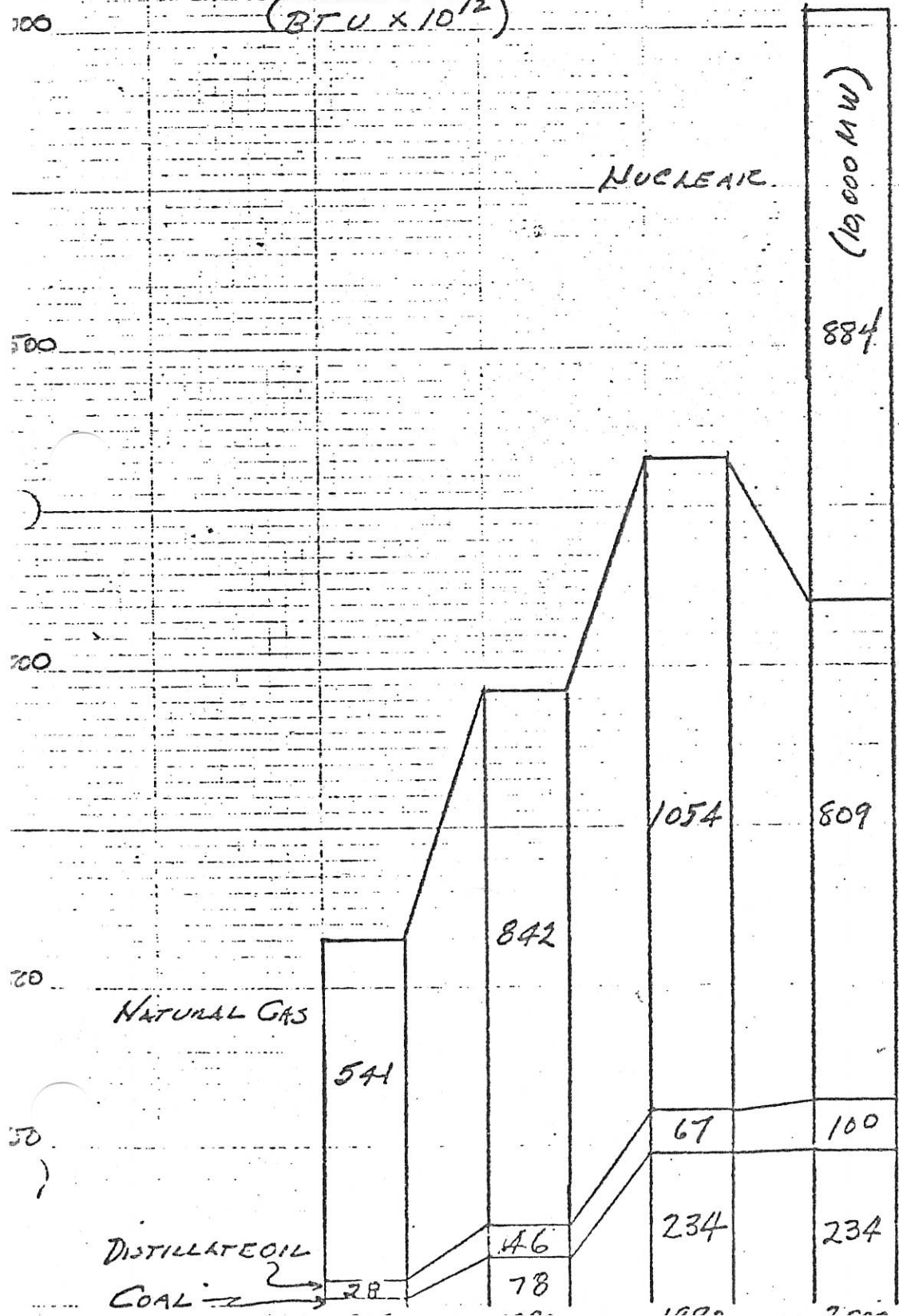
PRESENT INVESTOR OWNED UTILITIES USING COAL

ALL INVESTOR OWNED UTILITIES USING COAL, ALL NEW RESIDENTIAL TO ELECTRIC HEAT

ALL INVESTOR OWNED UTILITIES USING COAL
 ALL NEW ELECTRIC POWER NUCLEAR GENERATED
 ALL NEW RESIDENTIAL TO ELECTRIC HEAT
 ONE HALF COMMERCIAL TO ELECTRIC HEAT
 ONE THIRD INDUSTRIAL TO ELECTRIC HEAT

FIG NATURAL GAS ESTIMATED
 CURTAILMENT PLUS COAL
 AND NUCLEAR REPLACEMENT
 TO SUPPLY CURTAILED NATURAL GAS.

TRILLION BTU
 (BTU x 10¹²)



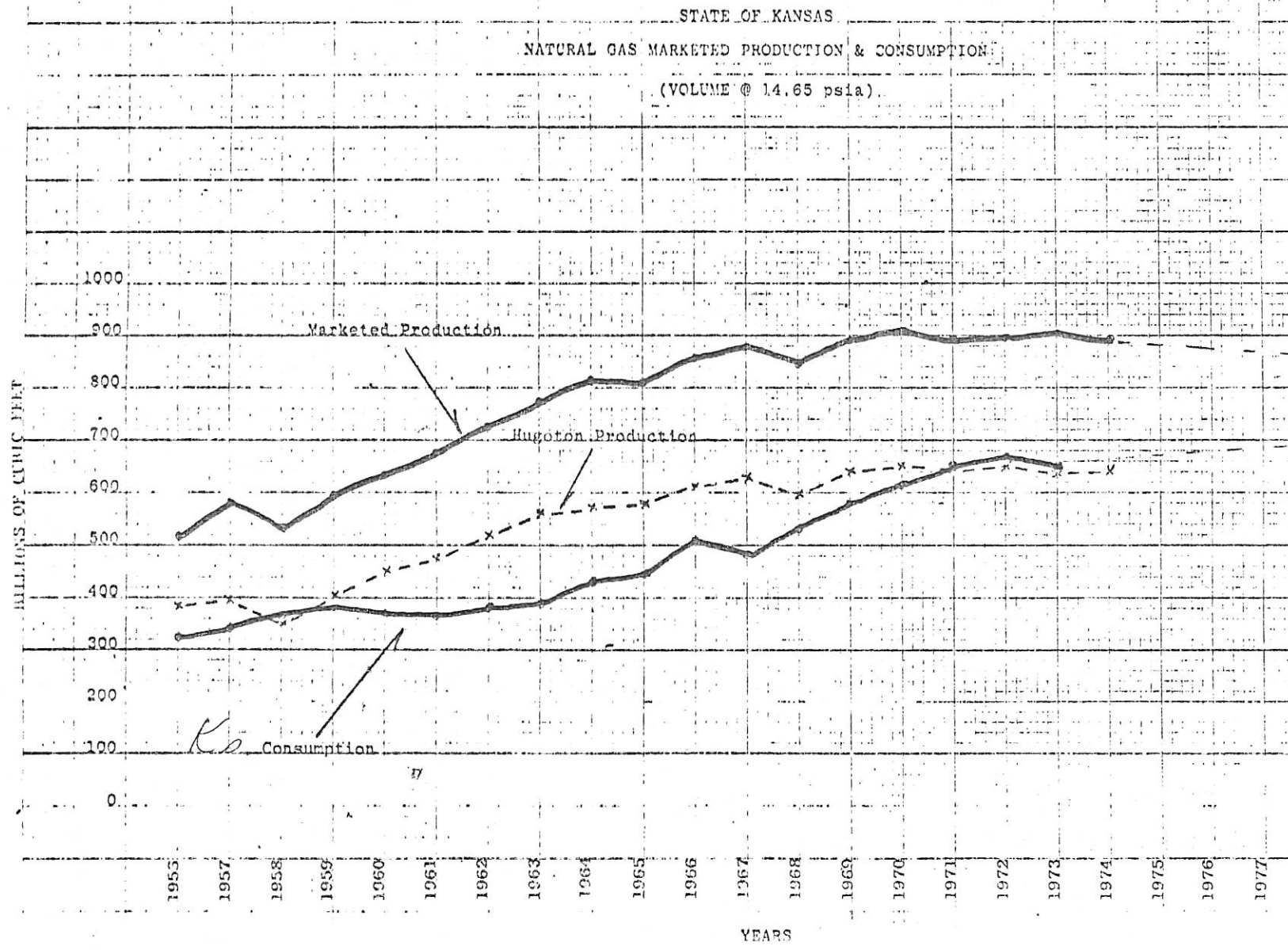
1974 KANSAS NATURAL GAS SUMMARY

PRORATED FIELDS	19
SPACED FIELDS	81
COMBINATION OIL/GAS	22
UNPRORATED	181
TOTAL PRODUCING FIELDS	303

GAS FIELD RESERVES NO. AS OF (1-1-75)	WELLS	(MMcf.)	1974 PRODUCTION (MMcf.)
HUGOTON	3,939	11,324,045	640,822
PANOMA	839	789,777	64,535
SPIVEY GRABS	368	180,376	18,682
SUBTOTAL	5,146	12,294,198	724,039
ALL OTHER FIELDS	3,734	1,194,527	170,269
TOTAL	8,880	13,488,725	894,308

UNCONNECTED WELLS 76
(ESTIMATE)

1973 Production	902,190 MMcf.
1972 Production	898,619 MMcf.
1971 Production	894,451 MMcf.
1970 Production	909,413 MMcf.
1969 Production	888,039 MMcf.
1968 Production	848,381 MMcf.
1967 Production	881,139 MMcf.
1966 Production	856,422 MMcf.
1965 Production	808,789 MMcf.
1964 Production	810,070 MMcf.
1963 Production	773,372 MMcf.
1962 Production	725,303 MMcf.
1961 Production	676,236 MMcf.
1960 Production	632,610 MMcf.
1959 Production	595,245 MMcf.
1958 Production	535,937 MMcf.
1957 Production	580,699 MMcf.
1956 Production	512,895 MMcf.



1973 - CONSUMPTION OF NATURAL GAS BY TYPE OF CONSUMER (1)

(ALL VOLUMES IN MMCF @ 14.73 PSIA)

	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Electric Utilities</u>	<u>Misc.</u>	<u>Other (2)</u>	<u>Total</u>
Kansas	96,468	48,902	173,549	176,174	3,772	149,504	648,369
% of Total	14.88	7.54	26.77	27.17	.58	23.06	
United States	4,879,387	2,288,041	8,743,514	3,605,333	308,996	3,140,643	22,965,914
% of Total	21.25	9.96	38.07	15.70	1.35	13.67	

NOTES:

(1) SOURCE - U. S. Bureau of Mines - Mineral Industry Surveys

(2) Extraction Loss, Lease and Plant Fuel and Pipeline Fuel

I would like to present some conclusions about the natural gas problem which have been drawn both from my experience in the fuel allocation office, and from exchanges with other states during periods of natural gas curtailment.

One misconception in consideration of the natural gas problem is the segregation of this problem apart from those involving other forms of energy, and products or results derived from energy. The problems not only have huge areas of overlap but, in their end results, they are only separate segments of the same problem.

There is no practical way to segregate natural gas from petroleum energy. I would like to itemize a sequence which I have seen repeated, over and over, whenever a natural gas curtailment occurs. For illustration, I will use the large 50 per cent curtailment sustained last winter by many of the industries and utilities in Kansas.

First, the curtailment occurs. This triggers an immediate demand for alternate fuel as a replacement for natural gas. In almost all cases, this alternate fuel -- usually diesel fuel or heating oil -- is much more costly than natural gas. Thus, its continued usage is reflected in the financial flexibility of the plant or utility which is curtailed.

When the curtailment occurs, an immediate upsurge is recorded in the demand for diesel fuel or heating oil, with the demand coming from the curtailed users. This upsurge, almost always, is accompanied by a dip in demand from other industry-connected users of diesel fuel. It is my opinion,

based upon discussions with those personally involved, that the dip in demand from commercial users dependent upon curtailed industries is a direct reflection of lessened financial activity as a direct result of the increased cost of the alternate fuel being burned as a replacement for gas.

To me, this cycle means one thing: The subject of fuel, whether it is petroleum fuel or natural gas, is not an end topic in itself. Instead, the fuel is only an economic tool used to produce an economic result. The basic question involves not only the physical availability of this fuel, but the economic consequences surrounding this availability.

In the case of curtailed industries, and particularly the smaller powerplants, simple availability is not the key factor, because alternate fuel has been available; my office has seen to that. However, the additional cost of this alternate fuel has, in many cases, translated the problem from the physical to the economic arena.

From the time I entered the allocation office, I have followed two parallel courses. My office has supplied the fuel to prevent or alleviate hardship, but at all times the economic ramifications of the need have also been established. This awareness of the economic consequences of the problem has allowed us, many times, to act to prevent need -- and its economic overtones -- from arising.

I stress the economic side of the energy problem because it is a side which cannot be discounted or overlooked. It is, in my opinion, as great or greater than the question of energy

availability because of the ripple effect it triggers in all segments dependent upon the primary user of the fuel itself.

A simple price rise of the fuel itself, even though it is badly needed as an incentive for production of additional energy supplies, is only a partial answer if it does not also include a thorough and complete identification of all economic consequences arising from the additional cost to users.

I will cite one illustration of a possible chain-reaction effect of additional costs. This involves the city-owned municipal powerplants, of which Kansas has 67, serving a very large percentage of the total population.

These plants are voter-owned and thus exist at the mercy of the voters. Because they were curtailed heavily last winter, they are experiencing a severe financial pinch. They are approaching the point where their voter-owners are being strained to support them.

If their operational costs, passed on to customers in the form of utility bills, reach an unsupportable level, the voters will order these plants abandoned, with power then to be bought from the major utilities.

Can the major utilities absorb the added burden of these 67 plants without overtaxing their capacities? If these 67 plants fall, what will be the economic results? These are the types of questions for which hard answers are needed as part of any planned energy price rise.

Another area where hard answers are needed is that involving agriculture, and I do not mean specifically the farmers because they are only the producers of a raw material which has little value unless it is translated into a marketable product. Directly, in raw production, the farmer's dependence upon gas is limited mainly to irrigation usage.

Indirectly and economically, the farmer is extremely vulnerable because his entire marketing cycle is based totally upon adequate supplies of gas, when and where needed. This is the area where hard answers are needed, and quickly. I will cite one example of dependence by the farm marketing chain:

There are, in Kansas, about 1,000 gas-fired grain dryers in public elevators. These dryers were installed to allow the elevators to buy wet corn and milo, dry it at once and move it immediately into market channels. As a result, today's entire marketing cycle revolves around the post-harvest availability of storable or usable corn and milo, in direct contrast to the earlier pattern of winter crib drying, and spring sale.

Two alternatives seem to be ahead for these elevators. If natural gas is curtailed, thus making grain drying impossible at the normal time, the marketing chain will be disrupted. If natural gas prices rise sharply without adequate time for preparation, the farmers simply will absorb these higher costs in the form of lower prices paid for their grain.

In either alternative, the key factor is not solely the natural gas, but the economic consequences arising from a change in the status of the gas. The entire marketing cycle

should be studied now, before any such change occurs, to learn the consequences of the change. After it has occurred is too late. Time is running out. Answers are needed now while some time remains.

Repeatedly, in my conduct of the fuel allocation office, I have seen patterns appear such as I have outlined here, with the physical fuel as only one of two co-equal factors in the problem. Any attempt made to solve only the fuel aspect of the problem without an accurate identification of, and actions in, the economic aspects is only a partial solution.

The point I want to make is this: Even though a study of the production and availability factors of natural gas is very important, a study of the economic factors as they relate to society is equally important, and possibly more important because the economic capability of society determines to a great extent all of the other factors.

Hard, realistic answers are needed in this area, which has been overshadowed for too long by the problems of availability and production. If, before I cease to be fuels coordinator on June 17, I do nothing else but create an awareness of this aspect of the problem, it will be worthwhile because this is the part of the problem which reaches directly to the people themselves.

HEARING - SPECIAL COMMITTEE ON NATURAL GAS

June 13 - 9:00 A.M. - Topeka

I Special Committee on Natural Gas.

Senators

Representatives

George D. Bell (D) Kansas City
 ✓ Ross O. Doyen (R) Concordia
 John M. Simpson (R) Salina
 Vincent E. Moore (D) Wichita
 ✓ Jack W. Janssen (D) Lyons

Paul Burke (R) Leawood
 ✓ E. Richard Brewster (D) Topeka
 Harold P. Dyck (R) Hesston
 Walter W. Grager (D) Pretty Prairie
 Ben Foster (R) Wichita
 Herbert A. Rogg (D) Russell
 William Southern (R) Ellinwood
 Keith Farrar (R) Hugoton

II Hearings.

June 12 - State agencies (KCC & KGS)

June 13 - Gas producing industry (KIOGA, et al)

8:00 A.M. KIOGA meeting - Jayhawk Hotel, Coffee Shop

9:00 A.M. Gas Committee Hearing - Capitol Bldg., 5th Floor

III Industry Objectives.

Maintain favorable gas exploration climate

Increase intrastate natural gas supply

Assist Legislative Study Committee

IV KIOGA Presentation. (Don Schnacke, Moderator)

1. Introductory statement. (Don Schnacke)
(KIOGA)

Opening remarks
 Industry objectives
 KIOGA format
 Introduce speakers

2. Where is Natural Gas Found in Kansas?

Gas fields
 Geology
 Reserves
 Future prospects

(Jim Gear) *Petroleum*
 (Gear Operating Co.)
Wichita

3. Market and Supply Conditions.

Kansas market
Other states
Intrastate pipelines.

(Bob Spurlock)
(Clinton Oil Co.)

4. Industry Exploration Plans.

Economics
Drilling
Production and distribution

(Roger Messman)
(Messman-Rinehard Oil Co.)

5. Effect of Governmental Regulation.

FPC - History & today
Regulation by price
Market disturbances
Other problems

(Dick Randall) *Counsel for*
(Petroleum, Inc.) *subsidi-*
WV IN S BS

6. Pending Federal Legislation.

Loss of depletion
Gas regulation
Other legislation

(Bob Williams) *owner*
(Imperial Oil Co.) *BS*
o s 3 s

7. Governmental Activity in Other States.

Oklahoma response
Texas response
Other

(Bill Wells)
(Texas Oil & Gas) *statement?*

8. Producer Opposition to Intrastate Gas Regulation.

First statement -

(Roger McCoy - McCoy Petroleum Co.)

Second statement -

(Jim Gould - Consulting Geologist)

Third statement -

(Jack Gurley - Pickrell Drilling Co.)

9. Closing Statement.

Summarize
Recommendation to committee
Assistance in future hearings

(Don Schnacke)
(KIOGA)

STATEMENT OF ROBERT C. SPURLOCK, OPERATIONS ATTORNEY

CLINTON OIL COMPANY

Re: Testimony relating to 1975
Interim Committee Proposal No.43
Natural Gas, June 14, 1975

Introduction

Mr. Chairman, members of the Committee, my name is Robert C. Spurlock. I am employed by Clinton Oil Company as Operations Attorney. My responsibilities include the negotiation, renegotiation, and administration of all gas sales contracts for Clinton Oil Company. Clinton Oil Company produces 80 million cubic feet of gas per day in 11 states under 500 separate gas sales contracts. We average one new gas sales contract each month, and for the past 18 months have been averaging between six to seven renegotiations per month. The conditions of the intrastate markets in several of these other states I think should be pointed out to the committee.

Market Conditions in Other States

In southern Louisiana we experience offers for the purchase of gas ranging from \$1.10-\$1.120/MCF. In the Texas Gulf Coast prices range from \$1.50-\$1.90/MCF. In west Texas current offers are \$1.30-\$1.80/MCF. In Oklahoma we have offers ranging from \$1.00 up to \$1.50/MCF for a recent contract in Blaine County, Oklahoma. These prices originated in these areas because of the complex network of competitive intrastate gas pipelines. Prices started increasing in these areas two years ago and we have seen a leveling of these prices within the last three to four months.

In southern Louisiana, west Texas, and Oklahoma we have very recently been advised by one or more purchasers that their lines are full. In southern Louisiana

two purchasers have advised that their lines are full and one of these purchasers has asked us to delay additional development. In west Texas two purchasers have advised that their lines are full and one of these purchasers has further advised that a third purchaser has 500 million cubic feet of gas per day for sale. These purchasers are now contemplating going to the Railroad Commission and asking that allowables be decreased. In Oklahoma one intrastate purchaser has advised us that its line in Major County was full. This condition arises because of the increased exploration and development activity in these areas in the past two years. This increased activity is due to the improvement in the intrastate market price available for natural gas.

I think that the condition of the intrastate markets in these areas offer a startling contrast to the condition of the FPC controlled interstate pipelines which are currently experiencing curtailments ranging from 10% to 20%.

Conditions in Kansas

As we take a look at the map of Kansas, the intrastate pipelines in Kansas located in the primary gas producing area of Kansas are shown colored in this map as follows: Black, Peoples Natural; Red, Kathol; Yellow, Kansas Gas Supply Corporation; Green, Kansas Power & Light. As we look to the map moving in a westerly direction, proceeding past the Kathol and the Kansas Gas Supply systems, and entering the southwest portion of the state, which is the primary gas producing area of the state, we find that there is only one intrastate purchaser in that area. There are many additional pipelines shown in red and all of these are interstate lines. These interstate lines are limited to 51¢ base price/MCF. This base price can be increased by 50% for small producers, but this is subject to refund.

As far as intrastate markets in this southwest portion of Kansas, we experience offers ranging from 65¢-75¢/MCF. This price is just enough above the interstate

price to enable the intrastate purchaser to buy any gas that any producer stumbles onto in this area. This price is not sufficient to bring about the increased level of exploration and development that has been experienced in Louisiana, Texas, and Oklahoma.

Clinton Oil Company

I hope you understand that Clinton Oil Company with its home office and principal place of business in Wichita, Kansas is anxious to participate in the effort to assure an adequate supply of natural gas to the state of Kansas. I am sure you also understand that as a corporation we have the responsibility to our stockholders to invest our money in a prudent manner. With the exploration opportunities that we have throughout the United States we find that the economic incentive for natural gas exploration in Kansas does not compare favorably with the incentives in Louisiana, Texas and Oklahoma.

Summary

To summarize, the competitive intrastate markets in other areas have in a short time shown that increased natural gas prices will bring about a level of exploration and development that will assure adequate supplies of this premium fuel. In that same period of time, because of the lack of competition among intrastate purchasers in Kansas, there has been a very modest improvement in natural gas prices and a much less significant increase in natural gas exploration in the state of Kansas.

Recommendations

I believe that this committee in order to assure development of adequate supplies of natural gas for the state of Kansas should take steps to make gas exploration an attractive venture in this state. I would suggest that the Kansas Corporation Commission be encouraged to adopt an automatic cost through system for intrastate

gas purchasers in the state of Kansas just as they have adopted a cost pass through system for electric utilities in the state of Kansas. The Oklahoma Corporation Commission adopted such a rule approximately a year ago and this has enabled the Oklahoma intrastate purchasers to provide the necessary incentive to bring about an increase in exploration and development. I would further suggest that this committee consider adopting for the state of Kansas, a provision which has been proposed by the FPC for interstate markets, which would allow certain end users of natural gas to negotiate for the purchase of natural gas at the wellhead with transportation being arranged through existing intrastate lines.

SPECIAL COMMITTEE ON NATURAL GAS

June 13, 1975

OUTLINE: Statement of R. D. Randall, General Counsel
Petroleum, Inc., Wichita, Kansas

SUBJECT: Governmental Regulation of Natural Gas Industry

I Regulation of Natural Gas Industry by Kansas Corporation Commission.

1. Purpose - Prevent physical and economical waste.
2. Basic statutes for conservation:
 - a) 1935 - Oil conservation statutes.
 - b) 1945 - Gas conservation statutes.
3. Conservation Division authority for gas regulation:
 - a) Establish monthly well allowables.
 - b) Require uniform testing of wells.
 - c) Set monthly pool allowables.
 - d) Prorate production between wells by field rules, etc.
 - e) Control over and under production of wells.
 - f) Hold market demand hearings.
 - g) Regulate salt water disposal.
 - h) Regulate plugging of wells.
 - i) Prevent pollution.
 - j) Regulate repressuring and secondary recovery.
 - k) License pipeline common carriers.
4. Evaluation and conclusions:
 - a) Conservation activities benefit public and industry.
 - b) Performance of KCC has been excellent over all.
 - c) Statutory authority of KCC should not be expanded for natural gas.

II Federal Regulation of Natural Gas. (Federal Power Commission)

1. FPC legal authority for gas regulation:
 - a) 1938 - Natural Gas Act passed.
Regulation of transportation and sale of natural gas.
 - b) 1954 - Phillips Petroleum Co. v. Wisconsin Independent Producers
selling gas in interstate commerce.
2. FPC method of gas producer regulation - Price.
 - a) 1954 - Cost of Service concept.
 - b) 1961 - Area Rate concept.
 - c) 1974 - National Rate concept.

3. FPC procedures for gas producer regulation:
 - a) Regulation of natural gas in interstate commerce.
 - b) Certificate of Public Convenience and Necessity.
 - c) Periodic Rate Increase Filings.
 - d) FPC refund orders to reduce price.
 - e) Approval for abandonment of wells.

4. Problems created by FPC regulation:
 - a) Inadequate price for natural gas.
 - b) Inefficient useage of natural gas.
 - c) Distortion of energy use between basic fuels.
 - d) Declining gas exploration by producers.
 - e) Declining natural gas reserves and supply.
 - f) Increase in gas sales to "intrastate" markets.
 - g) Inevitable delays in producer application approval.
 - h) Unreasonable regulatory expense to producers.

5. Response of FPC to regulatory failure:
 - a) Orders for end use control of natural gas.
 - b) Efforts to extend authority to intrastate gas sales:
 - Commingling - CIG Colorado case
 - Legislative - Pending bills in Congress
 - c) Small producer - large producer concept.

6. Conclusions and recommendations:
 - a) Regulation by price produces scarcity.
 - b) Regulation distorts energy use between fuels.
 - c) Natural gas should be de-regulated.

PENDING FEDERAL LEGISLATION

SB 692 is the Democrat Gas Bill by Magnuson, Hollings, Stevenson and Cannon. Enactment of this Bill as now written and passed by a 10 to 8 vote by the Senate Commerce Committee, would be a devastating blow to the immediate and long-range supply of natural gas available statewide to Kansas. No village, town, district, province or area within the state would escape an immediate reduction of available supplies of gas.

This is brought about by a number of provisions within the Bill, one of which would place all intrastate gas lines under regulation of the Federal Power Commission, who, in turn would require deliveries of gas from intrastate to interstate lines for delivery to far-away places. Obviously, such action would diminish the already short gas supplies available for delivery within the borders of Kansas. That's when the real panic will begin.

There are other provisions within the Democrat Bill 692 that would have an adverse impact on the Kansas economy and create more and more uncertainty within the natural gas industry, so that in total it is a bad bill not only as it effects Kansas, but for the entire nation.

Fortunately for Kansas our Senior U. S. Senator, Jim Pearson, has a Substitute gas Bill ready for consideration on the Senate

Floor which will be debated and voted on by the Senate prior to the consideration of the Democrat's Bill. Pearson's Bill does not contain any provision for Federal take-over of intra-state gas, nor does it contain other provisions which would inhibit a vigorous exploration and development campaign for new gas reserves in our state. Pearson told me this week he believes his Substitute Bill has a 50-50 chance of being passed by the Senate, and, if passed, the House has agreed to consider it promptly. My educated guess is there will be a new gas Bill before year-end. I recommend this Interim Study Committee continue their investigations and studies of the gas supplies, present and future, but to await passage of Federal legislation prior to making final recommendations to the Legislature and Governor Bennett.

I could speak for hours as to the uncertainties involved with exploration, development and day-by-day production of natural gas.

Examples - FPC set area rates of 20¢ for Kansas - Then allowed arms length transactions with interstate pipe lines by small producers provided prices had a reasonable ratio to prices offered by intra-state purchasers in the area. Then a Consumer Group took this Small Producers Exemption to Appeals Court who ruled against FPC Order - FPC appealed to U.S. Supreme Court. After 18 months Supreme Court said FPC had authority but did not have proper hearings and they must issue new Order. Another 12 months has passed with no positive action by FPC - Any funds we collect above 22 cents

for old gas and 51¢ for new gas continues to be subject to rebate. We understand FPC is now considering a ruling which would allow Small Producers to sell gas at prices up to 50% more than the 51¢ allowed large producers, for a maximum of 76½¢. Many new gas properties are not economically feasible to develop at such prices, so future drilling of these properties will lag until a more favorable market is available from interstate lines or there is a greater expanse of intrastate lines to accomodate a broader area of service to newly discovered gas fields in Southwestern Kansas.

Certainly, the myriad of uncertainties confronting the natural gas explorationists are inhibiting a truly aggressive search for additional Kansas gas reserves.

(Robert L. Williams)
(Owner, Imperial Oil Co.)
(720 Fourth Financial Center)
(Wichita, Kansas 67202)

OPPOSITION TO REGULATION OF KANSAS INTRASTATE GAS

INTRODUCTION

My name is Roger McCoy. I am a Petroleum Geologist and the managing partner of McCoy Petroleum Company. I have been actively engaged in the search for oil and gas in Kansas for the past 16 years as a company geologist, consulting geologist and independent oil and gas producer. I will speak in opposition to the regulation of Kansas intrastate gas and as to how it would affect the search for new gas reserves in Kansas and the sale within the state of any new gas reserves found.

BACKGROUND

So that you may know the perspective from which I am speaking, I will give you a background of our operations.

McCoy Petroleum Company is a young, small, independent company formed in 1970. We explore for, operate and produce gas and oil wells. Our primary exploration effort has been the search for gas in South Central Kansas. We drilled our first well in 1970. We have grown until at the present time we operate 25 gas wells and 2 oil wells, all in Kingman and Harper Counties. In addition, we have instigated the drilling of, and have an interest in, an additional 20 gas wells, operated by others, in Barber, Harper and Kingman Counties. Gas from 44 of these 45 gas wells is being consumed within the State of Kansas. The McCoy Petroleum Company operated properties are currently selling 125 to 150 million cubic feet of gas per month, all being consumed within the State of Kansas. The wells operated by others sell an additional 140 to 160 million cubic feet of gas per month. All of this

gas was developed as the result of a free market intrastate system that allowed economical development of an area.

THE EFFECT OF REGULATION ON THE DEVELOPMENT OF GAS RESERVES IN AN AREA

Barber County Example

Several large gas fields were discovered and developed in Barber County during the 1950's and early 1960's. Cities Service Gas Company, a regulated interstate gas purchaser, built an extensive pipeline gathering system across the county. A large part of the gas developed during this period is purchased by Cities Service. During the 1970's the cost of exploring for and completing a gas well has increased drastically while the controlled price that Cities Service, an interstate purchaser under FPC regulations, can offer is too low to justify further exploration or development in the area of the interstate pipeline. This has virtually brought drilling for gas in the area of Cities Service lines to a stop.

An exception is a gas field south of Medicine Lodge under development by Okmar Oil Company. Since intrastate purchasers were not regulated, Okmar made a satisfactory contract with an intrastate purchaser. A sizable reserve of gas is now being sold for consumption within the State of Kansas. Had the intrastate purchaser been under regulations, as was the interstate purchasers, the gas would have probably been sold to the existing interstate market. The gas would have been lost to Kansas and the field would probably not have been fully developed, as the return under the regulated contracts would not justify it.

The laying of the new intrastate line into the area, with the favorable contract terms they are offering, has resulted in new exploration near the

line, resulting in several new gas fields being recently discovered.

Harper County Example

During the 1970's some of the intrastate pipelines began to realize that new additions to their reserves were not keeping pace with the depletion of their old reserves. In an effort to stimulate exploration they began to offer more attractive contracts to the producers.

During this period of time, due to the more favorable market offered by the intrastate pipelines, McCoy Petroleum Company sought to make an aggressive search for gas in the South Central Kansas area. Portions of Harper County offered an area in which numerous old holes outside the established producing area had tested shows of gas. The old holes were plugged because, although Cities Service pipeline went through the middle of the area, at the regulated contract conditions Cities Service was allowed to offer at the time the wells were drilled, production would have been non-commercial or marginal. The attractive contracts being offered by some of the intrastate purchasers prompted us to purchase approximately 30,000 acres of leases in the area. We drilled two discovery gas wells and one development gas well on the acreage and then sought a market for the gas. Cities Service at this time was able to offer a "Small Producer" price comparable to the intrastate offer, however, due to FPC regulations, the excess over the regulated price was subject to refund. One of our participants, a major gas producer, could not receive a price higher than the controlled area rate at the time, if the gas were to be sold into the regulated interstate market. We were able to make a satisfactory contract with an intrastate purchaser and they laid lines into the area. To date this has resulted in

~~22 new gas wells being completed and selling gas being consumed in Kansas.~~

The area is still under development.

Had the intrastate market been regulated, as was the interstate market, the wells probably would not have been drilled. If they had been drilled, the gas would probably have been sold into the existing interstate line in the area and the gas would have been lost to Kansas.

Another example of the present favorable position of the unregulated intrastate market is illustrated by a well we drilled north of Anthony, Kansas. This gas well was within a few hundred feet of a regulated interstate pipeline. No intrastate pipeline was in the immediate area. Although the interstate pipeline at this time was offering a price comparable to the intrastate market, the "red tape" of dealing with the regulated purchaser made us reluctant to sell to them. We were able to make a deal with an intrastate purchaser who purchased the gas at the well head from us, transported it 1½ miles to the City of Anthony's distribution system and sold it to the city. Residents of Kansas thus received a supply of gas that would have otherwise gone into the interstate system.

GENERAL COMMENTS

At the present time, due to FPC regulations in areas of interstate pipelines, areas in which there is an unregulated intrastate market is the only place most producers can afford to search for gas. If Kansas regulated the intrastate market, it would force many of the producers out of the state to explore for gas in other states that offer a free intrastate market.

The undeveloped areas of Kansas can only be developed when the gas contracts will allow for sufficient return to justify the risk.

A large amount of recoverable gas is being lost across the state as old wells are being plugged because of unrealistically low prices on the old contracts due to wells reaching their economic limit while there are considerable reserves left.. ie: A well selling 1,000,000 CFG per month at 19¢/MCF is losing money to the producer and is ready for abandonment, yet this 1,000,000 CFGPD will heat approximately 30 homes.

We are spending an ever increasing amount of "non-productive" time filling out forms, preparing for hearings and complying with the whims of numerous federal regulatory bodies. Each hour spent on regulatory "red tape" is one hour less that can be spent looking for new gas. Let's not add to this "non-productive" time with state regulation.

SUMMARY

Recent history has shown how Regulation of Natural Gas can hinder the search for new gas and the production of old gas in an area.

Recent history has also shown that, given the free market in the intra-state system, new reserves will be discovered and developed for use within the state. This system is now working in this state and in other states, let's not destroy it.

STATEMENT OF JACK GURLEY, PETROLEUM ENGINEER,
of PICKRELL DRILLING COMPANY

INTRODUCTION

Mr. Chairman, members of the Committee, my name is Jack Gurley. I am a petroleum engineer for Pickrell Drilling Company. My responsibilities include the making of recommendations to my Management as to where and to whom we should sell our gas and what price we should attempt to obtain for this commodity.

COMPANY OPERATIONS

My Company operates two drilling rigs within the State of Kansas. We also operate two completion rigs, several trucks and all the necessary backup equipment to keep these units in full time operation. I estimate we will drill at least 60 wells and spend in the neighborhood of two and three quarter million dollars in the search for hydrocarbons during calendar year 1975. In recent years our search has been primarily for oil, as the gas price in Kansas has not been attractive enough to warrant large sums being spent on exploratory drilling. My purpose in pointing out the scope of our operations is to give you some idea of the capabilities we would have to search for gas under the right economic conditions.

EXAMPLE PROBLEM WITH REGULATED MARKET

I thought I would try to illustrate for the Committee just one of the problems which a producer runs into when selling into a regulated market. This problem relates to the frustrations experienced in attempting to obtain some small increase in the price sufficient to keep marginal properties operating and producing gas. Our present operations include the operating of 49 gas wells and also the selling of casinghead gas from 37 oil leases making a total of 86 units selling gas. Pickrell carefully tried to avoid selling into the regulated interstate market as

these wells came on production but, due to the lack of alternative markets, did end up with two gas wells selling gas under FPC control. Of all the various prices we received for gas from our gas wells, these two wells, until recently, received two of the three lowest prices.

From the well selling the lowest priced gas we were receiving 14¢ per MCF and producing less than 50 MCFD in early 1973. In May, 1973, Pickrell made expenditures of approximately \$11,000 to install pumping equipment and remove liquids from the well bore which were depressing gas production, fully realizing that it would probably also be necessary to install wellhead compression to get very much improvement in well capability. Pickrell had a compressor unit from another well that was available.

In June, 1973, we began correspondence with our purchaser to obtain a higher price for the gas so that we could install the compressor unit. The purchaser was quite agreeable to this but advised it would be necessary to obtain FPC approval of any rate increase. FPC rules appeared to us to be in a state of flux (as usual) at this time but they had just come out with their so called Order 481. Our initial reaction upon examining the procedure necessary to obtain a rate increase was to just forget it and let the well go down the drain. It just didn't seem worth it to go through the maze of red tape. However, after another year of marginal operations on the well and no change in the FPC controlled method of granting relief we did prepare a 481 filing and hired an attorney to make the formal filing for us during August, 1974. At this time sales from the well were very erratic depending upon whether or not we had our pump in good repair. What would happen is that the pump would stick from scale or become worn naturally and we would leave the well down for several weeks because the return from operating the well was not sufficient to even cause us to change the pump promptly, a relatively minor expenditure.

In our filing we asked for an increase in price from 14¢ per MCF to 42¢ per MCF to give us a return for installing pumping equipment (approx. \$11,000) and to install wellhead compression (approx. \$18,000). The FPC, in all its wisdom came back with the information that they could only justify an increase to 34½¢ MCF. We obviously could not afford to go through a rate hearing in Washington on this small well and so had no choice but to accept. We received our last communique from the FPC on the matter in January, 1975, and the higher price became effective to us November 27, 1974.

Pickrell was only able to file on behalf of the people they operate for and two other part interest holders who sell gas in the FPC regulated market were required to file on their own. One of the companies which own a 1/8th interest made their filing and began receiving the higher price sometime later. A second company owning a 1/2 interest did not file until recently and has continued to receive the 14¢ price. An \$18,000 expenditure to install compression facilities would obviously be a losing proposition for them so our compressor has just sat idly by for these many months.

The amount of additional reserves to be recovered by proper operations of the well are not large. I estimated 268 MMCF in our FPC filing. The FPC merely said in excess of 200 MMCF. While this isn't much reserves the 200 MMCF would furnish heat to 1,000 residences for more than one year.

COMPARISON WITH UNREGULATED MARKET

Please note that two years have now passed since we first began our correspondence with the purchaser for a higher price. One half of the interest holders currently receive the higher price. During that same time span for wells selling into the unregulated intrastate market, we have:

- (a) Negotiated a price redetermination on 6 gas wells with one company.
- (b) Negotiated a price redetermination on 2 gas wells with another company.
- (c) Negotiated a price redetermination on 10 leases selling casing-head gas to the Company in (a) above.
- (d) Received a voluntary price increase on 6 gas wells selling gas to a third company.

• I think the contrast between operating in the unregulated market and trying to operate in the regulated market is clear.

Attachment XII

STATEMENT OF R. BYRON THOMAS
PICKRELL DRILLING COMPANY

RE: Testimony Relating to 1975 Interim
Committee Proposal #43, Natural Gas
June 13, 1975

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

My name is Byron Thomas and I am employed by Pickrell Drilling Company as their Land Manager. A large portion of my responsibilities include the procurement, acquisition and satisfaction of title on oil and gas leasehold estates.

Pickrell Drilling Company is engaged in the oil and gas producing industry having its inception in early 1954. A good portion of Pickrell Drilling Company's early production was found in the oil and gas producing reservoirs now commonly referred to as Spivey-Grabs Oil and Gas Area. They were successful producers in the Glick Gas Field in Kiowa and Comanche Counties and the Sharon Gas Area of Barber County. A good portion of the early exploration activity of Pickrell Drilling Company was directed towards gas exploration but with the advent of the Federal Power Commission regulations, their gas exploration had been reduced to a minimal activity, as their efforts were directed towards oil exploration in the most part of 60's and early 70's.

In 1972 it was apparent to the owners of Pickrell Drilling Company that gas prices might, after some reasonable length of time, possibly reach the true value due to the market demand evidenced by not only the State of Kansas, which primarily has been their operating and producing area, but also Nationally. Due to what appeared to be a more favorable climate of future gas price, Pickrell Drilling Company increased their gas exploration from a modest 5-10% of their total efforts to approximately 40%.

I have observed by the activity of other independent and small major producers through their acquisition of oil and gas leases in potentially gas productive areas, that they, too, believe the exploration for gas in a more favorable climate of a potentially realistic price for the product would be conducive for a more reasonable return on their investment.

In the exploration of gas reserves, producers have a greater capital leasehold cost due to the nature of the reserves in place. A producer-operator would acquire oil and gas leases on approximately 5 to 6 times more acreage on a gas prospective area compared to an oil prospective area. As an illustration in Mr. McCoy's comments, he evidenced to the Committee that he had assembled approximately 30,000 acres of oil and gas leases in Harper County, Kansas in a potential gas productive area. In a potential oil productive area, an operator-producer would secure oil and gas leases on approximately 4,000 to 5,000 acres for a comparable return of drilling, testing, and equipping expenditures.

The gas producers and explorationists are further encumbered with agricultural technology in a good portion of the gas potential areas by the advent of irrigation, flood and sprinkling systems. In the 1930's, 40's and 50's sprinkling systems were sparse and it presented no problem to the farm operator on the oil and gas properties. However, in the 60's and 70's, and it is apparent in the future as long as our water table holds out, there will be an increased installation of sprinkler systems. Any obstruction that a producer might place in the circular space of a sprinkling system would be an inconvenience not only to the farm operator but in the operations of the oil and gas

properties. The producers and the agricultural operators are attempting to keep this problem at a minimum by agreeing to conditions restricting the oil and gas producers' operations within the circular area of a system.

At first observation of the problem, related to gas production, does not appear monumental; however, in a good portion of the gas productive areas and in the later part of the producing life of a gas property, the producer must install a pumping unit to pump the water off of the reservoir so that the gas can continue to be produced. Unfortunately, this expenditure occurs when gas wells are at their marginal conditions and under the present industry practices would prove near uneconomical if a pumping unit has to be lowered or other equipment installed for the clearance of the sprinkling system. This problem is brought to your attention, to evidence that in Kansas as well as other agricultural areas where gas reserves might be found, it leaves the operator in a precarious dilemma for gas exploration considering the possibility of legislation and regulations effecting only the producer of gas and oil properties.

One of the answers to increased gas exploration and production is cooperation by non-consenting owners of leased and unleased mineral rights to gas exploration through unitization.

Any industry, operating in a competitive, free market, where arms-length negotiation are conducted between owner,-producer,-purchaser and distributor can best be served through incentive legislation rather than restrictive.

KIOGA

KANSAS INDEPENDENT OIL & GAS ASSOCIATION

940 FOURTH FINANCIAL CENTER • WICHITA, KANSAS 67202 • (316) 263-7297

March 25, 1975

Re: Senate Bill #564

WARREN E. TOMLINSON
PRESIDENTDONALD P. SCHNACKE
EXECUTIVE VICE-PRESIDENT

VICE-PRESIDENTS

DANE BALES
ROBERT M. BEREN
MACK COLT
DALE DAVIS
RALFE REBER
C. W. SEBITS
DONALD C. SLAWSON

HONORARY VICE-PRESIDENTS

E. B. SHAWVER
C. L. SHEEDY, JR.

SECRETARY

F. W. MALLONEE

TREASURER

GRANT WEBSTER

DIRECTORS

BERCROMBIE
IKENS, JR.
TON E. ANDERSON
*DANE BALES
*BRUCE D. BENSON
*ROBERT M. BEREN
*GEORGE BRUCE
*MACK COLT
*DALE DAVIS
*CLINTON ENGSTRAND
*JOE R. EVERLY
*JOHN O. FARMER, III
*FRANK D. GAINES
*FLOYD G. GRIFFITH
*JAMES E. GUINOTTE
*FRANK HAMLIN
*V. RICHARD HOOVER
*GEORGE B. KAISER
*JOHN H. KNIGHTLEY
*BILL LAHAR
*F. W. MALLONEE
*H. A. MAYOR, SR.
*J. E. MORRIS
*J. A. MULL, JR.
*W. R. MURFIN
*FRANK E. NOVY
*JERALD W. RAINS
*R. D. RANDALL
*WM. M. RAYMOND
*RALFE REBER
*DALE M. ROBINSON
*JAMES W. ROCKHOLD
*ROBERT L. SCHMIDLAPP
*C. W. SEBITS
*F. W. SHELTON, JR.
*JAMES J. SIMMONS
*RICHARD L. SHIELDS
*DONALD C. SLAWSON
*RICHARD D. SMITH
*JAY D. SWANSON
*WARREN E. TOMLINSON
*RICHARD W. VOLK
*GRANT WEBSTER
*TOM WESSELOWSKI
*ROBERT L. WILLIAMS, SR.

IVE COMMITTEE

STATEMENT OF DONALD P. SCHNACKE, EXECUTIVE VICE PRESIDENT
OF THE KANSAS INDEPENDENT OIL & GAS ASSOCIATION.

My name is Don Schnacke. I am the Executive Vice President of the Kansas Independent Oil & Gas Association. Our Association was founded in 1938 and represents independent oil & gas producers throughout Kansas. We have members of our Association that would be directly affected by SB #564. Some are here today and would like to be heard. Some are directly involved in current negotiations in the Spivey - Grabs field located in Kingman and Harper Counties that has been identified in the news.

I welcome this opportunity to address the Senate Ways and Means Committee today. Most of our presentations are made before the Senate Energy Committee. It's not often we have an opportunity to appear before you gentlemen.

It is interesting to note the contrast between the two Committees. Almost simultaneously, while SB #564 was being introduced by your Committee, SCR #23 was introduced by the Senate Energy Committee requesting that the Congress enact legislation to phase out the regulation of the price of new natural gas and urge the defeat of proposals to appropriate intrastate gas reserves.

The Senate Energy Committee should be commended for its proposal and SCR #23 should be passed. Actually, the Congress is where the issue is being currently fought. The Senate Commerce Committee with our own Senator Jim Pearson taking a very active leadership role, is attempting presently to bring about a relaxation of federal controls on natural gas, in order to stimulate new exploration and production throughout our nation. Our association has an active Committee on Natural Gas that is working very closely with Senator Pearson and we feel that meaningful legislation will be passed this year.

I mention this today to set the stage for the reasons we appear here to oppose SB #564. We consider this bad legislation primarily because it would establish state control and regulations for the first time by extending Corporation Commission interference with private contract rights for both existing and future gas contracts. As is, and has been, and recognized nationally, that controls and price fixing by the Federal Power Commission, SB #564 would similarly damage the future Kansas gas exploration effort by controlling prices and markets for natural gas.

SB #564 was introduced March 17, and hearings were scheduled for today. This did give us but a very short time to prepare for this hearing. I am sure if we could have had more time to prepare, we could present the Committee more facts and figures and testimony that would persuade you that SB #564 is a bad bill and not needed.

For instance, a Key witness with extensive background and information on this subject would be Dr. Bill Hambleton, Director of the Kansas Geological Survey. He appeared before a joint session of the Senate and House Committee on Conservation and Natural Resources during the 1973 Session and called the federal oil and gas policies "asinine" and said federal policies had depressed the price of natural gas to the point that exploration has halted. (See Exhibit No. 1 of March 14, 1973). We agree with this opinion and I should think his opinion would extend to SB #564.

The facts are that in Kansas during 1973 there was a decline in natural gas reserves according to all estimates, even though there was a modest increase of new production and expansion of reserves. Beginning at the first of 1974 Kansas had 11.7 trillion cu.ft. reserves down from 11.9 trillion cu.ft. a year earlier. (See Exhibit No. 2 of April 6, 1974). This does not reflect out of state supply available to Kansas markets.

The current excitement stimulated by interested parties advising the Governor of a potential problem arising in Kansas allegedly affecting The Kansas Power & Light Company, reminds us of a similar alert that went out in December 1971 pertaining to Cities Service. (See Exhibit No. 3 of December 21, 1971). During that alert, as was done recently by others, very elaborately, the threat of curtailment to residential customers in Kansas was used to emphasize the then apparent severity of the problem. I would think that your Committee might want to look into those circumstances and what has been done to alleviate the threat of residential curtailment that seemed to be a problem in 1971.

Similarly, this is not the first time a Governor of Kansas has shown interest in this problem. Governor Robert Docking in 1973 asked 20 natural gas supply companies in Kansas to report to him on the subject of evaluation of supply and demand in the future to be presented to the Governors Advisory Council on Energy and Natural Resources. (See Exhibit No. 4 of August 6, 1973).

I perhaps need not remind this Committee that during the 1974 Legislative Session the Legislature granted authority to cities in Kansas to get into the natural gas business. This was started as a local bill for the City of Wichita and was extended to all cities. A lot has been said that newly acquired gas would go for industrial use in Wichita. I think in fairness to the City of Wichita, it is important to point up there is a serious shortage of natural gas there. In January 1973 twenty-five public schools were reported closed because of a shortage of natural gas. (See Exhibit No. 5 of June 10, 1973). We can fully sympathize with the desire of the City of Wichita to seek new natural gas supplies for its current and future needs.

So the question boils down to what is the solution to this problem and what is being done to solve it.

First of all, we think it improper tactics to threaten the personal lives of the residential users of natural gas that they may not have gas to heat their homes if certain contracts are not properly secured and negotiated.

Nor do we believe that any one of the twenty distributors of natural gas operating in Kansas should use the halls of the Kansas Legislature to solve their private contractual, legal or political concerns at the expense of the tranquility of the consuming public.

Since the Kansas Power and Light Company has been projected into the spotlight and into the news as a result of the introduction of SB #564, it's only fair, we look at that company briefly to see what posture they have built in the eyes of the public and of their own stockholders. An Executive of that company has stated recently in headlines in The Topeka Daily Capital, that 300, 000 KPL residential customers may be affected if they lose out in the bidding for natural gas in the Spivey-Grabs field. And yet, it was stated that same day in The Wichita Eagle that only about 15% of the total natural gas distributed by the company went to residential use.

I'm not here to argue numbers or percentages. One could logically raise questions of peak load capacity to supply customers. KPL has done a remarkably good job in contracting from the Mesa Petroleum Company of Amarillo, Texas, a long term supply of natural gas, which includes peak day volumes to be increased and with new reserves to be made available beginning in 1977. (See Exhibit No. 6 December 31, 1973). Very important is the report that the natural gas from the Mesa Company, to be supplied starting in 1977, is to originate outside of Kansas. (See Exhibit No. 7 of November 2, 1973). KPL has not hesitated in telling the public of assurances of a firm long term supply of natural gas (See Exhibit No. 8 of March 7, 1971), nor of its stockholders (See Exhibit No. 9 of May 1, 1973). As a matter of fact, I personally think KPL is a good personal investment and own stock in the Company. The recently released 1974 Annual Report to the Stockholders states in part relating to the natural gas outlook "... we believe reserves available to the company are adequate to meet firm customer requirements for a number of years".

We believe private enterprise has performed exceptionally well in Kansas during this period when sharp competition exists. I've included in my presentation a report of what has taken place this past year. (See Exhibit No. 10 of July 31, 1974).

We believe private enterprise has fulfilled the public obligation and duty by contracting and obligating itself to huge capital investment to assure the consuming public and their customers that they will be served.

As we gradually shift away from the use of fossil fuels and develop other sources of energy in America, we feel certain that the ingenuity of American private enterprise here in Kansas will continue to fulfill this mission.

SB #564 has the effect of requiring KCC approval to:

- (1) Terminate an existing gas sale to a Kansas utility regardless of contract terms;
- (2) Diminish the volume or heating content of gas being sold to a Kansas utility regardless of contract terms;
- (3) Set the gas price when extending contracts, if the parties are unable to agree.

In the absence of a history in Kansas of any of this happening, we believe SB #564 to be bad legislation. We think it abridges private contract rights. We think it raises a serious constitutional question, which I understand others may speak to.

We think that SB #564 addresses itself to anticipated and speculative problems that may or may not arise as a result of current negotiations.

For all these reasons, we ask that you vote to kill SB #564. As an alternative we concur with Governor Bennett, who has indicated this subject is important and should be studied by an Interim Committee this Summer. Such a study would enlighten us all on what suppliers are doing to alleviate this problem. It would give us an opportunity to explore what the Federal Energy Administration is doing about end use allocation and encouraging priorities and the use of alternative fuels by power plants and other industries. We would cooperate fully in working with you in studying all aspects of this important matter.

Thank you.

Donald P. Schnacke.

March 14 1973

3/14/73

Federal Gas, Oil Policies Called Asinine

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The director of the Kansas Geological Survey Tuesday called federal oil and gas policies "asinine."

Dr. William W. Hambleton, testifying before a joint meeting of Kansas Senate and House Conservation and Natural Resources Committees, said federal policies had depressed the price of natural gas to the point that exploration has halted.

He said the low price for natural gas had in turn depressed the price of oil and coal.

"All this has been counter-productive," Hambleton said.

Hambleton indicated importation of foreign oil might have much the same effect.

Heavy Oil

The hearing was concerned primarily with deposits of heavy oil found in southeast Kansas.

Hambleton and scientists from the University of Kansas told the committees that an estimated 350 million barrels of heavy oil are present in a 13-county area of southeast Kansas — an area that has produced 210 million barrels of lighter oil.

Dr. William J. Ebanks Jr., also of the Kansas Geological Survey, said that up to Jan. 1, 1966, 30 million barrels of heavy oil had been produced.

Dr. Floyd W. Preston, chemical and petroleum engineering professor, said energy, particularly oil, is going to be more

expensive. He said oil fields in southeast Kansas are nearing exhaustion of lighter oil.

Not Economically Feasible

He said if the price of oil today were \$10 per barrel, there would be a stampede to recover the heavy oil.

But Preston and other spokesmen said that at today's price of oil, it is not economically feasible to produce the heavy oil.

Dr. Don W. Green, chairman of the Chemical and Petroleum Engineering Dept., said the deposits don't significantly alter the national energy picture, but do furnish a local energy alternative.

Green said major oil companies have experimented with several different processes for recovering the heavy oil, and while these processes were technically successful, they were not economically successful.

Turnabout Seen

But he said the price of oil is going to go up, and these processes will receive attention.

He said production might become economical if the price of oil reaches \$4.50 per barrel, but not at its present price of about \$3.50 per barrel.

"There is a potential there and we should be looking at it," said Green.

Because of its nature, the heavy oil cannot be produced by conventional methods.

Methods include forcing hot water or steam into the heavy oil to help free it. Injections of gas and detergent have been used, and a burning process also has been used with some success, the scientists said.

9 APR 1974

Gas Reserves

Drop in 1973

WICHITA (AP) — One of the most successful gas development periods in years didn't prevent a decline in natural gas reserves in Kansas by 216 billion cubic feet in 1973, according to estimates made by the American Gas Assn. (AGA) published in the Oil & Gas Journal.

Kansas had natural gas reserves of 11.7 trillion cubic feet at the beginning of 1974 — down from 11.9 trillion a year earlier, AGA estimated.

Total United States reserves were estimated at 249.9 trillion a decrease of 16.1 trillion cubic feet during 1973.

Extensions of existing Kansas fields and revised estimates of the fields gained the state an increase of 635 billion cubic feet, mostly from development drilling in the Hugoton-Panama area in southwestern Kansas.

The increase, however, was more than cancelled out by the production and sale of Kansas gas, estimated at 899.4 billion cubic feet by AGA.

Industry sources set the actual 1973 production and sale at 902.2 billion cubic feet, adding another 2.8 billion to the deficit.

At present rates of depletion, Kansas gas would last 12.9 years without further additions to reserves. The supply would last 54 years at current rates of expansion, but industry sources say the expansion rate probably will not continue at present levels.

Nationally, 2.7 trillion cubic feet were added to reserves through extensions and revisions and another 4.1 trillion through discoveries last year. As with Kansas, however, the gain was more than wiped out by the production and sale of 22.6 trillion cubic feet.

At current production rates, the United States has an 11-year

supply of natural gas on hand, but the supply could be stretched to 15.5 years if 1973 rates of discover and field extension continued.

Neighboring states, with the exception of Colorado which increased reserves 213 billion cubic feet to 1.8 trillion, showed declines similar to that of Kansas in gas reserves last year.

Arkansas was down 186 billion cubic feet at 2.2 trillion, Nebraska fell 1.4 billion to 48.8 billion, and Oklahoma dropped 393 billion to 14 trillion.

The nation's leading gas state, Texas, dropped 10.1 trillion cubic feet during 1973 to 84.9 trillion in reserves.

4/6/74

Residential Gas Cutoffs Possible

By ROGER MYERS
Stachouse Writer

The chairman of the Kansas Corporation Commission said Monday there is a chance that residential customers in Kansas whose natural gas comes from Cities Service sources may suffer curtailments in five to seven years.

Dale Saffels said officials of Cities Service, largest supplier of natural gas to customers in

Kansas, have disclosed there are insufficient supplies and reserves of natural gas to add any new major industrial customers in areas served by the big petroleum firm.

Saffels said company officials made the decision at a briefing for state utility regulation authorities in Oklahoma City recently. Saffels and Jules Doty, another member of the Kansas Corporation Commission, were invited to attend the briefing.

Applications Rejected

The Corporation Commission chairman said Federal Power Commission tariffs now allow suppliers such as Cities Service to turn down applications for service from large industrial users.

He said Cities Service has made the decision to reject such applications from big industrial users in areas it serves due to dwindling supplies and reserves.

"They told us they feel that unless there is some turn of events in five to seven years, there may have to be some curtailment of service to residential customers during peak periods," the KCC chairman said.

Saffels said the curtailment to homeowners might be for only periods of two days per year, and those periods would not be consecutive full days. The curtailment might only be for periods of one hour per day for a period of time.

Greeney Solution possible

"The thing that could help correct this," Saffels said he and Doty were told by Cities Service officials, "is the possibility that scientists and engineers will be able to more fully develop the process of making synthetic gas from naphtha.

"It can be done, but it's an expensive process and takes expensive plants to do it."

Saffels said Cities Service also told about research under way into the possibility and feasibility of converting coal into natural gas.

He said Cities Service officials told the utilities commissioners at the Oklahoma City briefing there appears little prospect of bringing much natural gas into the continental United States from newly discovered oil deposits on the North Slope of Alaska.

Cost Boost Ahead

There are great physical hurdles to overcome in construction of a pipeline through Canada into the United States, and if the oil from Alaska is brought to the United States in tankers, the need for it is so great on the two coasts that not much of the Alaskan oil is likely to be available for use in the Middle West and other interior sections of the country.

"In any event," the Corporation Commission chairman said, "the cost of gas is going to increase substantially — especially if it comes from synthetic sources."

The natural gas for 391,000 residential and 40,000 industrial customers in Kansas comes from Cities Service sources.

It serves those customers through 37 municipal gas systems and 51 distributing companies, some of the largest of whom are The Gas Service Co., Kansas Power & Light Co., Union Gas Systems, Inc., Peoples Natural Gas Division of Northern Natural Gas Co and Greeley Gas Co.

Docking Asks Check on Gas

8/6/73

Gov. Robert Docking Monday asked 20 companies which supply natural gas in Kansas to report to him evaluations of gas supplies and demands in the future.

The governor's office said the information is being requested "to allow the state to assess what problems may develop in the future if the winter is severe."

In his wire to the 20 suppliers, Docking said:

"Curtailments in the use of natural gas this early in the year is unprecedented and causes great concern on our part when this situation is projected into the coming winter.

"Our Kansas manufacturing firms are also concerned since stand-by fuels will be depleted well in advance of their intended use. The same problems face our schools, institutions and local governments.

"In order to assess immediately the problems which might mount in the event of severe winter, I would like to have your assessment of your projected ability to satisfy demands for not only natural gas, but the common stand-by fuels such as fuel oil and propane if you are involved in these."

Docking said his advisory council on energy and natural resources will meet Aug. 24.

Wichita Shuts Some Schools In Gas Pinch

WICHITA (AP) — Twenty-five public schools in Wichita will be closed Wednesday because of a natural gas shortage.

Natural gas supplies to aircraft and other industrial plants have been cut

The school closings were announced late Tuesday afternoon at a news conference. Reason cited was that the Arkansas and Louisiana Gas Co., supplier, was cutting back on gas supplied to the school system.

Officials of the company said severe cold had caused the heaviest gas usage in the company's history.

Other Units Affected

Besides the 25 schools, there will be five other school system buildings closed Wednesday.

Dr. Don L. Miller, president of the Wichita Board of Education, said in a prepared statement that the schools being closed for the one day, at this point, do not have standby fuel oil burners. He said schools being serviced by the Gas Service Co. or which have standby burners will not be interrupted.

He said the decision of the ARKLA firm to reduce gas service means the buildings cannot be used for classes. Students should not report for classes in the schools to be closed, Miller said.

He said the schools will be closed all day Wednesday. He said ARKLA will contact the administration late Wednesday afternoon to "let us know what will happen Thursday.

Last week, a staff official of the public school system said only about 50 per cent of the Wichita schools can be heated by a backup oil fuel system.

The ARKLA official said natural gas supplies to some schools in services will be cut Wednesday.

Plants Cooled Down

Spokesmen for three of the aircraft plants—Boeing, Beech and Gates Learjet—said their

of the Wichita Board of Education, said in a prepared statement that the schools being closed for the one day, at this point, do not have standby fuel oil burners. He said schools being serviced by the Gas Service Co. or which have standby burners will not be interrupted.

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Plants Cooled Down

Spokesmen for three of the aircraft plants—Doeing, Beech and Gates Learjet—said their firms have cut back fuel use and the Learjet spokesman said effective Wednesday a 60 degree temperature will be maintained in that plant—some 10 degrees below normal.

Supply OK'd For KPL

Approval Friday by the Kansas Corporation Commission of a natural gas rate adjustment request of the Kansas Power and Light Co. clears the way for KPL to enter into a supplemental gas supply agreement with Mesa Petroleum Co., Amarillo, Tex., the company said.

Mesa is the principal supplier of gas to KPL's main system, serving natural gas customers in southwest and central Kansas and extending eastward to the Manhattan area. The Company's main natural gas system serves about 93,000 customers in 37 counties. It does not include Topeka, which is supplied by Cities Service Gas Co. through Gas Service Co.

The supplementary agreement with Mesa, by which additional gas reserves will be dedicated to KPL, provides for a total of 33 billion additional cubic feet of gas to be made available from Mesa's Hugoton Field reserves over the years 1973 through 1976. Peak day volumes available to KPL also will be increased, up to 242 million cubic feet per day, and new reserves are to be made available beginning in 1977.

The rate adjustment approved by the KCC provides for an increase of 5.34 cents per thousand cubic feet. It will be applied uniformly to all rate schedules and all classes of customers, except customers in those communities where KPL purchases gas at wholesale from other pipeline companies.

Mesa also has agreed to develop for KPL 75 billion cubic feet of gas to be delivered over a six-year period beginning in 1977. The initial price for this gas will be 40 cents per thousand cubic feet, with annual increases of one cent per MCF. These volumes probably will originate outside Kansas, and will augment KPL's supply of gas.

"This new agreement is the result of months of negotiation with Mesa, as a part of KPL's continuing efforts to obtain additional gas supply at the lowest possible cost to our customers. Balfour S. Jeffrey, KPL president, said.

These new volumes will better enable KPL to meet the requirements of its firm customers, in the face of diminishing supplies in Kansas fields and it represents a step toward keeping greater volumes of Kansas gas in Kansas for use by consumers in this state, he said.

12/31/73

KPL Asks Increase In Natural Gas Rate

The Kansas Power and Light Co. has filed an application with the Kansas Corporation Commission for an adjustment of natural gas rates for customers served from the company's main system to enable KPL to recover an increase in the cost of gas purchased from Mesa Petroleum Co., KPL's principal supplier.

KPL's main system serves customers in southwest and central Kansas, extending eastward to the Manhattan area. Topeka is supplied by Cities Services Gas Co. through Gas Service Co. distribution.

The application seeks KCC approval of an adjustment, to be effective Jan. 1, 1974, for an increase of 5.34 cents per thousand cubic feet to be applied uniformly to all rate schedules and all classes of customers, except customers in those communities where KPL purchases gas at wholesale from other pipeline companies.

"This adjustment is necessary for KPL to recover a seven-cent increase in the cost of natural gas obtained from Mesa Petroleum Co.," Balfour S. Jeffrey, KPL president said. "It also is the result of KPL's

successful efforts to obtain additional volumes of gas to meet consumer needs in Kansas."

KPL this week entered into a supplementary agreement with Mesa, by which additional gas reserves will be dedicated to KPL. The agreement provides for a total of 33 billion cubic feet of gas to be made available from Mesa's Hugoton Field reserves through 1976. Furthermore, an increase in peak day volumes of gas will be available to KPL, up to 242 million cubic feet per day.

Mesa also has agreed to develop for KPL 75 billion cubic feet of gas to be delivered over a six-year period beginning in 1977. The initial price for this gas will be 49 cents per thousand cubic feet, with annual increases of one cent per MCF. These volumes probably will originate outside Kansas, and will augment KPL's supply of gas.

In exchange for these commitments from Mesa, KPL has agreed to increase the present price paid to Mesa for gas, effective Jan. 1, in the amount of 7 cents per MCF, with an additional 2-cent increase per MCF to become effective in Jan. 1975.

"In the event the 75 billion cubic feet cannot be acquired or developed and made available to KPL, the price paid to Mesa will revert to the original contract price, with appropriate refunds to be made to KPL's customers," Jeffrey said. "If some portion of the 75 billion is made available, pro rata adjustments in gas prices and refunds will be made."

03-7-71

20-Year KPL Arrangement Assures Local Gas Supply

An ominous-sounding statement from the Federal Power Commission last week that the nation may face a real crisis in the availability of natural gas in five years, if present trends continue, has set some Topeka area people wondering what precautions are being taken to assure an adequate natural gas supply in this area.

The FPC said existing gas reserves should meet the demand for the next four or five years but the natural gas industry cannot promise to deliver more than 50 per cent of the need after 1976.

Kansas Power and Light Co., which supplies natural gas to 120 communities in Kansas, including Rossville and Silver Lake, and uses natural gas to produce electricity, has entered into an agreement for a 20-year supply.

The company in mid-1970 purchased from Mesa Petroleum Co., Amarillo, Tex., an estimated 1.27 trillion cubic feet of gas to be delivered over a 20-year period at a cost of approximately \$304 million.

The gas will come from the Kansas portion of the Hugoton field in southwest Kansas.

"This intra-state purchase satisfies our reserve requirements for regular markets for many years and enables us to

supplies by overland pipeline from Canada and Alaska, by importing LNG from both Alaskan and foreign sources and by greatly accelerated research to confirm the commercial feasibility of coal gasification . . ."

However, Lawrence added, "the most timely and expeditious solution to our gas supply problems lies with the development, to the maximum extent, of our potential domestic natural gas reserves, which are indeed considered to be substantial." He suggested three steps AGA believes essential: More public land-lease sales on a regular basis, incentive field-price levels set by the FPC and legislation which will assure producers they can receive these prices once FPC approval of their contract is obtained.

"Research is under way looking to a commercial process for producing pipeline quality gas from coal by a gasification process. A pilot plant at the Institute of Gas Technology, Chicago, is being established where a test is expected to produce daily about 1.5 million cubic feet of gas from 75 tons of coal.

By [Name] | Hendrix is Partner

develop new interim markets, Balfour S. Jeffrey, KPL president, said.

He added that in order to get the gas, the company had to guarantee it would take more gas than it needs at this time for its regular markets and that it will develop interim markets until growth in regular markets requires the supply.

The purchase from Mesa will make gas available up to 70.6 billion cubic feet yearly, or approximately 30 billion cubic feet more annually than was being purchased under previous contracts.

Cities Service Gas Co., Oklahoma City, which supplies natural gas for 270 towns in Kansas including Topeka, said its gas supply situation is about the same as that of the gas industry as a whole. The company buys natural gas from producers and transmits it to distributors (Gas Service Co.) in Topeka.

Asked about the FPC statement, the company said:

"The future outlook for Cities Service Gas Co. is about the same as for the industry generally. Discoveries of new reserves have not been sufficient to keep pace with increasing demand. The situation will not be changed until the regulatory and economic climate improves considerably."

The gas industry as a whole is concerned about "the urgency of the energy-supply situation and particularly that of gas supply."

The American Gas Assn. has urged that Congress and executive agencies move quickly to forestall critical shortages. George H. Lawrence, AGA's director of governmental relations, has said the AGA is "especially interested in supplementing domestic natural gas

to provide new jobs and new opportunities.
The Mayor has practiced the his-
mission into a workable agency
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5/1/73

KPL Expects No Supply Shortage

Shareholders of the Kansas Power and Light Co. were told today that there has been no shortage in either electricity or natural gas in the areas served by KPL, none is expected in electricity and natural gas supplies are adequate for normal use for some time to come.

"Much national publicity and concern has built up over the so-called energy crisis, and as an energy business we have to some extent been caught up in it," Balfour S. Jeffrey, KPL president, said at the 49th annual meeting of shareholders.

"We repeatedly have found it necessary to assure a nervous public that there was no shortage in our ability to serve the ever-increasing electric requirements of our area and we did not expect any shortage to develop in the foreseeable future, although raw fuel was and will continue to be a concern," he said.

Gas service last year was maintained at about normal levels, particularly on KPL's main system and on that part of the company's operations it has not been necessary to invoke embargoes on accept-

"Energy uses by the people in KPL territory continued to increase during 1972 and more people were served, boosting annual operating revenues to record amounts for both elec-

tricity and gas, with the total moving up \$7.5 million to \$115,152,000.

Customer growth continued at a high rate for both electric and gas services.

ing new customers, Jeffrey said.

"Thus far I would say the greatest impact on us from the energy crisis has been the very great increase in fuel or raw energy process. Inflation in other goods and services adds a nudge to this also. The effect is great in costs to us for all fuels used in electric generation — coal, oil and gas. It also has its effect on gas we purchase for resale," he said.

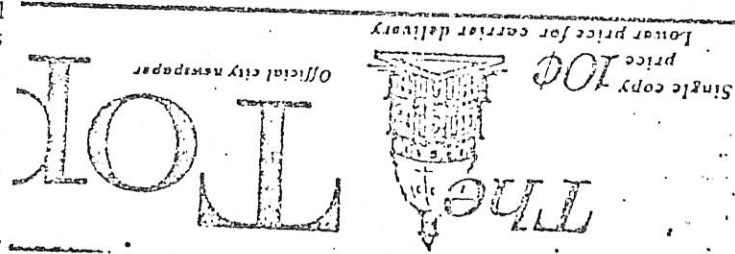
The current cost for gas purchased outside KPL's own system for fuel in its two largest electric plants has increased 23 per cent in the last year. Jeffrey said.

Jeffrey added: "We recently filed for an electric rate increase covering wholesale sales to rural electric cooperatives in an amount estimated at about \$675,000 annually based on 1972 deliveries. This group has been enjoying a very favorable rate for a number of years. Except for a pass-on of research and development costs at the first of this year, this was the first electric rate increase of any kind the company has sought in 27 years.

"However, last month a request was filed with the Kansas Corporation Commission to permit the company to apply the same fuel adjustment provisions of its large industrial and commercial rates to most other rates. This would enable the company to pass on to substantially all customers recent increases in fuel costs. It is an adjustment clause that automatically reflects variances, up and down, in fuel costs.

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The revelation was made — LOS ANGELES (AP)

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Winter Gas Shortage Ex

By GENE SMITH
Federal Affairs Writer

Kansans had better be prepared for some serious natural gas shortages this winter for all purposes except home heating. And, added a Cities Service Natural Gas Co. spokesman, "that's not too far down the road either, based on our current supplies."

The Oklahoma City firm is the largest buyer and supplier of natural gas in Kansas, purchasing and distributing the

bulk of the gas produced by the vast Hugoton field in southwest Kansas, largest single known gas field in the world. But that supply is declining and producers are selling 2 1/2 times as much gas as they're finding.

Variations in total demand and the success of efforts to find new supplies will affect the arrival time of the real crunch on natural gas, continued Harry Ford, Cities Service information officer. But he warned "This is going to continue; it's

going to get worse as time goes by until we can add some supply to our system."

Ford said Cities Service's main worry now is the effect on jobs caused by further deep curtailments in interruptible gas contracts to business and industry and recalled a Wichita city official recently estimated 60,000 jobs could be affected in that area.

Ford pointed out that not only have the largest bulk consumers of natural gas been curtail-

ed during the last two winters, but both last summer and this summer as well in an effort to stockpile supplies for the cold weather months.

Additionally, he said for the last two winters, second-level customers—also with interruptible contracts—have been curtailed. The last two years mark the first time in more than a generation that such steps have been needed.

Nevertheless, "based on current supplies now under con-

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Expected in Kansas

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tract, within a few years we would have difficulty supplying our highest priority (individual home heating) customers," Ford continued.

Second-level interruptible customers include schools, hospitals and some larger apartments, all of which are supposed to have alternate heating sources. But, Ford predicted, "some apartment residents may be surprised to learn how fragile their heating margin really is," since some owners

have elected to save money by providing no alternate system.

The curtailment sequence is set by the Federal Power Commission and may soon be revised, he continued. He said the FPC is considering a different kind of priority list, based not on volume but on end use.

To solve the problem, Ford said, Cities Service has taken several steps. First, the company — which until now has owned no gas wells of its own — has created a new exploration and

production division and is participating actively in well drilling and exploration, principally in Kansas, Oklahoma and Texas, but also at more remote locations that look particularly promising.

Secondly, the company has signed an agreement with the Amoco Production Co., operator of the Hugoton field, for a three-year exploration program in southern Wyoming, where

(Continued on Page 2, Col. 1)

Serious Gas Limits Seen

(Continued from Page 1)

test drilling indicates large reserves of natural gas.

The agreement calls for Cities Service to receive the first two trillion cubic feet of natural gas produced by that project at the price prevailing at that time.

"The catch is that in return, Amoco wants us to pay them more for the gas we're purchasing right now in the Hugoton field." Amoco is seeking FPC approval for the proposed price increase, which would boost Cities Service's averaging price at the wellhead from about 13½ cents per 1,000 CF to 30½ cents per 1,000 CF.

Thirdly, Cities Service has started a joint project with Northern Natural Gas, Omaha, to develop a coal gasification plant that would produce the equivalent of natural gas in commercial quantities, perhaps in six to eight years.

Bob Berney, Cities Service vice president for natural gas supply, meanwhile reported prices on new gas are rising rapidly in many areas.

Though the FPC has set an interstate ceiling price of 43 cents per MCF on sales of new gas, some intrastate purchases in Texas have reached \$1.40 per MCF, while in Oklahoma the price "is approaching \$1, so there's a real strain in that regard and most of the gas is staying in the state where it is produced."

In Salina, John Williamson, vice president of gas supply for Kansas Power & Light Co., said the most expensive gas in Kansas now is 60 cents per MCF at the wellhead or roughly 25 to 50 cents under intrastate pricing elsewhere in the region.

KPL buys gas from many different sources within Kansas — including both Cities Service and Northern Natural Gas Co. — and sells it to consumers in 119 towns across much of the state, transmitting the gas via KPL's own pipeline system.

Williamson said while "everybody in the gas business is competing for new reserves that are found in the state," he feels the situation is not as critical as some federal officials have predicted. He said KPL expects no economic dislocation in the state anywhere in the immediate future as a result of natural gas shortages.

Kansas Corporation Commission Chairman Dale E. Saffels, who is conducting a hearing here this week on a request for a rate hike by the Kansas-Nebraska Natural Gas Co., said Kansas uses about 60 per cent of its production within its own borders, but in turn imports gas in quantity from Oklahoma and Texas. The Kansas-Nebraska area has about a 16-year reserve, he said.

And he predicted while shortages will "have some effects . . . we're going to still keep operating."

Saffels said the 20 per cent curtailment on large industrial customers this summer will help considerably and noted "we have people working on supplies of new gas. We're not going to be out of residential gas in the next four or five years in Kansas."

He said though much of the industrialized eastern part of the nation, California, Chicago, Detroit and some other areas may have serious problems, "we're not near in the bad shape that they might be."

Governor's Natural Gas Supply Conference
April 26, 1975

"Natural Gas Exploration Activity in Kansas"

by Don Schnacke, Exec. Vice President,
Kansas Independent Oil & Gas Assn.

Governor Bennett, Senator Pearson, Commissioner Smith, Mr. Chairman and distinguished guests and participants in The Governor's Natural Gas Supply Conference.

We consider this meeting to be a very important event and worthwhile. In light of the many changing events, attitudes and political shifting taking place in the field of energy, the opportunity to communicate our interests and concerns with others is a distinct opportunity not often pursued.

We particularly are pleased with Governor Bennett in taking the initiative to sponsor this conference and bringing all of us together to discuss local, regional and national problems relating to the future supply and demand of natural gas.

We are pleased that Commissioner Smith is here. The FPC 1974 action recognizing the Kansas Ad Valorem tax paid on natural gas properties as though it were a "production, severance or similar" tax as recognized by prior FPC order was welcomed by our industry in Kansas.

The FPC Order arose out of a new gas docket limiting its order to gas commencing on or after January 1, 1973. We have asked the Kansas Corporation Commission to request an extension of that Order to all gas, and hopefully we will have that soon.

It is not fair to place the blame on the Phillips decision or the subsequent acts of the Federal Power Commission on the shortage of natural gas and the low price we have received for it in the past. Historically, this problem relates to the development of an over supply we developed when demand was very low. In those earlier days, we were, for the most part, finding gas when we were looking for oil.

Our Association, founded many years ago, has a keen interest in the subject of natural gas. We have a standing committee on Natural Gas that monitors all aspects of this subject both on a local and a national basis. Mr. Bob Williams of Imperial Oil Co. is the Chairman of our Committee and is here today. Our association represents a great percentage of the 652 known natural gas producers in Kansas.

The production of natural gas in Kansas is truly a large and complex activity. The Kansas Natural gas producers are active in 39 counties and in 326 known producing gas fields. The Kansas Corporation Commission lists 56 companies who are active in the purchase of natural gas. With the authority granted by the Kansas Legislature in the 1974 Session to permit municipalities to get into the natural gas business, the list of purchasers undoubtedly will grow.

The natural gas production industry in Kansas is very important to our state's economy. Our effort today, and policy we might develop ahead, should be directed toward developing a fair price for the producer as well as protecting the interest of the consumer. We need to act to protect this key gas industry in Kansas because our state's interest as a producing state is not the same as that of a consuming state.

The Hugoton field contains 85% of the proven natural gas reserves in Kansas and accounts for 72% of all gas produced in the state. It was discovered in 1922, and today there are nearly 4,000 wells producing in this field. It's important to mention this in order to put into perspective, the weight of this one huge field. Ninety percent of the gas produced from the Hugoton field is sold in inter-state commerce, although physically, some of this gas may not leave the state, as some inter-state lines do service local communities and some industry.

Most all of us know that Kansas is one of the largest gas producing states in the nation. We independents know there are still thousands of acres of unexplored prospective land in our state that will produce natural gas. We have active and aggressive explorers that will discover these new gas fields, provided the governmental and economic climate is reasonably proper.

Since 1954, when the Phillips decision was handed down, exploration in Kansas has been sporadic and development of new reservoirs largely confined to prolific fields, primarily because of regulatory uncertainties, refund obligations, and general confusion confronting this industry.

The argument, often heard, that explorers and producers of natural gas fields could ignore the FPC regulations and sell their product to intra-state lines is not valid, primarily because the intrastate carriers do not have the expanse of transmission lines as compared to inter-state carriers, and until recently, intra-state lines were unwilling or financially unable to extend their lines to remote gas producing areas. Kansas potential has been held back, but it will eventually produce substantial volumes of new gas, depending on action or inaction in the Congress and our State Legislature.

Our number one target has been to raise the base price of new natural gas. We certainly applaud the passage of SCR 23 by the Kansas Legislature, just last week, requesting Congress to take action to deregulate the price of new natural gas. The very speculative nature of exploring for and developing new gas reserves essentially requires a more realistic price to provide incentives for such high-risk speculation.

Kansas drillers have found more gas in our state this past year than they have since the middle 1950's. This is primarily because there are more drilling rigs in operation and the price during 1974 has been more favorable, giving an incentive to increase activity. Last years overall average price of 50¢ - 75¢ mcf compared with the earlier 12¢ - 14¢ mcf average has brought the producers to life.

A recent API - AGA report outlining progress this past year shows that Kansas has done a remarkable job in responding when proper price incentives encouraged drilling. Kansas developed 894 billion cu. ft. of gas in 1974, and this reflects a significant improvement over last year. Kansas gas reserves are estimated at 11.722 trillion cu. ft. as of January 1974 and dropped to 11.6 trillion cu.ft. as of January 1975. But, we found or extended reserves in Kansas during 1974 in the amount of 876.3 million cu. ft., which means we came within 2% of finding as much gas in 1974 as we produced. This is a vast improvement over prior years. Price incentives have stimulated the industry. The number of wells speak for itself from what happened in 1974 as compared with the year before.

Completed oil and gas wells of all types were up 29.5% over 1973. Development tests were up 22.5%. When gas prices began to improve, starting at the end of 1971, the statistics indicate that gas drilling activity tripled when comparing the periods of 1968-71, which reported an average of 116 gas wells per year as compared with 342 gas wells per year during the period of 1972-74.

There is a trend in Kansas to go to deeper wells at 5,000 - 6,000 feet, and ironically to shallower wells at 2,000 - 3,000 feet. The shallow wells are those that were drilled through at an earlier date and gas detection not noticed, or the potential reserves seemed too low to justify completion costs at the then low market price for the product. Today, we have much better technology that alerts us to potential gas reserves. There is considerable drilling activity into older leases and into formations that have not previously been explored.

One concern the producers face, and there seems to be no easy answer, is the dramatic increase of the cost of drilling new wells. This is one reason producers insist there be an open market on the price of the product because there is an open market on the cost of drilling, casing, mud, bits, labor, transportation and other direct costs for drilling and completing a well. Just one year ago a 4,500 foot gas well fully equipped would cost in the neighborhood of \$50,000. Today this same well will cost from \$90 - \$100,000; nearly twice the cost. This, along with the track record in Kansas that 8 out of every 9 wildcat wells are dryholes, develops our chief argument for justifying a free market price for natural gas at the wellhead.

Price incentives for the exploration of natural gas should be given the highest priority by the Congress. We have been working with Senator Pearson, who has been giving us 100% cooperation and a sympathetic ear, and is working hard to remove the uncertainties from federal statutes, and bureaucratic regulations and red tape. He recognizes the role of the hundreds of small producers that deliver small quantities of natural gas.

If price fixing by the government is demanded, we believe a realistic base price, plus additional incentives for small producers, would alone achieve the primary objective of supplying substantially higher volume of new gas at the earliest possible date for the consumer, at a fair price.

We think the consumer will benefit in the long range, because a price incentive will maintain a more adequate supply, as opposed to the prevalent shortages. Every MCF not produced will make the consumer more dependent upon costlier, less desirable alternative fuels at foreign controlled prices, which Congress may find difficult to control. We believe a free market price for new gas would give an average price, when comingled with gas being sold under current contracts, lower than any other energy fuel, and certainly more desirable.

We had quite a flurry of activity around the halls of the Legislature during this past Session pertaining to SB 564 -- a proposal to regulate contracts; price; the end use priority of intra-state natural gas. We opposed this proposal and will participate in the legislative hearings during the Interim Session this Summer.

Natural gas production in Kansas has generally risen during the past 19 years from 512 billion cubic feet to 894 billion cubic feet in 1974. We believe with proper incentives, we can continue to hold our own, and possibly increase our production capacity for many years to come. You must understand, out of state gas reserves will feed into and through Kansas markets and help satisfy commitments made for the future.

We maintain, any kind of price regulation and control over contracts will only serve to further hamper the development of gas-laden lands in Kansas, like federal control and price regulations has done for inter-state gas. FPC, in its own recent report, said in part, "We believe that deregulation of new natural gas at the well head is the single most effective measure that can be taken today to alleviate the nations severe supply-demand imbalance". FPC is simply stating -- take the federal regulations off of natural gas and let the "forces of a free marketplace determine the supply-demand relationships of gas and other primary energy sources in a competitive energy market".

The Federal Power Commission's report alludes to the imbalance of price as related to other various common hydrocarbon fuels when compared on a thermal equivalent basis. Natural gas priced at an average of 51¢/mcf is at the low end of the cost comparison as related to BTU output of other common fuels. We feel, until natural gas is realistically priced in relationship to other primary energy sources, our country will not solve the supply and demand problems we now face.

We feel this same lesson and historical record is applicable to the State of Kansas. We feel the State of Kansas should not place itself into a role of a mini-FPC regulating the price of intra-state natural gas at the wellhead.

We believe the Kansas Corporation Commission today has general authority to prevent economic waste of natural gas. Perhaps that authority needs to be broadened to specifically address itself to economic waste as related to setting priority of the end use of gas.

As natural gas is being recognized and adjusting itself to be a BTU equivalent to other energy fuel sources; it well could be a role of government at all levels to answer to the consuming public that a proper priority of use is being assigned to this scarce commodity which in the short years ahead, could become critically needed.

However, we caution against instigating new governmental controls and regulations. We feel if the free enterprise system is permitted to function, the current imbalance and present demand trend in natural gas production will be reversed and we will be on the road to accomplishing our state and national goal of reasonable energy self sufficiency.

* * * * *