

PUBLIC HEARING

before

SPECIAL SENATE COMMITTEE  
TO INVESTIGATE THE AVAILABILITY OF NATURAL GAS  
(Established pursuant to Senate Resolution Number 3004)

Held:  
September 9, 1977  
Assembly Chamber  
State House  
Trenton, New Jersey

MEMBERS OF COMMITTEE PRESENT:

Senator Raymond J. Zane (Chairman)  
Senator Eugene J. Bedell  
Senator James P. Vreeland  
Senator Stephen B. Wiley

ALSO:

Norman Miller, Research Associate  
Legislative Services Agency  
Aide to the Committee

\* \* \* \* \*

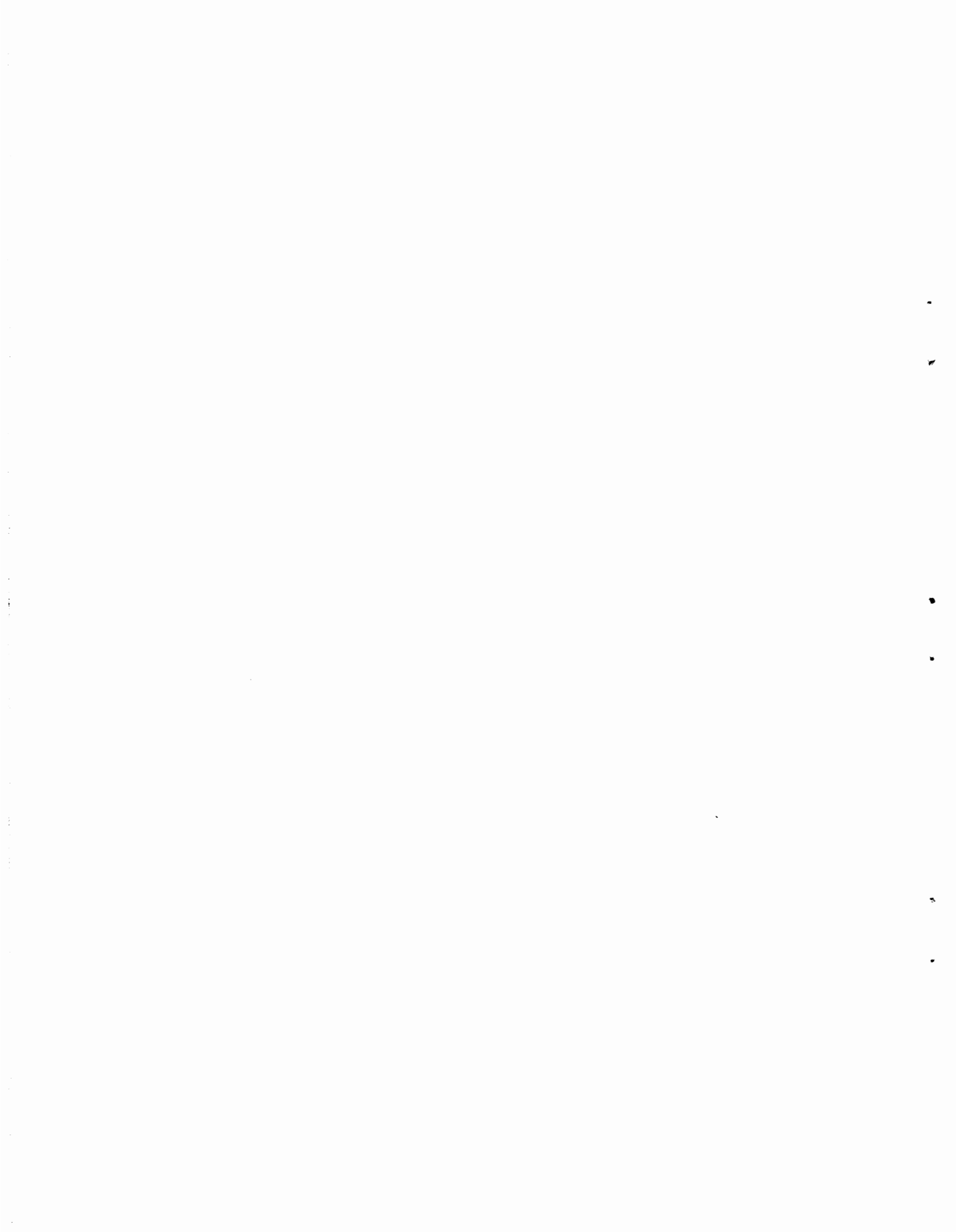
Digitized by the  
New Jersey State Library

I N D E X

	<u>Page</u>
Joel Jacobson Commissioner Department of Energy	1
John Kean President Elizabethtown Gas Company	20
William F. Ryan President and Chief Operating Officer South Jersey Gas Company	1A & 1X
Jack Richards Vice President of Operations and Engineering New Jersey Natural Gas	14A
David L. Morell Center for Environmental Studies Princeton University	2A & 6X

- - - - -

1-42 :I  
1A-25A:III



SENATOR RAYMOND J. ZANE (Chairman): This is a meeting of the Special Senate Investigating Committee to Investigate the Availability of Natural Gas in New Jersey.

The Committee previously met on August 4th, at which time we took testimony from Mr. Bowen of Transco Pipeline and also Mr. Betz of Public Service Electric and Gas Company.

Senator Vreeland, a member of the Committee, is on my left; and Mark Reifer, of Legislative Services, is on my right. Senator Wiley will be here momentarily. Senator Bedell will be here somewhere around 11:15. I understand that Senator Parker may make it later on this afternoon.

This morning, we would like to begin by calling Commissioner Jacobson. Commissioner, we have had all the witnesses previously sworn. I believe we have someone here to take your oath.

(Commissioner Joel Jacobson sworn as a witness.)

Commissioner, you are aware of the responsibility of this Committee; and, that is, to find out what the story is, as best we are able, as to the availability of natural gas to this State. The genesis of the Committee, I think, goes back to the winter of '76 and '77 when we had one regulation after another. We had one order after another, tremendous confusion, and a lot of people were very upset within the State. We had an unusually severe winter and, at the same time, we found ourselves with a shortage of natural gas. It required curtailment and, it is my understanding, an extensive loss of jobs within the State for a short period of time, and it affected the economy. We then found ourselves a couple of months after that with the utility companies within the State petitioning the Public Utility Commission to be able to take on additional customers. Something seemed inconsistent with that - and that is really why we are here.

Commissioner, do you have an opening statement that you would like to make.

J O E L J A C O B S O N: Yes, sir, I do.

Senator Zane, Senator Wiley, Senator Vreeland, and Mr. Reifer: I appreciate very much this opportunity to be here. The first thing I want to say is that I particularly appreciate the work of this Committee. As you indicated, it has been very difficult for the Public Utility Commission, earlier, and now the Department of Energy, to reach for the relevant accurate facts upon which to render a judgment; and your participation is of great help to us and we welcome it and pledge to you our full cooperation.

Just one quick aside, whereas heretofore, the Public Utility Commission was charged with the responsibility of making the decision as to authority for new gas customers, now that the Department of Energy has been created, there is language in there to lead me to believe that it is the Department of Energy that makes that decision. However, the language is somewhat nebulous and, on occasion, contradictory. To avoid any problems with regard to any legal challenge, we have decided that the Department of Energy and the Board of Public Utilities will jointly make this decision, which we hope will be an intelligent, rational one.

I would like to relate just for a moment, if I may, the plight in which we found ourselves last January 17th, which was the beginning of the crisis to which you referred earlier, Senator. On Monday morning, January 17th, at 10:00 A.M., we asked

the representatives of the four distribution companies to visit with us in Trenton to report on their natural gas supply and storage projections for the winter. This was a routine meeting and we had done it periodically to monitor these supplies. This was a meeting that had been called probably two or three weeks earlier. At that meeting on January 17th, at 10:00 A.M., we received reports from each of the four companies assuring us that there were ample, adequate supplies to weather the winter of 1976-77. That was at ten o'clock in the morning.

At two o'clock in the afternoon, the utilities received calls from their gas pipeline suppliers and we, in turn, received calls from the utilities, that because of the inordinately cold weather, their curtailments were increased an incredible amount, and it became necessary for us to respond to what was then obviously a crisis. I want to emphasize that the State had four hours' notice with regard to the advent of this crisis.

The question you raise as to how do we respond, therefore, to a request two months later for the ability to hook up new gas customers after having sustained that surprise and crisis of two months earlier, is a good question. In an attempt to resolve that, we determined that we should go to the source for the proper information upon which to render judgments, not that we don't believe what we hear from our utilities in this State, but a prudent regulator, of course, would seek to verify that from an additional source.

May I say at this moment parenthetically for the benefit of the utility representatives that are here, I suspect that there may be different interpretations to what I am about to say. I would like to emphasize my strong and enthusiastic belief that the representatives of the utilities here should be free to speak the truth as they see it, without fear of any reprisals from the Commission or the Department of Energy, even if they disagree with us or even if they criticize us. I believe that is important. There will be no reprisals. The decisions we will make will be based upon the facts as we interpret them. But I want to assure the representatives of the utilities here that they should be free to speak their mind and present the facts as they interpret them.

In any event, we have before us now this petition for new customers. The Commission decided that we must return to the source for information. We held a series of public hearings where we received information from our utilities as to their supply projections, their storage and their storage capabilities. Everyone was enthusiastic. You again will hear later today the same enthusiasm. We met with the President of the Transcontinental Gas Pipeline Company, Mr. William Bowen. We met with the President of the Texas Eastern Gas Pipeline Transmission Company, Mr. David Bufkin. And they too were optimistic, indicating the same information: supplies are higher; storage capabilities are stronger; everything is fine.

We have one more meeting planned with the new Chairman of the Federal Power Commission, Mr. Charles Curtis, assuming he has authority over the supplies of gas; and, when that is determined, we will know whether to meet with him or whether we must meet with Mr. Schlesinger direct. We plan to do this within the next week or so.

Everybody, I indicate, reports that the supply projections are good and the storage capabilities are stronger, but the third ingredient in this trilogy of decisions, no one can give me a firm answer on; and, that is, what will the weather be? Obviously nobody can give me a firm answer on that because who can predict the weather? And at each meeting with the presidents of these companies,

the pipeline companies, and at each meeting with our distribuion companies, we have asked the question: If next year's winter is as severe as last year's winter, can you guarantee us that there will be no diminution of supplies and that we will not, therefore, have to consider crises responses? And, obviously, nobody can or would give that guarantee.

There we stand as of the moment. Just to repeat and conclude this phase of my report, at the conclusion of our meeting with Mr. Curtis and/or Mr. Schlesinger, we will make a recommendation as to what to do on this particular petition. We welcome, obviously, whatever input this Committee has to offer.

Now, Senator, I would like to, if I may, indicate what I consider to be the source of the problem. What we have been doing here is responding to the symptom and we have been ignoring the cause. I don't believe as responsible legislators or bureaucrats that we should.

It is perfectly obvious that New Jersey is not a producing state. We do not produce one drop of oil, one cubic foot of gas, one pound of coal or uranium, and we don't have many waterfalls. We do have solid waste and we are talking about recycling that for fuel, but that is an item on the agenda for the future. But I emphasize that as a nonproducing state, there is little that we can do within our own boundaries to enhance our supply situation. And modest as this may be, the creation of a Department of Energy in this State will not solve the national and worldwide problems of energy supply. And anybody who believes it does is deluding himself.

You might, therefore, say: Well, who needs you? I would indicate that if this office has any credibility and/or influence - and I would hope to establish that it has both - we must perform as a shock transmitter rather than as a shock absorber, to relay to those agencies in the federal government and elsewhere our concerns and needs for the proper share of energy resources for New Jersey. I intend to do that aggressively and, if need be, abrasively. This we will do.

Number two, when the resources are brought into the State, it is our determination that the allocations will be made fairly and equitably - and this we intend to do.

But to get to the first problem, the problem of supply, if I may, in about five minutes, I would like to analyze for you what I consider the problem is and what I consider the solution to be. The major gas and oil producers, who are, after all, the conduits for our supplies, have set forth a four-point program which they believe is necessary.

Number one, they make the general argument that there is a shortage of natural gas caused by the interference of the governmental process, specifically pricing.

Number two, they contend that there is a free market in the gas and oil industry.

Number three, they contend that if the government interference were to be removed by deregulation and the free market of laws of supply and demand to apply, there would result in an increase in price and in earnings, but this would provide the incentive to dig and drill for new resources, which would then be delivered to everybody, including New Jersey.

The fourth point is that, in order to have that incentive, they must have additional earning over what they are currently enjoying.

I would like to respond, if I may, to each of those four points to indicate the problem that we have in this State is beyond the control of the State and something that must be met by our federal authorities.

Number one, is there a shortage of natural gas? I have here a statement by Mr. William T. Smith, who is an official of the American Petroleum Institute, testifying in Washington, on May 23rd, 1977; and he said: "If we spend the money and effort on exploration and development of conventional sources, we can reasonably expect to maintain U. S. oil and natural gas production at current levels for about forty years."

I have a statement here from E. F. Hutton, a Wall Street investment firm, which they send out to their investors, in which they report on prospects for natural gas; and they state: "Most accepted estimates of remaining recoverable resources in the United States agree that there are approximately 900 to 1,300 trillion cubic feet of conventional gas that could be produced. At the current consumption rate of about 20 trillion cubic feet per year, such estimated recoverable reserves would yield between 45 to 65 years of conventional gas supply."

I have a great deal more evidence to offer, but I am trying to conserve your time. I want to make point number one: There is no natural gas shortage.

Point number two, the argument is made that there is a free market in the gas and oil industry and, therefore, the removal of government controls will permit the free enterprise system to operate most efficiently and the laws of supply and demand will prevail.

In lease acquisition, in exploratory drilling, in development drilling, in crude and refined production transportation - all of these ventures are carried out by the gas and oil industry in joint ventures, not in competition but in partnership. Exxon is partners with Mobil in 62 joint ventures. Gulf is partners with Shell in 19 joint ventures. Shell is partners with Socal in 22 joint ventures. These are not free, independent, aggressive rivals. This is not competition; this is partnership.

Point number two, there is no free market in the gas and oil industry.

Point number three, if you permit higher prices, you will provide the incentives for the companies to go out and dig and drill and explore for new resources.

I have in my hand a quotation from the Federal Power Commission when in the year 1971, it increased the price of gas in the Texas fields from 16 1/2 cents to 24 cents. Let me emphasize that. They increased the price from 16 1/2 cents per thousand cubic feet to 24 cents in 1971, and they said this: "It is our judgment that the new gas prices we establish herein will result in increased drilling efforts by the producers and new gas discoveries in the Texas-Gulf Coast area."

Later, in South Louisiana, they raised the price from 13 cents to 26 cents and they said, quote, - the same year: "It is believed that the ceiling prices and other provisions contained herein will make funds available to the producing industry and create a regulatory atmosphere which should provide an incentive for a substantial increase in exploratory and development activities."

In other words, since the year of 1971, the price has gone from a little over 16 cents to \$1.42, where it currently is, and every time the Federal Power Commission raised the price, it said, this should provide the incentive for the gas exploration companies to dig and drill and explore for new resources.

I have a gag I have been using so many times, but it is so appropriate I

hope you don't mind if I use it again. The Mobil Oil Company petitioned for higher earnings so they could dig and drill and probe and explore for new resources; and they got the higher earnings and they dug and they drilled and they probed and they explored until they struck Montgomery Ward, which they promptly purchased.

Just in this morning's paper I read where Senator Jackson has stated that even if the price of natural gas should be increased an additional amount over the \$1.75 recommended in the bill - his figures are, if you raise the price to \$1.75 you would produce 18.7 trillion cubic feet in 1980; but if you permit the free market to operate and the price would go up to about \$4, you would produce 19.8 trillion cubic feet, a 5 percent increase. He makes the point that what would amount to an insurmountable burden on our consumers would produce an additional 5 percent resources.

So I make my point number three: Higher prices and higher earnings have not produced more resources.

My final point deals with the contention that prices are low and profits and earnings must be increased so that they can have this incentive to dig. The current level at a regulated price of \$1.46 was established by the Federal Power Commission in 1976. It was \$1.42, but it provided for three-month penny progressions and the price currently is \$1.46. When the Federal Power Commission authorized this increase - they tripled it previously from 52 cents to \$1.46 - they authorized the gas and oil producers to enjoy a 17 percent return on equity - a 17 percent return on common stock. The exact figure was 16.98. By the way, when the Public Utility Commission in New Jersey authorizes a rate of return for the utilities it regulates in this State, we authorize within a range of 13 to 13 1/2 percent return on equity. If we were to tell the utilities of New Jersey that they could enjoy a 17 percent return on equity, you would see the happiest bunch of men in your life. Seventeen percent is a most handsome reward.

I would like to point out to you that Fortune 500 has reported the following returns on equity for the following industries: for the Fortune 500 companies, itself, 11.6 percent, not 17; for commercial banks, 12 percent; for retailing, 11.18 percent; for utilities, 9.86 percent. In other words, the Federal Power Commission has found as reasonable a rate of return to the major gas and oil producers which is 46 percent higher than the Fortune 500 companies, 42 percent higher than commercial banks, 52 percent higher than the retailing industry; and 72 percent higher than regulated utilities. I have one word to describe the constant pressures on the regulatory authorities for higher earnings for the gas and oil producers - greed.

I would like to conclude, Senator, if I may, by indicating that apparently I find as an acceptable compromise a recommendation contained in the Carter energy program, which is to eliminate the two-tier system to provide for a regulated price both for interstate gas and intrastate gas. I think that is an imperative. As a matter of fact, most people agree with that. What I find somewhat distasteful is the fact that the recommendation is made to increase the price from \$1.46 where they are enjoying this most lucrative reward right now, to \$1.75. But I am a pragmatist and I realize that the price of a one-tier system is to permit the oil companies to increase their prices. While I find it somewhat - I would even use the word "rip-off" - it is an acceptable compromise if we can eliminate the two-tier system.

What concerns me, however, is the additional recommendation made which says that we should peg the price of domestic gas to the BTU equivalent of imported oil. When I studied Economics I and II as a freshman, I was told that the price of

a product should be related to its cost. And when you peg the price of natural gas to the BTU equivalent of imported oil, you are not pegging price to cost - you are pegging price to political blackmail, established by the OPEC nations. I find this a foolish way for our government to proceed.

I do want to indicate one other item that the Department of Energy is currently involved in. At the request of Governor Byrne, I have accepted his assignment to represent him on the Emergency Preparedness Committee of the National Governors' Conference, which has already met with the Winter Energy Emergency Program of President Carter. I am very bashful to point out that the acronym of the Winter Energy Emergency Plan stands for WEEP, which I hope we don't have to do. I would also point out that the acronym for President Carter's Moral Equivalent of War is MEOW. I would prefer to be regarded as a tiger than a pussy cat.

But, sweeping aside these acronyms, there is a vast area in which the federal government and the states can relate and interact together. We are currently at work at that.

One specific recommendation we have made includes that the federal government establish something like the DEW military system, the Distant Early Warning. It is folly to expect a state to respond intelligently when it has four hours' notice of a crisis. If we see a crisis coming down the pike, I would hope that the federal government could prepare us beforehand.

Number two, I would want accurate data on resources. I could cite for you dozens of instances where the industry and the Federal Power Commission have jointly accepted formation which has later been found to be inaccurate. It is difficult to make intelligent decisions when you don't have accurate data.

Number three, I would hope that the federal government would establish something like a Pentagon War Room for emergency decisions and/or information during the midst of a crisis so that we would know what is going on.

Finally - four or five substantive recommendations that we have made: We would like to see instituted a "savers keepers" rule, which means that when a utility in New Jersey or the citizens of New Jersey respond to an appeal for conservation and we do, in effect, save natural gas, we are not, therefore, deprived of our normal pipeline supplies. And some of our utilities have been particularly aggressive in seeking new supplies and I commend them for that.

Number two, we would urge that there be a ban on the use of natural gas for boiler fuel. Can you consider anything more ridiculous than, in the State of Texas, 98 percent of the electricity generated there is fueled by natural gas. What a folly to use a rare resource to generate another resource. We would hope there would be an accelerated ban on the use of boiler fuel.

Finally, we would urge the acceleration and expansion of strategic storage facilities so that these resources can be available. And we would hope that we could instill in the utilities - although I can understand their reluctance to do it - or at least expect the Federal Power Commission to demand that the pipelines meet their contractual obligations. If you are a customer and your resources are limited, it is sometimes hard to be as abrasive as I would like to see the utilities be. But a pipeline should be required to meet its contractual obligations. We would hope that would be forthcoming or, at least, the government should step in.

Senator, I am sorry for taking this time, but I did want to indicate to you that the major source of our problem is the fact that insufficient supplies are

coming into our State, and the reasons I have set forth, and I have made certain recommendations. Let me assure you - all of you - that we deeply appreciate your interest and we look forward to your input into the decision that we have to make. Thank you.

SENATOR ZANE: Commissioner, first of all I appreciate your testimony. I would like to start off with a few questions if I may. As to the particular charge of this Committee regarding availability of natural gas to New Jersey, how do you see that? Do you feel it is available? Where are we going?

COMM'R JACOBSON: The supply projection by all four companies and by both pipelines generally indicates increased supplies. There is one company which will have an increased curtailment, but it says that it is compensated by its larger storage facilities.

If you ask me, will there be more gas available on December 1st of this year than there was last year, I would say, yes, there probably will be.

SENATOR ZANE: Commissioner, we had Mr. Bowen before this Committee, we heard his testimony, and my recollection is it was a very optimistic view of additional gas through reserves, et cetera, and what have you. What do we do in this State to check the accuracy of those statements physically? Do we take an inventory? Do we visit their storage facilities? Do we actually examine and find out what they have? Or do we just take their word?

COMM'R JACOBSON: Senator, you put your finger on something that has been a source of great irritation to me. I would like to read to you a statement by the Federal Power Commission, Bureau of Natural Gas, in response to that. This is what the FPC says now: "We do not have information on the reserve additions acquired by the interstate gas companies or on reserves set aside by producers for their own purposes. In the absence of such data, we have assumed that all the new reserves reported by the American Gas Association are accurate." The American Gas Association is the industry association which reports on resources and the Federal Power Commission, a paper tiger if ever there were one, accepts that at face value.

Now the answer to your question is that government should, and I would think that is the proper responsibility of the federal agencies, Senator.

SENATOR ZANE: There is a decision to be made by the PUC regarding new customers and part of the basis for that decision will be on projections and information given to us. Do we go out and verify it?

COMM'R JACOBSON: Yes, I would hope that we would verify it. But I don't know that the technical expertise is here, Senator. I couldn't look at a well and tell you whether the report is accurate or not and I don't know that we have that expertise here. Sir, I do believe it is the responsibility of the federal agency, in this case, the Federal Power Commission, to provide that expertise and to render those judgments.

SENATOR ZANE: If Transco tells us that they have 32 billion cubic feet in storage, do we send anyone out to physically see that gas in storage?

COMM'R JACOBSON: No, we don't - and somebody should.

SENATOR ZANE: Therefore, we really are at their mercy as to the information.

COMM'R JACOBSON: Well, let me say this. I don't know if the word "mercy" is the right word. We are required to depend upon the reliability of the utilities. And, if I may say so, I have no reason to doubt that reliability for two reasons.

One, I think they are honorable gentlemen. Number two, if the Public Utility Commission were ever provided affirmatively with incorrect information, the opportunities for reprisal are so vast and so great and so frequent that I don't think any utility would risk it.

SENATOR ZANE: Commissioner, I introduced legislation about a year ago when we had part of the problem with natural gas and its flow. It was my understanding at that time that we did not really have the power to require one utility company to transfer its gas if one end of the State had a problem. I understand that now under the new Office of Energy and the powers related to it that you now have that power to order one of the companies to make their source available to another company. Is that correct?

COMM'R JACOBSON: That is correct. Under the emergency provisions of that statute, that power is available. I would hope it would never have to be used.

SENATOR ZANE: Therefore, Commissioner, could we almost conclude from that that source which is available to the State collectively by all of the companies with the contracts they have and the various sources is, therefore, in essence, in the event of an emergency, in a pot for everybody in this State to draw upon?

COMM'R JACOBSON: The practical impact of that emergency provision is precisely that. I must say this last winter, Senator, that we did make an appeal to one utility to provide other utilities with gas and they responded. The utilities have been most cooperative in trying to resolve this crisis. We are in the same boat together and they have been most responsive.

SENATOR ZANE: Several weeks ago, at the request of the President of South Jersey Gas, I met with him and several other executives from that company and I believe - and he is going to have an opportunity a little later on in the day to correct me if I am wrong -- I think the essence of the message - and I would appreciate a nod if it is accurate - the essence of the message was that if, in fact, they are not able to take on additional customers --- The reason they want to take on additional customers - I'll put it that way - is because they will have more gas available to them than they actually have customers and that, at the end of the year - again I think we are assuming a normal type year - at the end of the year, they would have, I guess, an excess or they wouldn't call upon all of the supply they have available. I am getting an affirmative nod that that was the essence of it. Do you have any feelings or comments on that?

COMM'R JACOBSON: This is a judgment call, Senator. That is a distinct possibility. That could happen. It is also true that because of the ban that the Public Utility Commission has put on the utilities, they have not been permitted to take on new customers and, as they lose existing customers, there is an erosion of their revenue. This is true. And the normal response to an erosion of revenue is an appeal for a rate increase, which upsets me greatly all the time. That is a possibility.

There is also a possibility, however, that we will have a cold winter and that the resources that they do have will be insufficient to meet the need. Now you have to make a judgment; it is a call. That is why we are taking this long tortuous route to get as much information as we can so when we make that call, we have the best, the latest and most relevant information available.

SENATOR ZANE: I just have one other question at this point. Something

that you said earlier troubled me, when you went through the history going back on the rates from the 16 1/2 cents per thousand cubic feet in, I think, 1971, to the present \$1.46, interstate price. If you are that convinced on that information - I know I am putting you on the spot with this, but I have just got to -- with that information, I do not understand why this State has not taken a position that we have had enough. Why haven't we then denied, to show the original source suppliers, rate increases to the utility companies? Why have we gone along with it? Doesn't that make us part and parcel of the problem that you have identified?

COMM'R JACOBSON: If the utility is forced to pay a triple price for its natural gas at the wellhead because of an action of the Federal Power Commission and, in fact, did pay that in order to get the gas, I would believe that a responsible regulator would have to indicate to the utility that it can recover those costs.

What we were doing here, of course, was treating the symptom. We were ignoring the cause. If I were a member of the Federal Power Commission, I can assure you I would have voted against Opinion 770, which would have kept the price below \$1.46 - and that's where it had to be done.

SENATOR ZANE: Commissioner, I wouldn't want to freeze the State of New Jersey. But I honestly feel that my reaction to that would be -- and I do think that there is a lot of accuracy to what you say about what has happened with prices. I really think that is what we are involved in. I think we were involved in the same problem with gasoline and oil in 1974. The shortage of that certainly is over and the price is up. But I honestly feel that the State of New Jersey, just by way of a comment, should take a position. And I'll be damned if I would go along with rate increases and I would force that issue, I am afraid. I really wish this utility company would, because I don't know of anything that I respond more to in my legislative office than rate increases to the utilities. And, if they are not the culprit, it would be unfortunate to put them on the spot. But I think something has to be done to draw national attention to the problem. I wish New Jersey would take a leadership position in it.

COMM'R JACOBSON: Well, let me pursue what would happen if we did what you just suggested. And, you know I'd love to do it. But let me tell you what is going to happen. If my figures are accurate, roughly 40 cents of a utility's revenue is derived --- 40 cents of its expenses is allocated to the cost of fuel. If that 40 cents were as a result of the increase of the Federal Power Commission and we did not permit the utility to recover it, I don't know how many utilities could stay in business if they lost 40 percent of their revenue. You would force bankruptcy. And I don't believe we serve the public interest if we compel the utilities to go bankrupt and, therefore, deprive all of our citizens of their service.

SENATOR ZANE: I also think we are going to force a lot of people of the State in that direction if we continue to allow rates to increase.

COMM'R JACOBSON: Okay, you and I agree - we analyze accurately the problem. The response is to get at the cause of it, which is the high price of the fuel. Unfortunately, Senator, the New Jersey State Legislature and the Department of Energy can do nothing but lament this, which we are doing every day in increasingly eloquent terms. But nobody is paying any attention.

SENATOR ZANE: One other question at this time anyhow: Would you explain to me just how the fuel rate adjustment works with natural gas?

COMM'R JACOBSON: It works precisely as it does with the oil for the

electricity in that there is a basic rate for the cost of the fuel and then there is a fuel adjustment clause or a purchase gas adjustment clause, which goes up dollar for dollar as the utility pays more for its fuel. It is designed to recover exclusively the cost of the fuel. There should be no accounting gimmicks providing other related expenses. Therefore, the utility theoretically is not earning any money out of that; it is merely passing through to the producer that which it collects.

Now, you have a healthy skepticism about that, as I did. One of the things that we have done in the State immediately was to establish a Division of Review Audit where we have a certified public accountant whose responsibility it is to determine whether in fact the pass-throughs are precisely what they are determined to be by the utility. We have done that.

SENATOR ZANE: Senator Wiley.

SENATOR WILEY: Thank you, Mr. Chairman and Commissioner. I have some elementary questions I suppose you would call them, Commissioner. The essence of your testimony, as I gather it, is that we as a nonproducer, high-consumer state are in a very vulnerable position and decisions are being made which we can't control. We can legislate and regulate all we please, but you seem to feel our main hope is in the role of advocates to those who have more power than we have.

Let me detour. In basic terms, you say we have four companies. What? New Jersey Natural, South Jersey, Public Service and ---

COMM'R JACOBSON: And Elizabethtown Gas.

SENATOR WILEY: --- fed by two pipelines.

COMM'R JACOBSON: Substantially by two pipelines.

SENATOR WILEY: Transco and ---

COMM'R JACOBSON: --- Texas Eastern. Those are the major suppliers.

SENATOR WILEY: And does all of the gas come by pipeline, all the natural gas we are talking about here?

COMM'R JACOBSON: All the interstate gas comes by pipeline. Public Service has its own synthetic natural gas plant, which is shared in by Elizabethtown. There are other resources available too.

SENATOR WILEY: Do you have an approximate number of the quantity of natural gas that is consumed in New Jersey in twelve months on the average, roughly?

COMM'R JACOBSON: I know that the annual sendout for Public Service is something like 150 or 160 billion. So for the State ---

SENATOR WILEY: One hundred and fifty billion cubic feet?

COMM'R JACOBSON: For Public Service.

SENATOR WILEY: That is probably better than half the State.

COMM'R JACOBSON: I don't really know; I'd guess between 3 and 4 hundred.

SENATOR WILEY: Something like 3 or 4 hundred. You mentioned storage was one of the three critical questions. Are we talking storage at the delivery end in New Jersey or storage elsewhere?

COMM'R JACOBSON: All along the pipeline.

SENATOR WILEY: Do we know what storage capacity we have in New Jersey, pooling the resources of all four companies or whatever other sources we have?

COMM'R JACOBSON: Well, each of the utilities can tell you that, but that is really not the relevant figure. The storage capability of the pipeline is

all along the system where the gas is.

SENATOR WILEY: And it is the pipeline that would be doing the storage.

COMM'R JACOBSON: Primarily.

SENATOR WILEY: Do the companies not store at all?

COMM'R JACOBSON: Some of them do - a small share. But primarily it is the pipeline.

SENATOR WILEY: And we don't have precise figures, I gather, on what the storage capacity is.

COMM'R JACOBSON: You mean within the State?

SENATOR WILEY: Well, I suppose ---

COMM'R JACOBSON: Each company could tell you what they have here, of course.

SENATOR WILEY: What they have themselves. Is any effort being made to expand that capacity?

COMM'R JACOBSON: Yes.

SENATOR WILEY: Maybe I should ask how they store it. I have no idea. Is it liquefied in some fashion?

COMM'R JACOBSON: No. The liquefied natural gas is another issue altogether. It brings up dozens of other problems.

SENATOR WILEY: Do they store it in its raw form?

COMM'R JACOBSON: --- in these tanks you see - sometimes underground.

SENATOR WILEY: Sometimes underground?

COMM'R JACOBSON: Sometimes underground.

SENATOR WILEY: Is there any substantial underground storage? I have heard talk of that in the past.

COMM'R JACOBSON: The Federal Energy administration is considering a vast program for development of underground storage. They have raised some peculiar problems, Senator. One of the questions they raise, if you increase the underground storage, are you, therefore, going to be putting on more residential customers, increasing the demand. They had a peculiar report that indicates a sort of adverse response to that.

SENATOR WILEY: There are times of the year when gas is readily available, I take it. Is that so? I mean, if you want to buy gas in the summer, you can get it.

COMM'R JACOBSON: Right now, it's available, right. On January 17th when it is around zero, the deliverability becomes a problem. There is a heavy demand upon the system and the physical requirements of the system are such that it is very difficult to draw the gas out.

SENATOR WILEY: To the degree that it is a seasonal matter or a congestion problem, whatever it is, if we have a usage in a year of three or four hundred - it doesn't make any difference whether it is millions or billions - three or four hundred something, is it conceivable that we could develop a storage capacity that would be some reasonable percentage of a year's annual need?

COMM'R JACOBSON: Yes. The answer to that is yes. They are continually trying to enhance their source capability, either in conjunction with the pipeline, along the system, and some locally here. The argument could be raised to you that the gas is available here now and should be used for new customers next winter. In other words, they are going to wind up with this gas not being used.

SENATOR WILEY: Presumably that could be controlled in some fashion. Once

it is here, we could regulate it.

COMM'R JACOBSON: Well, the ingredient we can't control or even estimate, of course, is the weather.

SENATOR WILEY: Right. I am thinking to the degree that storage is possible, that the supplies are available in off season and you could acquire them and store them, this could relieve emergencies when we then could turn to ourselves rather than to somebody else. I apologize for being simplistic. I don't know what I am talking about.

COMM'R JACOBSON: Senator, let me point out one of the related problems. There are two tanks on Staten Island that are geared to store liquid natural gas, which Public Service is trying to bring in from Algeria. They originally had a contract which required FPC approval, which was not forthcoming, nor has the current petition been approved, which would have provided the liquid natural gas at the equivalent of a dollar a thousand cubic feet. This is at the time when the price was 26 cents. Everybody thought that was high. But the price of natural gas is now above that. Had the FPC approved that petition several years ago, these huge tanks would have been filled with liquid natural gas, which expands at a ratio of 600 to 1 after it is gassified - tremendous amounts of gas. So the first problem was FPC approval. The second problem, of course, is the safe transport of this volatile substance. Nobody wants the boat going up his backyard. Nobody wants the liquid natural gas stored in his backyard. And we continually run into that difficult problem of how you strike that proper balance between the economic needs and the ecological needs.

SENATOR WILEY: On the pricing structure, we have the price you indicated of \$1.46 per unit.

COMM'R JACOBSON: Per thousand cubic feet.

SENATOR WILEY: --- per thousand cubic feet, which is an established, regulated price by the Federal Power Commission ---

COMM'R JACOBSON: --- for interstate gas.

SENATOR WILEY: (Continuing) --- for interstate movements.

COMM'R JACOBSON: Intrastate gas is not regulated. The current price is \$2.25, \$2.40, \$2.50. I have seen it as high as \$3.29.

SENATOR WILEY: And the President's proposal would do what to that?

COMM'R JACOBSON: Would raise it to \$1.75, but eliminate the two-tier system.

SENATOR WILEY: You mean regulate everything at that level?

COMM'R JACOBSON: "Intra" and "inter," right.

SENATOR WILEY: Your feeling about that is that while you regret the price, you appreciate the supply.

COMM'R JACOBSON: It is an acceptable compromise to get rid of the two-tier system.

SENATOR WILEY: What is the likelihood of that ---

COMM'R JACOBSON: I don't know. It passed the House. It is being discussed in the Senate, I think, either this week or next week.

SENATOR WILEY: We are unsure of what our supplies will be, unsure of what our needs will be. We encourage the utilities to be aggressive and go out and make arrangements. How sure could we become if we were aggressive? I have the feeling

that you can make contracts, but they may or may not be fulfilled.

COMM'R JACOBSON: Well, certainly, Public Service, with regard to its LNG contracts, has that problem.

Senator, if you push me to the wall and say, "Where are you on this petition; what are these fellows saying," I would say this - I would summarize it this way. I believe there will be added supplies. I believe their storage capacity is higher than last year. I believe both those things. But nobody can answer the question, will the winter be softer and milder than last year. And, if the winter is as harsh as last year, we are going to have problems, which causes the reason to pause when they ask for the authority to take on new customers.

SENATOR WILEY: Whatever the storage capacity may be within our jurisdiction, do we know whether it is being used?

COMM'R JACOBSON: Yes.

SENATOR WILEY: Or can we find out?

COMM'R JACOBSON: Yes.

SENATOR WILEY: Is it being used? Are we making maximum use of what capacity we have?

COMM'R JACOBSON: The utilities have every incentive to provide themselves with as much storage gas as they can, and I am convinced that they have been doing that.

SENATOR WILEY: Just out of the normal operation of the business?

COMM'R JACOBSON: Yes. By the way, you know it is to their economic advantage. They are all noble gentlemen, but it is also to their economic advantage to have this gas come in, stored and available for distribution. So they do have an incentive.

SENATOR WILEY: What about the costs incurred in storage? Does that work against their ---

COMM'R JACOBSON: I don't think that is a significant factor at all.

SENATOR WILEY: So there is nothing standing in the way of their taking advantage of the supply and storing up so that they are prepared to serve. Is there a way of --- Well, assuming natural forces would govern it, then we don't have to inquire about it. But, if there were any uncertainty, it might be interesting to survey it and see whether the capacity ---

COMM'R JACOBSON: It would be to their economic advantage to get as much gas in storage now. If deregulation takes effect, there is no question that the price is going to go soaring. Senator Jackson estimates \$4 to \$5.

SENATOR WILEY: On the question of competition in the development of sources, you mentioned the joint enterprises or whatever. That is consistent, conceivably in theory, at least, with competition if the joint enterprises aren't too broad based and if a couple of companies get together do one thing and a few others get together and do something else. You could have competition. Is that not the case? Is the cooperation so broad as to eliminate competition?

COMM'R JACOBSON: Well, the theory is they are spreading the risk. That is their theory. My argument is that this is not a free market.

SENATOR WILEY: Help me with this. You say the supply is good - the supply in the ground. I think you said 45 or 50 years.

COMM'R JACOBSON: Right - or offshore.

SENATOR WILEY: The problem is one of getting to the supply and I suppose, too, maybe locating the supply. You don't just tap it easily; you have to take chances.

COMM'R JACOBSON: The estimates of our supplies have already been made. They know; for example, they have bid vast sums of money for certain tracts in the Baltimore Canyon. They are prepared to go out there and explore for it. They suspect they may get some dry holes. They suspect also they may get a great deal of resources out there. They are prepared to do that. They have put an awful lot of money up front.

My argument is that there appears to be an insatiable desire for profit-maximizing which takes precedent over the public interest. Now I suppose you can't argue with that. I can comment upon it. A businessman really is not there to serve the public interest. He is there to maximize his profit, which leads me to the conclusion that there should be a firmer regulatory hand by the federal government. And my specific recommendation has been perhaps the establishment of a national exploration company. Now you get in all sorts of philosophical binds about this one, which I am sure you have heard many times before. The bottom line of my opinion is that these companies are earning sufficient rewards right now to do that exploration without the necessity of increasing prices and/or profits.

SENATOR WILEY: Is this possible, that in the absence of off-season demand to fill up storage capacity, that further exploration or more aggressive exploration might simply give you more production that you couldn't use except in a very short period of time in the year?

COMM'R JACOBSON: No, sir.

SENATOR WILEY: Therefore, it is not economically wise for them.

COMM'R JACOBSON: No, sir. I am sure they could find plenty of customers for the gas they could produce.

SENATOR WILEY: All throughout the year, so as to make it economic. They would then --- There is no disincentive to explore from that point of view, assuming the price is ---

COMM'R JACOBSON: No. Their argument will be that if it is regulated, it is too low. That is their point and my point is the OPEC price is too high.

SENATOR WILEY: I thank you very much, Commissioner.

SENATOR ZANE: Thank you, Senator Wiley.

Senator Vreeland.

SENATOR VREELAND: Thank you, Mr. Chairman.

First of all, at the last hearing, Mr. Bowen, who was the President of the Transco Pipeline, gave me the impression, at least, that the more gas that New Jersey uses, the more the allotment will be by the Federal Power Commission. Is it a fact or isn't it a fact that -- and that was one of the arguments for increasing the consumers for the gas companies. Isn't that true?

COMM'R JACOBSON: Yes. There is a base year which New Jersey's allocation of gas is hinged upon. And it is true that other states are authorizing their distribution companies to take on new customers. If there should be a revision of that base year, based upon these recent figures, it is true that our utilities would sustain a declining share of gas.

SENATOR VREELAND: Would you think then, since you are the Commissioner of the Department of Energy, it would be to the advantage of the State of New Jersey

to allow --- Will you have anything to say about that or is it all PUC? I got from your first statement that you were going to work, your office, with the PUC. Would this be an area where the two agencies would combine if the decision is made or is going to be made to allow the gas companies to increase their consumers?

COMM'R JACOBSON: Well, I tried to explain that. The Public Utility Commission had the responsibility before the establishment of the Department of Energy.

SENATOR VREELAND: I know. I understand that.

COMM'R JACOBSON: Now the Department of Energy bill is nebulous and perhaps contradictory about that. And we decided that rather than to get into a jurisdictional, empire-building fight about who has what right to say what, we would make that decision jointly.

SENATOR VREELAND: That is what I understood from what you said. But you would say then that to allow the gas companies to increase their consumer load would, in essence then, allow more gas to come into New Jersey - the allotment - the Federal Power Commission allotment. Is that right?

COMM'R JACOBSON: If they should base the allocation upon another base year, that could pose a problem, yes, sir.

SENATOR VREELAND: The other point that I think he made which impressed me was the fact that the transmission lines have to buy their gas offshore. They cannot buy in Texas from the producers on land because they can't compete financially to bid. That is the point that he made over and over again, that all the gas that comes into New Jersey by Texas Eastern or Transco is gas that comes offshore drilling from Louisiana and in that area. Is that correct?

COMM'R JACOBSON: Not exclusively offshore. There are some onshore, but it is the interstate gas pipeline and a good deal is from offshore.

SENATOR VREELAND: Well, primarily because they can't compete bidding with the gas, let's say - and he gave as an example, if I had a well and you wanted to bid, you couldn't bid because you can't pay the price because I could get more right there in Texas than I could from the gas line.

COMM'R JACOBSON: Why should I sell it to you for \$1.46 in Jersey if I can get \$2.50 in Texas? That is exactly what the incentive is to keep the gas off the interstate pipeline and away from New Jersey.

SENATOR VREELAND: But this is to be changed, is it?

COMM'R JACOBSON: Yes, sir, that is the recommendation of the Congress, the one-tier pricing system.

SENATOR VREELAND: You made the statement, I think, that if the weather cooperates, there will be plenty of gas.

COMM'R JACOBSON: If you can assure me that we would have a mild winter, I would tell you right now we would give them the authority to take on new customers.

SENATOR VREELAND: Right. I think the other question I would have to you since the energy office is a new one - a new department - and you are heading it up is: How do you feel about offshore drilling off the coast of New Jersey? I have been told by many people and have read it that the feeling is that there is a great deal of natural gas, more gas than there is oil - of course, this is conjecture, as we all know - offshore New Jersey. I have also been told that New Jersey as a state has not encouraged or has not been cooperative with the companies

who are out there and, as you pointed out, have bought the leases and put up the money for this offshore drilling. How do you feel about that? You are now heading up this department. Would it be your opinion that we should be cooperative and your office would be cooperative?

COMM'R JACOBSON: Yes, sir. In the past three weeks, I have had four or five meetings with representatives of the New Jersey Petroleum Institute and I asked them to arrange for me, and they did, to meet with two representatives of Exxon and Shell who will be directing the drilling operations at the Baltimore Canyon. We met and I pledged to them the full cooperation of our office in locating support facilities and trying to determine the safest, most economical and most environmentally secure route for getting the oil or gas onshore. We have pledged them the full cooperation of our office because we realize that the development of these resources are to our advantage.

There are only two caveats I offer, sir. One is - and I can't believe anybody would disagree with this - I don't want to swim in oil when I go down to the shore - and neither do you. We want assurances that there will not be a fouling of our shoreline.

Secondly, if the resources are to be found out there, it appears to me that New Jersey should be assured of its supplies and perhaps royalties in kind - and hopefully at a price that all of us can afford to pay.

SENATOR VREELAND: I like what you say because it seems to me that it is to our advantage and should have been from the start. And, as I understand, we have not cooperated; we have not been cooperative with these companies. I am glad to hear that you plan to do that because it seems to me that this would be a great advantage to us. We have the facilities for the oil and, certainly, it would be helpful for us to get this gas.

COMM'R JACOBSON: Senator, I don't really know why we got rapped with that bad name. I accompanied Governor Byrne to Houston, Texas, several months ago. We met with the major producers there. I heard the Governor assure them that the State was interested in the development of these resources and he just set forth the two caveats that I did - and nobody disagrees with them. So I really believe, if I may say so, that the fact that New Jersey is regarded as hostile is a bum rap; it is not true.

SENATOR VREELAND: Well, isn't it true that the base of operations for the oil companies is in Rhode Island?

COMM'R JACOBSON: Yes, sir, and I discussed it ---

SENATOR VREELAND: Why shouldn't it have been in New Jersey?

COMM'R JACOBSON: I don't know. It has been their determination. I discussed with them just the other day what I consider to be an excellent facility for support facilities in this State, which is relatively close to the Baltimore Canyon; and they told me they couldn't tell us where they are going to locate until they knew what was out there and where it was. But I provided them with what I consider to be an excellent site.

SENATOR VREELAND: You talked about this recently - a new site in New Jersey?

COMM'R JACOBSON: Yes, sir. There have been two reports: one by the Port Authority of New York and New Jersey and the other by Rutgers University, in which they have identified as many as six or eight sites in New Jersey for these support

facilities. They know about those reports. As far as we are concerned, there would be no problem with the siting and we encourage them to establish that for obvious reasons.

SENATOR VREELAND: I think that what you are saying here is fine and I appreciate it. I think it is time that we got into the swim, so to speak, and took the initiative to cooperate with these companies, which I don't think has been done. I am glad to hear you say that you plan on doing it - and are doing it.

COMM'R JACOBSON: I am doing it at the instruction of Governor Byrne - yes, sir.

SENATOR ZANE: Commissioner, I have just a couple of other questions. Is it accurate that if, in fact, these three companies that have petitioned to take on new customers were allowed to do that, that somehow through the mechanism of allocation or whatever it is, there would also be additional gas available to industry by virtue of that?

COMM'R JACOBSON: That would certainly be our incentive. As a matter of fact, when we authorized last year for an additional hookup, we set forth the allocation that 70 percent of the gas should be used for industry and 30 percent for residential.

I must tell you now that if I have an appeal from a utility for new gas to service a factory that would provide a thousand jobs, I am going to find every possible way to provide the gas for those jobs.

SENATOR ZANE: Commissioner, this allocation between residential and industry, is that one made by your office or previous to that the PUC, or is that federal?

COMM'R JACOBSON: That was made by the Public Utility Commission. It was just our judgment as to how we wanted to see that gas allocated.

SENATOR ZANE: I think you said a while back - and please correct me if I am wrong - something to the effect that the Federal Power Commission is a paper tiger or something along that line.

COMM'R JACOBSON: That is being kind.

SENATOR ZANE: Could you elaborate on that as to just what you mean by that?

COMM'R JACOBSON: The Federal Power Commission is charged with the responsibility of setting prices and directing allocations. Let me be very specific. During the height of the crisis last year, Governor Byrne, Attorney General Hyland and I and several members of the Legislature went by two helicopters down to Washington to meet with Mr. Richard Dunham, the Chairman of the Federal Power Commission. Our purpose in going down there was to say, we are in the middle of a crisis - we want more gas. Mr. Dunham said, "You don't have to come here. Jacobson knows how you can get more gas. There are two ways you can get more gas: one under emergency sales and the other under direct sales." Both of those were means of evading the federal regulation and getting the gas at the intrastate, nonregulated price. I said to Mr. Dunham, "Mr. Dunham, I might as well ask you a very simple question. I have a very simple mind. If the gas is available to New Jersey at the higher, nonregulated price, what is the physical barrier to sending that gas to New Jersey at the regulated price?" And the answer is, "none." It is economics - it wasn't supply.

SENATOR ZANE: Do you draw a conclusion from that about the Federal Power

Commission?

COMM'R JACOBSON: Yes, sir, I do. They are a paper tiger. Hopefully, with the new composition of the FERC, Federal Energy Regulatory Commission, I think they call it, under its new role and with new membership, it will become a more effective regulatory authority.

SENATOR ZANE: Somehow I sense you have a feeling that no one is really watching out for the consumer and for the availability of natural gas - that it is other interests that are being served first. And, if that is not what you mean, please clarify it because I am getting that opinion.

COMM'R JACOBSON: I think it is perfectly obvious that the interests of the consumer have not been served by the Federal Power Commission. I have made that charge many, many times. If I may be so aggressive as to say so, Governor Byrne was the only member of the Governors' Conference at the White House to raise with the President of the United States, both President Ford and President Carter, that precise point, that New Jersey needs resources and needs them at a price we can afford to pay. I sat there and I heard all the other governors talk and he was the only one to raise that point.

SENATOR ZANE: Commissioner, one other thing I don't understand - maybe you have come across this - it seems to me that if the courts or Congress or what have you, if they want to bring something under their control and under their jurisdiction, we always find the commerce clause as the vehicle. Have there been any discussions that you have been a party to or that you are aware of as to why all natural gas cannot be regulated, even that which is within Texas, to the point that the federal government could have greater powers and demand additional flow of gas at prices that are reasonable?

COMM'R JACOBSON: That is contained in the House bill that was just passed and is to be voted upon by the Senate either this week or next week. I agree completely with you, sir, that is the solution - the beginning of a solution. I am concerned about the price.

SENATOR ZANE: One other point that you mentioned earlier - primarily what we really do - and this is not as a criticism, but as a comment -- primarily what we really do is we review the submittals and documentations of the utility companies. Through your experience and contact, the federal government, in essence, does that. Really, at no level of government, do we really verify availability, supplies and even profits. Is that correct, that we rely entirely upon their information? There is no internal audit, as such. There really is no internal inventory taken by a governmental body to determine availability of natural gas and supplies. Is that accurate?

COMM'R JACOBSON: Did you say profits? Did you also mention profits?

SENATOR ZANE: Yes, I did.

COMM'R JACOBSON: If you leave out profits, that is accurate. It is true and it is the basis of one of my major criticisms of the Federal Power Commission, that they accept at face value the figures from the industry with no independent judgment.

We are a member of the National Association of Regulatory Utility Commissioners and I am on the Natural Gas Subcommittee. And for two years now, I have been urging this body to take the aggressive steps necessary so that there can be independent

audits of precisely those figures. I must tell you that NARUC is also a group of reluctant regulators because I have not been eminently successful with that.

SENATOR ZANE: Are there any powers that can be called upon within the Office of Energy to improve New Jersey's position as to natural gas?

COMM'R JACOBSON: In supplies?

SENATOR ZANE: Are there any powers that you have --- Is there anything really we can do, through your office, to improve New Jersey's natural gas position?

COMM'R JACOBSON: Legal authority - no. Moral, persuasive - perhaps yes. And that is what we plan to do.

SENATOR ZANE: So, therefore, we really are at the mercy of the federal government?

COMM'R JACOBSON: The supplies that come into this State are beyond our control - that's right.

SENATOR ZANE: Senator Bedell, any questions?

SENATOR BEDELL: No.

SENATOR ZANE: Senator Wiley?

SENATOR WILEY: The Chairman's last question suggested to me asking this, and perhaps this was encompassed in the question: Is there anything in the way of legislation or supplemental legislation that you would recommend that would enhance your ability to achieve these goals? I have a lot of confidence in your ability to carry out whatever authority you are given. The question is: Do you need more authority?

COMM'R JACOBSON: Senator, I must tell you I find it most attractive to be able to say, "Give me the power and I will do the job." I don't believe that any State official can be provided with that power, much as I might like it. I can't see a role where New Jersey is going to solve a national supply problem.

SENATOR WILEY: Thank you.

SENATOR ZANE: Senator Vreeland?

SENATOR VREELAND: Just one question - and I think you have probably answered it: Then, what you are saying is - and I go back to offshore drilling again - that the gas and the oil that might be found off the coast of New Jersey, your office would have no jurisdiction over that if it comes through New Jersey.

COMM'R JACOBSON: Only to the extent of the siting of the facilities to bring it aboard. The new department has coexistent authority over siting with other agencies.

SENATOR VREELAND: You wouldn't have any authority over the allocation, whether or not New Jersey might get a little bit more of that?

COMM'R JACOBSON: No. But I did express the hope, sir, that if there is something out there, we could get our royalties in kind, meaning new supplies.

SENATOR VREELAND: Which would be something that the State would have for the general treasury, in other words, the royalties.

COMM'R JACOBSON: Well, it would be supplies rather than funds.

SENATOR VREELAND: Thank you.

SENATOR ZANE: Commissioner Jacobson, I thank you very much.

COMM'R JACOBSON: I thank you, sir. I appreciate very much your help.

SENATOR ZANE: I would like to call at this time Mr. John Kean from Elizabethtown Natural Gas.

(John Kean sworn as a witness.)

J O H N   K E A N:    Good morning, gentlemen - Senator and members of the Committee. My name is John Kean. I am President of the Elizabethtown Gas Company, which serves approximately 184,000 customers in east central and northwestern New Jersey.

I appreciate the opportunity this morning to testify before this Committee, which is charged with formulating recommendations as to whether there is sufficient supply or availability of natural gas to justify the authorization of utility companies to take on new customers.

Last winter, by January 27th, we had experienced the coldest weather in more than one hundred years. Elizabethtown Gas Company, based on the information available to it at that time, determined to curtail industrial customers for five working days. The cause and effect of this curtailment is still being investigated today. Consumers have been denied the opportunity of gas because of the fear of more curtailments.

Last weekend, motorists were stuck in long lines on the Garden State Parkway. The Garden State Parkway Authority had failed to provide sufficient highway capacity to handle the peak weekend demands. So far, I have heard no calls for legislative investigation of the Parkway Authority. No one to the best of my knowledge has called the Authority to ban traffic on the Parkway, nor has anyone sought to criticize them for not planning for this eventuality. Why? Because even the most talented experts would never suggest that anyone build a road to meet peak demands, nor would they ban cars on a road because of a peak weekend traffic jam.

Now, obviously, utilities have a far greater obligation to their consumers than do highway people in so far as the motorist is concerned. However, how far should such planning go? Should the design of our system be based on the coldest winter ever experienced? Or should it be based on the coldest winter in the last sixty years? We could design our system to meet the coldest winter on record, which even included the winter of 1776 in Valley Forge. However, to plan for a one-hundred-year winter would be equally as expensive as to plan to meet the State's motorists' needs on a weekend such as Labor Day. The cost of tolls to build such a parkway, sufficiently large enough to handle that peak-day traffic, would be unbelievable.

As you may know, it actually turned out that the winter of '76-'77 did not come close to a one-hundred-year average nor did it approach our design year of sixty years. However, on January 28th, it gave every appearance of doing so. Had the winter been equal to the coldest winter in sixty years, no curtailment would have been required on the Elizabethtown system. Why then were we forced to curtail?

Let me tell you about that. The action came about because of external forces on our company's supply. We had the reserves necessary to meet the demand. But due to the excessive amounts of gas being taken by companies outside of the State, we could not get the supply to New Jersey. Therefore, the obviously prudent thing to do was not to take a chance, particularly with our residential customers' welfare. Had we known what the weather would be like one week later, we would never have curtailed a single customer.

I think the answer we must first look at is: On January 19, 1977, our area had accumulated some 3,143 degree days. By the way, the normal number of degree days for the same period is some 2,456. Thus, on January 19th, we were looking at a

winter that was some 687 degrees than normal, about 28 percent, the coldest winter in some one hundred years.

In late January, the National Weather Service was predicting colder than normal weather throughout the whole month of February. As I mentioned earlier, it turned out that February was exactly normal. In late January, looking at forecasts - they were approximately 7 percent colder than our design winter - we made the right decision to curtail industrial customers in order to protect our residential load.

That decision took place, as I mentioned earlier, on January 28, when weather experts were forecasting a winter well in excess of 6,000 degree days. By the way, as it developed, the 1976-'77 winter ended with approximately 5,700 degree days, which means that our design position actually ~~exceeded~~ the '76-'77 winter by about 3 1/2 to 4 percent.

As for Elizabethtown's supply forecast for last winter, the figures provided to the Public Utility Commission in the spring of 1976 and again in the fall of '77 were actually right on target. The real irony of what happened is that Elizabethtown had adequate gas, but because of weather conditions elsewhere in the country and because certain out-of-state utilities had not made adequate preparations and because the Federal Power Commission allowed pipeline companies to fail on their obligation of daily deliveries, we were forced to curtail.

Unfortunately, I might say the State of New Jersey took no action in Washington regarding the Federal Power Commission's posture until after the fact and, by then, it was too late.

What then has Elizabethtown done to prevent similar curtailments, not only for the coming winter, but for the coming years? For one thing, we have increased our storage capability by some 20 percent, going from 5.5 billion cubic feet at the beginning of last winter to 6.5 billion cubic feet by the start of this winter. We have also increased our daily delivery from storage. In addition, we anticipate an increase from our suppliers of pipeline gas; and also to this, we must add the increases or the gas that would be saved from conservation and lost by attrition. I might say that the Elizabethtown Gas Company is the only company in the State served by four different pipeline suppliers: Transcontinental, Texas Eastern, Tennessee and Columbia.

As you know, present customer conservation efforts are being augmented by state and federal insulation programs. To insure that gas saved will be retained by New Jersey, we must be allowed to relocate conserved gas to new customers within our service area. The Commissioner mentioned earlier this morning the question of "finders keepers" or perhaps "savers keepers." To do otherwise would severely compound what is already a serious problem.

I hope at this point I have given you the basic answer as to how we can accept additional customers. Equally important, however, is why you should allow us to accept new customers.

First, and perhaps most important, is the impact on our State's economy and employment. Today New Jersey is suffering from a deteriorating business climate. We need all the stimulation and support we can get. There are many reasons for New Jersey's business decline, but one factor undoubtedly is the uncertainty about a dependable, continuing availability of natural gas upon which to base present

and long-range plans for expansion or relocation.

The residential building industry, for example, has been adversely affected by the on-again, off-again availability of natural gas. Mr. Barry Rosengarten, Immediate Past President of the New Jersey Builders Association, in testimony given before the Public Utility Commission last June said, and I quote: "The residential industry is trying to keep the cost of a house as low as possible. The connection of a house to natural gas aids in fulfilling that goal. Consideration must be given to fulfilling the gas needs of our businesses and industries. Our citizens depend on industry for their livelihood. Without employment opportunities, there would be no demand for homes. Without homes, there would be no industry."

Second, on the industrial side, if New Jersey is to stem the exodus of industry, one of the many things to be done is to assure continuing supplies of natural gas for those companies already in the State who might want to expand production or perhaps add a new line. There are many industries where natural gas is either indispensable or highly desirable, not just because of economic reasons or pollution control, but because there are many processes where other fuels cannot be satisfactorily used. Some examples are baking, precious metal refining, glass-making, food processing, just to name a few.

I would like to point out that natural gas supplies the largest share of energy consumed by industry. In fact, the gas industry supplies almost three times as much total energy per year as the electric industry.

I read with great interest about efforts being made to attract industry to New Jersey, especially Japanese auto manufacturers. However, ever fewer industries or no new industries are going to locate in this State if, among other things, they cannot be assured of natural gas for essential process uses.

Another important why is this: As customers continue to conserve - and we not only support this, but encourage this with our ongoing conservation programs - as we lose customers through attrition, we lose this gas and the consequent revenue. We, therefore, find it increasingly difficult to meet ever-mounting expenses. Eventually, this will force us to seek rate relief. It is a move we would make very reluctantly, but we feel we have no alternative. Indeed, we may be rapidly approaching the point where the increasing cost for labor, equipment, parts and services cannot be overcome because we have no new sales. Twice within the past three years, we have been temporarily allowed to take on new customers. Yet today, we have fewer customers than we did three years ago. As of the end of 1976, we had 168 fewer residential customers and 273 fewer industrial and commercial customers than we did before. In addition, our annual gas sales have dropped by more than 6 billion cubic feet during this period.

I have tried to show you not only how, but why, it is imperative that we be allowed to take on new customers. What happened last winter was due to heavy demand caused by unusual weather. It was a national problem requiring a national solution. There is no imminent crisis as to natural gas. The country has a minimum of 30 to 40 years of proven reserves. There are unproven reserves still to be discovered. There is gas in the Atlantic and there is gas in Alaska. Synthetic sources are being developed. Gas will be made from coal. New technologies will produce hydrogen from the sea, and there are other developable sources.

Of more immediate importance, the State's largest suppliers - Transcontinental Pipeline Company and Texas Eastern - have recently announced several new finds in the

Gulf of Mexico. In addition, they have also signed a letter of intent with the Mexican government for some 550 million cubic feet a day from the vast Reforma Field located in Yucatan. Delivery is expected within the next two years. We have the supply and, for the good of our customers, for the good of our State, and also for the good of my company, I respectfully urge that you allow us to resume the acceptance of additional customers, not on an on-again, off-again basis, but on a regular, evaluated and continuing basis, so that we can prosper and the State of New Jersey can prosper. Thank you.

SENATOR ZANE: Thank you, Mr. Kean.

First of all, we have absolutely no authority to grant, as you have stated several times, permission to take on new customers. That is a proper appeal to be made to the PUC, as you well know.

You said something earlier that I would like to get back on, that your company made a decision to curtail.

MR. KEAN: That's correct, sir.

SENATOR ZANE: I was of the opinion that the decision to curtail was made by the PUC. Am I incorrect in that?

MR. KEAN: The PUC was advised by the companies that they felt it was necessary to curtail. The authority for that curtailment came from the PUC. However, the individual companies could, at that point, have said, we are not in a position to curtail. So the Commission actually provided the authority to allow us to curtail because otherwise we have a legal obligation to serve our customers throughout the State. In this instance, the companies, themselves, had to make the decision, based on their knowledge of supply, that curtailment was the best bet at that particular moment in time.

SENATOR ZANE: I think you made a suggestion that overall the winter of '76-'77 was really not - I don't mean that it wasn't cold - but the full impact of it was not as severe as a lot of people perceived it as having been. Is that correct?

MR. KEAN: I think that is an important point here, Senator, because as of January 28th, we had experienced the coldest winter on record. So the information we had based on actual facts, not projecting the future forward, was that the '76-'77 winter would be the coldest winter ever experienced. It didn't turn out that way, but we had no way of knowing that. The only way we could base our forecast was to look at what had happened up to that moment and then take the coldest records we had available to us, and say, "What happens if it continues on this basis?"

SENATOR ZANE: And that is your point about whether or not there was really a shortage.

MR. KEAN: That's correct, sir.

SENATOR ZANE: The point being that it was prudent at the time to conserve - and I certainly don't have any problems with that - but that that decision, in effect, in light of not being able to predict the weather -- that decision, using hindsight, gave the impression that there was, in fact, a real natural gas shortage when I think that you are suggesting that the end result all the way down the line several months later when we looked back on it was that it really didn't exist.

MR. KEAN: One week later, had we known what the weather was like, if we could have forecast that week in advance, we would never have curtailed a single customer. That doesn't necessarily indicate there is not a shortage of gas supply in the pipelines. We know that there is gas available in the ground. And in response

to some of the questions raised by Commissioner Jacobson earlier, I think it is important to point out that the gas supply is there. When we talk about there is no gas shortage, there is a gas shortage here in New Jersey. There may not be a gas shortage in the ground. But that gas is in the ground; it is not here in the pipelines. Our pipelines will be curtailing us this winter - not by as much as they did last winter. But there is a shortage of supply.

SENATOR ZANE: Senator Vreeland.

SENATOR VREELAND: I like what you just said. In other words, then, what you are saying is, if we had another pipeline, we might not have the problem. Is that right?

MR. KEAN: Not quite a pipeline, Senator. The problem is the pipelines that serve New Jersey have adequate capacity; they do not have adequate gas. Again, to refer to some of the statements made by Commissioner Jacobson earlier this morning and, in fact, he encouraged me to disagree with him - and I intend to do so - in so far as the federal picture is concerned, at the present time, the pipelines are unable to compete for natural gas onshore. Offshore they have the absolute right to do that and they compete among themselves, but the price is established. The big problem, as we have discussed earlier, is the difference between intra- and interstate pricing. So the pipelines do have the capacity, but they do not have the ability to buy the gas at the present time.

Commissioner Jacobson espouses the cause of extending regulation into the intrastate market, while the industry happens to believe it is far better to free the price in the interstate market and let it seek its appropriate level.

SENATOR VREELAND: But in your opinion - and I guess I made that point with Commissioner Jacobson -- in your opinion, if the pipelines were able to bid for the onshore gas, for example in Texas, which, of course, I understand that they cannot bid now because of the price differential, and they only bid on offshore in Louisiana, etc., so if legislation is in the process - and Commissioner Jacobson made that point - to allow the pipelines to bid on an equal footing, would that then mean that New Jersey would get a better supply?

MR. KEAN: That would mean that the pipelines would then be able to buy on an equal basis with everybody else. But that would not necessarily mean the supply would instantly be there. The economic incentive has to be there for the producer to drill in the first place. And, again I have to refer to this morning's testimony because there was, it seems to me, a statement made indicating the paper tiger status of the Federal Power Commission, which I might disagree with since even a paper tiger has teeth and has to be fed. But referring back to the question of the 16 1/2 cents, and the 24 cents, and then the \$1.46, this is used as an example that dollars will not encourage production. One of the things that was left out in this morning's testimony, in my opinion, were some of the other problems of dealing with the Federal Power Commission. A very simple one is called sanctity of contract. Under the Federal Power Commission operations during those times we were talking about a 14 1/2 cent -- or 16 1/2 cent price, there was no sanctity of contract. What this essentially meant was that you had no guarantee of what the price would be. The area price might have been 16 cents; and, if you, Senator, were forming a company, you could take the 16 cents and anticipate your revenue at that price. The first year of operation, you might show a small loss. And the second year, perhaps, you

might even show a profit. The third year, you might begin to start showing a substantial profit. But in the fourth year, the Federal Power Commission would come in and say, "no, in your case, we are not going to let you charge 16 cents; you only get 12 cents." The 16 cents was no guarantee and there was no sanctity of contract. The result - there was no incentive. You could raise the dollars to whatever price you wanted to raise them, but there was no certainty, no guarantee, you got those dollars. That is just one example of that particular time.

So, to go back to the question of today, the producer needs to have the economic incentive. He needs a free market. He needs that \$1.75 price or, perhaps, even better, in order to encourage him to put risk dollars in the ground.

Again, let me get back to the producer for a moment, if I might. Back ten years ago or 1971 - excuse me - that's only six years ago - when the price was 16 1/2 cents, there was more gas available at shallower depths. Today, that gas has been exhausted. So the producer doesn't drill to 8,000 feet; he drills to 12, 13, 15 thousand feet. And the wells start to come in at a cost of somewhere around \$100,000 per foot. And that is very expensive. So they must have the incentive to do that, to drill. So while the pipelines have the capacity, while the parity of price may be level, you then will have a waiting period before you will be able to fill those pipelines, provided the economic incentive is there. That is a long answer to a question. I'm sorry.

SENATOR VREELAND: It is very good. The other question I have is: You made the statement - and I didn't get it - the number of industries that you were serving which you no longer serve.

MR. KEAN: That's correct.

SENATOR VREELAND: What was that number again. I didn't have that. I guess I neglected to get it. But the important thing is this - these industries then either moved out or went out of business or went to some other state or some other area. They didn't do that basically, did they, to your knowledge, because of the natural gas, because of the energy shortage?

MR. KEAN: I can't state that that is totally true, sir. We have 273 fewer industrial and commercial customers. Some of those customers definitely left the State because of the uncertainty of supply. Now they moved into producing states so that competitively we will always face that problem. But the problem we face, I think, today really is that, with the uncertainty of whether they will be allowed to expand, expansion is taking place somewhere else. And New Jersey is unique in a very unfortunate way. We are the only state in the neighboring area in this great megälopolis that we have to compete in where the utility companies are not allowed, at least, to pick up the replacement load. Everywhere else the people are being allowed, at least, to pick up the loss of customers - maybe not add new customers, although many companies along the pipeline to the south of us are adding new customers at this very moment. And they are taking from the same supply that ought to be reaching New Jersey.

SENATOR VREELAND: Now with regard to these 273 that you have lost, from what you said, I gather, you feel you should be allowed or the company should be allowed to use that for what, for other industries or pick up - not new customers because you can't do that?

MR. KEAN: We can't do either one of them, sir. First of all, we must -- it is absolutely imperative for the State that we be allowed to replace those lost

industries with new industries. In other words, we could advertise in our service area, or encourage the State to advertise in our service area, that there is an industrial site and there is gas available. That gas might have belonged to the XYZ Corporation, but it ought to stay in New Jersey. If we let it go, it will be picked up by some other state, perhaps North Carolina or South Carolina, and it won't be here. So we cannot compete with them for a particular plant site.

SENATOR VREELAND: So when we lose customers, we lose the allotment.

MR. KEAN: That's correct, sir.

SENATOR VREELAND: Thank you.

SENATOR ZANE: Senator Wiley.

SENATOR WILEY: Thank you, Mr. Chairman.

Mr. Kean, I gather your testimony is that our problem is not a shortage of natural gas, but inadequate weather forecasting. It was an unusual situation last year - you have described it - with the heavy cold in the early phase and then a projection for continuation, which, had it proved true, would have been extraordinary for the year. It didn't prove true.

MR. KEAN: That's correct, Senator.

SENATOR WILEY: Based on that, without asking you to predict this year, what do you predict for the next 25 years? Are we going to face another similar thing in the 25 years or is that ---

MR. KEAN: That's a little far to predict that far out, Senator.

SENATOR WILEY: What I mean, is the kind of thing that we faced last year so extraordinary that it is a "one in fifty year" kind of an event or is it "one in ten"?

MR. KEAN: It is a little more than one in ten, Senator. I am trying to find the figures I had here. I believe the coldest winter we experienced in the last 60 years actually occurred in 1933, '33-'34. It occurred in 1933-34 and there were 5,900 degree days. If we compare that with the degree days that we had -- let me find those figures. We were forecasting, if the weather continued as it had beyond January 28th - some people were talking about a 6,000 degree-day winter. So that is the comparison. Now the coldest weather in 60 years occurred in 1933. So you could take that and project it and say it is a 40-year swing.

In actual fact, what has happened in this area - and it is now changing - we had what might be called a heat sink. Due to the paving of so much of the area, due to industrial pollution, there was a continual heat sink in the area. So from 1933 up until the present time, there really has not been the ability for the weather to get particularly cold. Now some environmentalists would like you to believe that, due to their efforts, the lack of industrial pollution in the air has now made air cleaner and, therefore, the heat sink is diminishing to some point and that winters will be colder in the future.

We subscribe to all the various weather services around. We don't go quite so far as to follow the woolly bear caterpillars or the groundhog in February. But we use just about every device we can to try and project weather and determine what it will be in the future. And we feel that the 60-year average design year that we are working on at this point has sufficient margin to protect the interest of our consumers.

As I said, last winter we had sufficient gas. We couldn't get it here. That was the problem. We did not run out of gas. But other people were taking that

gas faster than we could get it ourselves.

SENATOR WILEY: You say you had it; you mean you had the right to it, but it was stored in Oklahoma.

MR. KEAN: It is stored primarily out in Pennsylvania, Senator Wiley. We talked about storage in earlier testimony here this morning. These are essentially storage aquifers below ground. Sometimes they are abandoned gas wells, themselves, or a structure which is located beneath the surface, not man-made, but made by nature, where they can repressurize this, inject gas into the ground, and then take it out. One of the problems of doing that is, you put a certain amount of gas into a storage aquifer of this type and it never comes out again unless you put suction on the line. Then you create a vacuum and collapse the cavern. You can't do that. So this is called a base gas and the base gas, due perhaps to the inadequate planning of some companies outside of the State - they were actually taking some of that base gas last winter. This created the problem where even though we had money in the bank in the form of natural gas, somebody else had borrowed that money. So we were unable to take it out.

SENATOR WILEY: When you say you added to your storage capacity this year from 5 to 6 - what?

MR. KEAN: Billion cubic feet.

SENATOR WILEY: Where was that addition made, Mr. Kean?

MR. KEAN: That addition has been put into two or three different storage fields - one located in Texas and two in --- four storage fields. One located up in New York State, two in Pennsylvania, and one in Texas.

SENATOR WILEY: Is that actual physical development or is it just contractual rights for you to that additional storage that already existed?

MR. KEAN: It is contractual rights to utilize someone else's storage field. Elizabethtown Gas Company has no actual out-of-state storage of their own. We do have some minor storage of natural gas in holders in the Elizabeth area. We have some propane storage. Then, as Commissioner Jacobson mentioned earlier this morning, we are a part owner with Public Service in a synthetic natural gas plant in Linden.

SENATOR WILEY: Well, your contractual rights were present last year, you had a right to the deposit that you had made, but you couldn't get it back. Somebody else had drawn it out. Are these contractual rights any better?

MR. KEAN: The contractual rights are there. What essentially happened is that these contracts have the ability to overdraw with penalty. So these customers were all overdrawing with penalty. What happens, if everybody does it on the line, there isn't enough gas in there to meet the demand. What can happen - and we have worked on this - by enlarging our storage capacity, but broadening the different fields and the directions from which these pipelines come from, we hope to avoid the problem of others drawing that supply down and not making it available to us, particularly in New York State where you don't have to run into the problem of some of the states in the southern tier taking the gas out before it gets to us.

SENATOR WILEY: Has any consideration been given to storage within the limits of New Jersey that we might have more control over?

MR. KEAN: I think every company in the State, all four of the gas companies serving the State, have dreams about storage within the State of New Jersey. A few years ago, I believe South Jersey Gas Company and New Jersey Natural - and I am not

sure whether Public Service was involved in that project or not - attempted to drill a few wells to test the subsurface in New Jersey to determine whether there might be storage aquifers. Unfortunately, they were not successful; they did not find any such storage area. We are constantly looking at that, trying to determine whether there is somewhere beneath the surface where there might be storage. One of the things which is interesting is the Baltimore Canyon. Should it be totally dry, it might provide a storage field. Even though there was no gas or perhaps marginal gas there, there might be a sufficient storage aquifer that we would pump gas out to the ocean, store it out there and then bring it back again. That is speculative on my part. But anytime you find the gas-bearing sands, you can inject back into them.

SENATOR WILEY: Is underground storage the only practical thing to talk about?

MR. KEAN: It really is, except for liquid natural gas storage. That gas is not currently available, although all the companies in New Jersey have some. Elizabethtown does have a liquid natural gas storage facility in Elizabeth, right outside the city. But the major part of liquid natural gas, we have looked to the Middle East, Algeria, particularly, Venezuela, for a supply. Unfortunately, due to an industrial accident which occurred at the Texas Eastern facility in Staten Island, I believe approximately ten years ago, where a number of fatalities occurred, there has been very, very strong consumer resistance to any natural LNG, liquid natural gas, facility in the State of New Jersey or even adjacent to the State of New Jersey. I believe Commissioner Van Ness has led this battle throughout the service area we happen to cover, in Woodbridge, particularly, because there are two rather substantial liquid natural gas storage vessels located in Staten Island at this present time, with a cost in excess of \$120 million, that are empty. They are sitting there with nothing in them.

SENATOR WILEY: Because of that kind of opposition?

MR. KEAN: Because of the problem and the fear of liquid natural gas.

SENATOR WILEY: Is there a similar fear concerning underground storage in its natural state?

MR. KEAN: No, sir. Underground storage is really almost replacing what nature put there in the first place. It is stored well beneath the surface and it has little or no danger at all.

SENATOR WILEY: It doesn't present a public hazard?

MR. KEAN: No, sir, it doesn't, although it creates the image. People worry about it seeping into their houses or under the ground.

SENATOR WILEY: New Jersey has had a lot of mining operations in past years that are no longer continued. I would assume that there might be some prospect of finding places like that. Does it make economic sense? Here we have a situation where in New Jersey we are concerned about losing industry. We can't attract them. They are concerned about not having natural gas. It is a seasonal thing. It backs up on you in January when everything binds. From a very superficial point of view, it sounds as though if you had a little more storage that you could control, that someone else wouldn't siphon off, that was within New Jersey, and that the four utility companies regulated by the State could control and reserve, that we would solve our problem. Is that too simple?

MR. KEAN: No, sir, that is exactly what we would like to be able to do.

And I might say some of us have done that. There are a couple of points here. First of all, from the standpoint of controlling our supply, back in the early days of the gas business, we used to manufacture all of our gas here in New Jersey. We controlled it. We made it here. We used it here. That became far too expensive. Then from the '50's to the '70's, we had the heyday of natural gas when the pipelines brought that relatively cheap fuel supply up here to New Jersey.

Since the shortage became apparent - back in early 1969, we could project there was going to be a problem. In fact, Elizabethtown was the first company in the State to actually try to find some of its own supplies in Texas; and we were successful. Some of those supplies have diminished at this point. But at one point, we were delivering almost a third of our own gas, gas which we had developed through a sister company, not with rate-payers' money, but with stockholders' money, by finding and discovering gas in Texas. Since that time, all the companies in the State of New Jersey have an exploration program where they are actually trying to find gas and own it in Texas or Louisiana or off the coast, so that they could bring it up here and have control over it. That is one way of controlling it.

The other way, of course, would be keeping it here. But the most important thing we have to do is to preserve that pipeline supply. It is the cheapest supply of gas for residential consumers and industry and everybody else in New Jersey. If we build too many supplemental systems, they are going to take away our pipeline supply. This is one thing I think the State Legislature could help us with, from the standpoint of standing up for New Jersey. Unfortunately, what happens is that when we have a crisis we respond to it. That is not unusual. But before the Federal Power Commission, before Dr. Schlesinger, the governors of many other states have appeared and told them how urgent it is to their states' economy, how important it is for them to have natural gas. We find it pretty difficult to do that here in New Jersey because it seems that we are a little afraid of last winter's curtailment and, therefore, we are willing to let some of that industry drift away. That shouldn't be our stand, in my opinion.

SENATOR WILEY: Is there a role the State could play in assisting in the development of local storage capacity?

MR. KEAN: In so far as storage is concerned, Senator?

SENATOR WILEY: --- to bridge us over these crisis periods.

MR. KEAN: I don't really see, even with the State's strength and resources, that they could do much to assist us in the storage side. There could be State assistance at some time in the not too distant future from the standpoint of gas manufactured by coal. Some day, we may see the need to have an authority, perhaps including the State of Pennsylvania, the State of New Jersey, and maybe one other, to establish a coal gasification plant. It would be located in Pennsylvania, but the cost of that plant and the pipeline to bring that gas from there to New Jersey would be very, very expensive. I doubt that any company could finance that themselves. It would require State action, but it is something for the future.

In the meantime, the State, through a committee of the Senate, such as I am addressing today, through the Attorney General, through the Governor and through Commissioner Jacobson, and the new Department of Energy, really has to be heard in Washington. We haven't been there. Our company, alone, I think spends more money in defending the State of New Jersey's position before the Federal Power

Commission than any other company for its size. That shouldn't be that way. People might say we had a vested interest. We do, to be sure. But had our State been down there, had we been represented before the Federal Power Commission on many of these things in the past, we might have had a better deal for New Jersey.

SENATOR WILEY: I gather that is some of the thinking behind the creation of the Department of Energy, that we will be better able to speak with a united voice.

MR. KEAN: We are maintaining a "wait and see" attitude, sir.

SENATOR WILEY: If we used 3 or 4 hundred billion cubic feet a year in New Jersey, what kind of supplemental storage would you need to give you a reasonable assurance that you could handle these occasional crises - 2 billion, five billion?

MR. KEAN: It depends on each company's different load factors. I think the best way I can describe it - Elizabethtown's gas needs for the year are approximately 25 billion cubic feet. On a daily basis, that comes out to somewhere around a peak day of 150 million. It varies in the summertime - it peaks in the wintertime. But let's take the peak day. It might be 150 million. Now, of that 150 million, 100 million comes from various pipelines. We have a shortage of 50 million. The 50 million we have to make up from storage, from propane gas, from manufactured gas, and from a little bit of liquid natural gas. That mixture is the critical element in determining what we do each and every day because certain of those supplies - in fact, all of those supplies - are finite. We know there is only so much gas in the ground, so much gas in the tanks, so much gas that can be manufactured by a plant. We don't dare draw that down to zero. We won't have anything in the bank. So we keep a reserve cushion in there all the time.

But to provide enough gas in storage or inhouse capability in New Jersey, the economic cost, unless we found underground capability, would be prohibitive. It just could not be accomplished in my opinion.

SENATOR WILEY: With underground capability, it could be accomplished.

MR. KEAN: Yes, sir, it could.

SENATOR WILEY: You are satisfied that adequate physical exploration has been made around the State? There are a lot of open lands around.

MR. KEAN: It is my impression - and I am not a geologist - that based on the studies made - and perhaps other gentlemen who will be testifying from the South Jersey Gas Company, particularly, are better qualified to answer this question -- but it is my impression, based on the geological results of the South Jersey tests, that it pretty well forecloses any possibilities in that segment of the State.

If you look to the north, we have such incredible granite outcroppings that it is very unlikely that we would find the correct storage aquifer that would be required. Although, if you continue to the north, there are gas deposits in Pennsylvania, there are gas deposits in New York State; but all the various studies that have been made - and there have been some made by some of the major oil companies - have indicated that it would not be economically feasible in New Jersey.

SENATOR WILEY: Thank you.

SENATOR ZANE: Senator Bedell.

SENATOR BEDELL: Mr. Kean, does your company, the Elizabethtown Gas Company, do any drilling or exploration, itself, or are you a wholesaler more or less for oil that comes in?

MR. KEAN: The Elizabethtown Gas Company does not do any exploration itself. It has a sister company called National Exploration Company, which is very active in the Texas market, and Louisiana, doing exploration work.

SENATOR BEDELL: Is your firm an investor-owned utility?

MR. KEAN: Yes, sir, they are. We have approximately 3700 stockholders in 44 states and 7 foreign countries.

SENATOR BEDELL: I was concerned originally about your remarks covering expansion of facilities. It would seem to me from what I have been able to read that there is a tremendous tax incentive to not only expand, but even to expand beyond any needed capacity. The figures I have, published in the Congressional Record, indicate that in 1955, 14.7 of the total revenues by investor-owned utilities prepared income taxes, but in 1976 that went down to 1.3 percent, which indicates that as the cost to the customers grows, the amount of moneys being returned to the federal government in taxation from the utilities is diminishing. From what I understand that is, in part, due to the very, very little investment credits and the accelerated depreciations for machinery, which would appear to give an interest-free, often nonrepayable loan to the utilities for improving their own facilities. So why wouldn't there be an incentive for them to expand their capacities to handle increased amounts of gas or electric, as the case might be?

MR. KEAN: I think the figures that you are quoting - and I don't have the benefit of the document in front of me - pertain to electric utilities where they are investing unbelievably large amounts of capital in nuclear generating facilities; and that this is creating the problem. The gas industry is such - its major investment is in pipelines - and pipelines are totally and completely productive. We don't install pipelines in the ground unless we have a market to supply.

SENATOR BEDELL: I understand that.

I am referring mostly to the Subcommittee headed up by Representative Moss that was investigating some of the actions that were going on at that time. And at that point, he doesn't distinguish in the facts I have between the utilities being electric, although the earlier part of the report does refer to electric utilities. You may well be right and you probably are.

MR. KEAN: I believe that is what he is talking about, sir.

SENATOR BEDELL: Can I ask another question? It is certainly not meant to embarrass your firm or anything else. Did your Elizabethtown Gas Company pay any federal income taxes in 1976?

MR. KEAN: Yes, sir. They have continuously paid federal income taxes. I wish I had the figures in front of me.

SENATOR BEDELL: I didn't want to put you on the spot. I am just asking for the record - that's all.

MR. KEAN: We are proud to be taxpayers. We don't like to pay as much as we do pay. Unfortunately, I had another business commitment earlier this morning. I normally carry our company's annual report in my briefcase and I gave it to somebody else. So I cannot quote the figures accurately. But our tax bill is comparable to any company our size.

SENATOR BEDELL: That's good news. Thank you, Mr. Kean. I have no further questions.

SENATOR KEANE: I would just like to ask a couple of other questions, Mr. Kean. I have the distinct feeling that we were going through some semantics as

to whether or not you had gas available, physically available, or whether or not you had gas available by contract, making the distinction as to that which you could not get and that which you actually had available to you. I just want a clarification. Did you or did you not have gas that you could send directly to your customers at the time of the crisis?

MR. KEAN: That is a difficult question to answer, Senator, because there are all kinds of elements that go into it. Let me try and do it in separate pieces.

First of all, we had gas under contract in a storage field, which the pipeline had an obligation to deliver to us. They were unable to deliver it on demand. And in actual fact, at that particular moment in time, they told us that because --- Let me correct the record for a moment. A week later, at the end of the five-day period, after conferring with Commissioner Jacobson and Governor Byrne, Public Service and Elizabethtown Gas Company determined they would be able to turn industry back on again. At a rather elaborate press conference, that decision was made on a late Thursday evening and early Friday. We then conferred with the pipelines, and we had been receiving emergency gas at that particular point, and we told them that we intended to turn our industry back on, on Monday Morning. It is important to stress the words, "we intended to turn on our industry on Monday morning." They immediately, on Friday, cut off our emergency supplies. We said, "You can't do that." They said, "Well, you have an intent to turn industry on and we are only allowed to supply gas when you are curtailing industry under the emergency provisions."

SENATOR ZANE: Who were the "they" that you are referring to?

MR. KEAN: This happened to be Transcontinental Gas Pipeline Company. We said, there is no basis for this intent, to take action based on intent. If we are, in fact, serving industry, then we have no right to emergency gas. And we needed the gas for those three days of that weekend. As it turned out, we got through. But had we had a cold snap at that particular moment, our goodwill and desire to get industry back to work on Monday morning might not have occurred.

SENATOR ZANE: Are there any known technological problems that actually contributed --- I understood your explanation about the use of base gas, and what have you. Are there any other known technological problems that should be addressed by the pipelines in the future to preclude this problem? I will tell you what I mean and I don't know how technical it is. Someone indicated to me that the capacity for gas to flow once the temperature where the pipeline are underground falls below 20 degrees is diminished significantly. Is there any truth to that that you know of? If the question is not clear, I will restate it.

MR. KEAN: There is a direct correlation between temperature, pressure and volume, so that if the gas was perhaps refrigerated, you could get more capacity in the pipeline. At the present time, again though, it is not pipeline capacity that is our problem. There is capacity in the pipeline, but there is no gas to put in it. So while techologically you could increase the capacity by lowering the temperature of the gas going through that pipeline, that is not our difficulty. Our difficulty is to fill that pipeline full of gas and be able to purchase it in the appropriate area and get it up here to New Jersey.

One of the things which I mentioned earlier, there will be gas coming to New Jersey from Mexico, but that gas is going to be getting here at a very, very

high price. Commissioner Jacobson mentioned his aversion to pricing gas based on the BTU equivalent of number two oil because his contention is number two oil is an OPEC base price. The Mexican government said, we will sell gas to the United States to the pipelines that serve the United States, and here is the price we will sell it at. No quibbling, no bargaining - this is the price. The price they choose is the deliberate price for number two oil in the New York market. They were delivering natural gas at that price at the border between the United States and Mexico. We then had to transport that gas from that border all the way up here. So the result is that gas which we are looking for in the future will be far more expensive than the gas we are presently buying.

SENATOR ZANE: Maybe this is just oversimplistic on my part, but I am assuming that there are contracts that you enter into with the pipelines as to the amount of gas that you need, and I understand from prior testimony back on the 4th of August that these are generally long-term contracts. In 1976 and '77, if that is how the order is placed, we will say, with the contract, how much gas was actually contracted for by your company?

MR. KEAN: We have not contracted for any additional gas because they haven't made any available. The present contracts are still in force.

SENATOR ZANE: How much gas is that?

MR. KEAN: It is approximately the 25 billion cubic feet.

SENATOR ZANE: So for that 12-month period of time, whatever it would be,

25 ---

MR. KEAN: --- billion cubic feet.

SENATOR ZANE: (Continuing) --- billion cubic feet. And during that same period of time, how much natural gas was used by your company?

MR. KEAN: We utilized or stored all of that gas because the type of contract we have is a commodity and demand-type contract, so that we would be paying for it even though we weren't using it. What we actually do is, in the wintertime, we use all the gas we need to meet weather demands on the system. In the summertime, we take that gas and store it so we have it available for the wintertime. So, due to the heavy demands on the system last winter, all the gas that was available this summer was either sold or stored. There is no gas that is just let go by the boards.

SENATOR ZANE: So, in other words, the 25 billion that was contracted for was either used, distributed or stored?

MR. KEAN: Yes, except the 25 billion is not the amount contracted for; it is the amount actually delivered based on their curtailments. The contracts, unfortunately, are not like a contract that you and I might enter into where we would agree to the terms and conditions and live by them or else suffer the consequences. These contracts, unfortunately, have a provision in them where the Federal Power Commission allowed the pipeline companies to curtail. So while they may have a contract to deliver 100 million cubic feet to us, under the present system, they are not living up to that contract; they are not, in fact, delivering 100 million cubic feet.

SENATOR ZANE: Let me ask you in another way. How much natural gas during that same period of time, under the contract or whatever, could have been available to you?

MR. KEAN: I don't unfortunately have those figures, but I would think it would be in excess of 35 million cubic feet they should have delivered.

SENATOR ZANE: Billion?

MR. KEAN: Billion.

SENATOR ZANE: And how much natural gas --- I guess we have to go back to the 25 billion figure as what was used or stored.

MR. KEAN: That's correct, sir.

SENATOR ZANE: For this year we are in now, in which your company is asking to tie into new customers, is the availability increased; it is more than the 35 billion?

MR. KEAN: It is not as much as the full contract requirement, but both pipelines have indicated, both major pipelines, Transcontinental and Texas Eastern, have indicated to us that they will improve their level of curtailment, in other words, lessen it, by somewhere between 10 to 14 percent. So there will be more gas available this coming winter.

SENATOR ZANE: So that would mean to your company ---

MR. KEAN: To our company, if we take the figures and just apply 10 percent to them, it would mean we would have somewhere around 27 to 28 billion cubic feet available to us on firm pipeline supply.

SENATOR ZANE: Now that is less than ---

MR. KEAN: --- more than last winter, but less than the full contract amount. It doesn't seem in the near future that we will see the full contract amount being achieved.

SENATOR ZANE: How much of that additional amount would be required to meet the needs of these new customers on a 12-month basis that you would want to tie in?

MR. KEAN: We believe, based on the gas we have in place, in storage, under pipeline actual deliverability, not just contract, that we could take on somewhere between a one and a three percent growth, without jeopardizing any of our present customers.

SENATOR ZANE: I want to ask the question again. Of that additional amount that Transco is telling you that would be available, which takes you up to 27 or 28 billion, how much of that would be required to meet the needs of your new customers?

MR. KEAN: Again I don't have the exact figure in my head, Senator, and I would rather not speculate on it.

SENATOR ZANE: Well, most of it?

MR. KEAN: No, sir. Again, the pipeline demand versus the peaking requirements are quite different. If we take --- you have to determine the number of customers. If we are going to take on, let's say, one thousand, two thousand, three thousand customers, with a max of three thousand customers - each of those customers could be a different kind. It could be an industrial customer, who might use a substantial amount of gas. So you can't really use customer base. We could take on one major industry and they might require somewhere around a million cubic feet of gas. But, again, we are talking about billions in our supply. So I would say, if you add the additional 10 percent that the pipelines anticipate improving, that we could meet that 3 percent increase in present customers.

SENATOR ZANE: Do you project the number of additional customers that you

want to take on on the basis of this additional gas that Transco has told you that will be available to you?

MR. KEAN: No, sir, we couldn't do that totally. In making our application for additional customers, we would have to look at not just now, but the future. There are a number of different supply contracts --- Texas Eastern, for instance, has a major supply contract with Gulf Oil Company. That contract is being overfulfilled at this point because they underfilled it in the early years. They are providing actually more gas now than really can be utilized by Texas Eastern customers. So that could conceivably run out. We have to project out further what their new supplies are going to be - how they are going to fill it - because once we take on a customer, we hope we will have him for a few years. So, in looking at it, we do it very, very conservatively. We cannot say, we have got all this gas in-house today, let's take on enough customers to use it all up because we know that the present supplies will deplete and we know that the additional supplies being added are not and have not been sufficient to meet the depleting reserves the pipelines are utilizing at the present time.

SENATOR ZANE: Mr. Kean, if, in fact, you are not granted permission to take on the new customers, what will happen to that additional gas that is available?

MR. KEAN: It will probably be used to provide additional security for present customers, to the point where, if we do not sell it, then eventually we'll be paying for it anyway. This is a point of no return.

SENATOR ZANE: Would I then understand that that gas still would be your gas to distribute, that it would not be redistributed to other states?

MR. KEAN: I am afraid it would be redistributed. Even though it is under contract to us, if we do not utilize it, we do not desire to take it ---

SENATOR ZANE: Therefore, your testimony really is that, if New Jersey does not use this additional gas available to us, which you seem to feel, barring an abnormal winter, would not jeopardize present users, or what have you, that, in fact, it will be rerouted to another state.

MR. KEAN: Absolutely, sir - no hesitation on that one.

SENATOR ZANE: Presently, with the PUC imposing this moratorium or whatever - and I think your earlier testimony was that other states are not following suit in that, that they are permitting new customers or replacement customers ---

MR. KEAN: That's correct, sir.

SENATOR ZANE: (Continuing) --- then are we already losing gas?

MR. KEAN: At the present time, we are losing gas; and, in fact, I believe every company serving New Jersey has been turning down gas being offered by the pipeline companies. To be sure, it is warm weather, right now. So there is more gas available than is required. Whether in the middle of the winter such a situation will exist, I do not know. But I know for a fact, in so far as Elizabethtown is concerned, that we have been offered more gas than we can take to meet existing customer demands or fill storage capacity.

SENATOR ZANE: Mr. Kean, I recognize you and the other gentlemen from the utility companies as businessmen with a tremendous responsibility to the people of this State. That which you are requesting now and in light of other information that you may have available to you as to the availability of natural gas in the future - can you say, without fear of contradiction, that what you are asking for at this point and based upon the gas that is projected, that it is not going to

jeopardize the State of New Jersey ten years down the road - those people who are presently users?

MR. KEAN: Yes, sir, I think I can. I think this is a very important part of our business. And I am glad you mentioned the obligation that we have as utility executives, because we do have a very strong social responsibility as well. We have a responsibility to our consumers and to our shareholders. But our consumers very often stand ahead of everyone else because our reputation is at stake. My particular company is the oldest existing gas utility in the State of New Jersey, having been formed in 1855, and we have a reputation that we don't want to see besmirched in any way whatsoever. We would not intend to hurt our company's reputation nor the gas industry's reputation because at this present time, due to the scare tactics, the uncertainty, people are reluctant to use gas. And everything we do to encourage that type of concept basically hurts our company. So we in no way would want to oversell to the point of jeopardizing our future. We want to sell because we want to preserve what we have. Our immediate request which is pending before the Commission at this time is replacement. If you don't want to give us new, let us at least maintain the status quo; because, if we don't, we lose economically, the State loses economically, the State loses its supply, and the present consumer of the Elizabethtown Company gets stuck with the bill. And that is also a big problem.

SENATOR ZANE: Do you agree with Commissioner Jacobson's earlier testimony that there really isn't anyone watching the store as to what natural gas we really have available and we do, in fact, rely upon industry for that information?

MR. KEAN: No, sir, I really do not. I think at this point I have to reveal some of my other affiliations because I happen to be the Second Vice Chairman of the American Gas Association as well as the President of the Elizabethtown Gas Company. So, bearing that in mind, let me defend the position of the American Gas Association.

The Commissioner earlier this morning alluded to the fact that the proved reserve study, because it had been conducted by the American Gas Association, was in some way tainted. I think it is very important that the Committee understand that when you measure gas reserves, there are three different categories: proved, probable and possible. It is a very inexact science. A so-called proved reserve of natural gas is measure based on a flow test from a well or several wells in a particular field.

SENATOR ZANE: Not to cut you short, but is this done by the government or is this done by the Gas Association?

MR. KEAN: It is done both by the government and by various industry people supervised by the Gas Association.

SENATOR ZANE: What federal agency specifically does that?

MR. KEAN: The Federal Power Commission conducted their own survey and the U.S. Bureau of Mines actually conducted a survey. I will add one thing, if I might, Senator, because the American Gas Association is not a producer organization - it is an association of distributor companies throughout the country - so we are the people who are interested in getting the gas. And it is to our best interest to be absolutely certain what that supply is. We are not producers.

SENATOR ZANE: Mr. Kean, I recognize with any business, and certainly with a utility company, that there are certain fixed costs that must be met. With inflation, I am sure that they increased. What effect does this have to present customers if, in

fact, you are not permitted to take on additional customers?

MR. KEAN: It has a very serious effect on present customers, Senator, because the base of customers is the base upon which we spread the cost of doing business. If we have one hundred thousand customers, we then have to spread over that hundred thousand base the cost of providing that gas service to them. If there are two hundred thousand customers, obviously the customer then bears 50 percent of the cost. So the more customers we have, the less cost there is to the present base. If our customers diminish, as they are presently doing, then those remaining bear a higher percentage of the cost.

SENATOR ZANE: Do you have any projected figures, if, in fact, you are denied tying in, what the additional cost will be in percentages to the existing customers?

MR. KEAN: The existing customers?

SENATOR ZANE: --- to bear the brunt of these fixed costs.

MR. KEAN: One of the problems here is we are not allowed to raise our rates to meet our needs. This is a regulatory process where we have to go before the regulatory authorities and seek approval for that. So we are in a frozen position, as it were. Even though our costs increase, we have no way of passing that on to the consumer. What eventually happens is, that income figure gets smaller and smaller and smaller until finally you get to the point where the people who own our debt securities find they have insufficient coverage, and then they start to give you all kinds of problems and could even foreclose. Prior to that time, any prudent manager then has to go to the regulatory authorities and seek approval for higher rates. So even though the attrition in customers results in a higher cost to the individual consumer, that doesn't take place immediately. It is postponed until such time as the utility finally feels - I can't - my back is against the wall and I can't take it anymore because my financial integrity is being jeopardized. Then he goes for higher rates.

In our gas industry, we are a highly competitive business. No one has to use natural gas, except a few process people. The residential consumer doesn't have to use natural gas. He has oil. He can go back to coal. And he has electricity.

SENATOR ZANE: Mr. Kean, if you were to take on the new customers and if, in fact, you had a severe winter come along, who would be curtailed first?

MR. KEAN: We would curtail industrial customers first, Senator.

SENATOR ZANE: Those new ones coming on would not be ---

MR. KEAN: The residential homeowner would be the --- I could state to you today, the residential homeowner would not be curtailed.

As it happens, due to last winter's experience, many industries are self-curtailling. So even if you try to project a similar winter to last winter, add in the elements of perhaps 3,000 new customers, which we could not add by this winter anyway - but even if we put them in there, if you had exactly the same winter, it would be my estimate, and based on the increase in the pipeline supplies, that our present industrial customers could voluntarily cut back sufficiently so that there would not be enforced curtailments on our system. I don't believe they would have to curtail at all. But if the impossible happened, if we had a repeat, not of last winter, but colder than last winter, then I believe the industrial customers, themselves, because of last winter's experience, their knowledge of how to do this and their ability to stretch their production schedules --- I feel they would

voluntarily keep enough gas off the market from their own use that we would not have to enforce curtailment on anybody.

SENATOR ZANE: Mr. Kean, I think you have testified a couple of times that you feel that there will be more gas available and you have given us a projection of it, where is it coming from?

MR. KEAN: Most of the gas is coming from offshore, due to greater exploration and finds. I mentioned the gas from Mexico. It won't be here for two years. But the gas largely is coming from a slightly improved economic climate.

SENATOR ZANE: Does that mean that now there is more money into it and they are looking for more gas?

MR. KEAN: The more money you put in, the more gas there will be, undoubtedly, sir.

SENATOR ZANE: And that is really what this is all about, isn't it?

MR. KEAN: It is economics very clearly from the standpoint of the producer. He has to have that economic incentive in order to risk the money to find the gas, which, as I mentioned earlier, is far harder to do than it was. Ten years ago, it was relatively easy; twenty years ago, it was quite easy.

SENATOR ZANE: If I understand this correctly, your company, itself, will not directly benefit by the finds of additional gas at higher prices. However, your sister company will, won't it? And those sister companies of the other utility companies will, won't they?

MR. KEAN: No, sir. I have to answer that question two ways. The Elizabethtown Gas Company, finding gas at higher costs, receives no profit from the higher cost. It could accrue to its economic benefit because if it has more gas, obviously, hopefully, you would have more customers.

From the standpoint of an exploration subsidiary, the cost to the utilities would be less than it will if they buy it through the pipeline or any other way because the utility can go to Texas and then can afford to take the gas, because they are in the business for gas. Their alternative is to manufacture it, we will say, at \$3. Therefore, if they can get the gas for anything less than that and have it transported to New Jersey for anything less than that, they will do it.

A producer - he has the problems of trying to satisfy his investors and trying to make an economic return on that. The utilities economic return is in the commodity itself. So there is a distinct difference.

SENATOR ZANE: I understand that. I tried to make that point, that the utility companies, themselves, will not directly benefit by that, but that those that are bringing the gas out of the ground will, in fact. And I find in each and every case - and we will hear from the others this afternoon -- but in a great number of cases, I find that those utility companies that are to serve us, those utility companies that are telling us about the additional availability of natural gas and that it requires more money to get it, have companies that will, in fact, directly benefit by that more money. That, to me, just represents a conflict, be it moral or legal. That to me is totally wrong and I think it is an area which the federal government should address.

MR. KEAN: Okay. I think from the standpoint that the consumer, whom I think we are all concerned about -- the utility who is in the exploration business today is doing it under a very regulated basis. He is subject ---

SENATOR ZANE: But they are pushing for deregulation.

MR. KEAN: They are pushing for deregulation from the standpoint of the purchase of a pipeline, yes - they are pushing for that - because they have got investors too. But from the standpoint of the cost, the cost to a utility versus the cost to a producer could be quite different. The utility would be very pleased to get that gas almost at any price other than whatever the high price would be of manufacturing here. If he can get it at anything under the manufacturing price, that is to his advantage. The producer, on the other hand, is totally - we have to get back to it - he is totally an economic creature. He isn't interested in the commodity. He is interested in the dollars he will get for that commodity.

SENATOR ZANE: One other question - are you an officer in your exploration company?

MR. KEAN: Yes, I am.

SENATOR ZANE: What is your position there?

MR. KEAN: I am Chairman of the Board.

SENATOR ZANE: Thank you. I have no further questions.

Senator Bedell?

SENATOR BEDELL: I hadn't intended to get into this, but I will be very brief. The thing that prompted my coming back was the fact that you did mention you were an officer of the American Gas Association. From what I have been able to read so far in the congressional testimony regarding the Subcommittee headed by Representative John Moss, the only real hard-fast figures that are available to the federal government or to the Federal Power Commission are those which are generated by the industry. Is that substantially so, sir?

MR. KEAN: The industry, itself, is a very broad definition, Senator. Again, the Gas Association is a trade association of gas distributors. In Congressman Moss's definition in the record, I believe he was referring to the industry in the broad sense and that you would include within that the producers, the pipeline companies and the distributors.

SENATOR BEDELL: What he says here substantially is that each year the AGA appoints about 100 geologists and reservoir engineers from the pipelines and producing companies to its National Committee on National Gas Reserves. This Committee is divided into ten regional subcommittees of about ten men each. Each subcommittee asked the companies in its region for its data on their fields. From these, the National Committee then draws up its own reserve estimates. Is that substantially correct, sir?

MR. KEAN: That's correct, sir.

SENATOR BEDELL: Then further into the congressional investigation - and, of course, this is the Senator reporting actually, so it might be biased from your point of view - he says that the only place where there are hard, fast figures which must be divulged by the companies are those in which the fields are in the federal domain, itself, that the companies that lease them from the government are required to turn over all their raw data to the United States Geological Survey.

MR. KEAN: Is he suggesting that?

SENATOR BEDELL: No, he says that is the only area.

MR. KEAN: Yes, that is a fact. But I think you have got to remember the competitive situation here where you have a group of some one hundred individuals, most of them representing independent companies. They have in their hands the information

about where they have drilled wells, what the potential is from those wells. They are not about to tell their competitor who is sitting in the chair next to them.

SENATOR BEDELL: That is the point I am trying to make. In the sampling then that they did, they took the AGA's figures from their people who were coming out with the figures against the hard, raw data they got in the same area and found out that the new figures they got were 63 percent higher than the AGA's figures in that one sampling, which indicated that in a particular field which was in the Gulf area, that AGA geologists had apparently overlooked some 8.8 trillion feet of gas in one sampling alone.

MR. KEAN: I can't answer specifically about that geological area you are referring to without having a lot of facts in front of me. But let me try to speculate as to what the situation may have been.

In determining the amount of reserves, it is a very inexact science; and also, if you include within reserves - and you don't put in the first qualifying statement, "are we talking about proved reserves, possible or probable reserves" --- Also it is often found that people in examining reserves will assume that if the reserves are really there, that they can take every single cubic foot out of the hole. It doesn't work that way.

SENATOR BEDELL: Well, the thing that bothers me, is apparently the federal government was proceeding upon a series of definitions which were given to them by the AGA Reserves Committee Chairman in 1970. Then later on, since you were a ranking official in the organization, you would know, I guess, personally or by reputation, the President, at the time of the Moss Committee's hearings - AGA President F. Donald Young - who told the Committee as to the availability of data from which the government can work, "Where else can you get the data?" That, to me, speaks for itself. I think that the terminology and gymnastics that is done in the language actually, even though that may be the proper way to do it by the gas companies, certainly in their performance, at least before the federal government, they haven't put their best foot forward public relations-wise. It doesn't sound good at all. That is all I want to say.

SENATOR ZANE: Senator Vreeland.

SENATOR VREELAND: Just one brief question: Mr. Kean, I think in your original statement that you read, going back to last winter's crisis, energy shortage,--- To preface that, the Federal Power Commission has the power to make the allocations to the states - when I say that, is that correct? - on data that they may have or get through their sources. Do they make the allocation to the various states?

MR. KEAN: Not to the states, sir - no, they do not.

SENATOR VREELAND: All right - they don't. You made the statement - I think I'm correct - or had it there, that if last winter, the State of New Jersey had gone before the Federal Power Commission in time, we might have averted considerably the energy crisis. Is that right?

MR. KEAN: Yes, sir, I did.

SENATOR VREELAND: Would you elaborate a little bit further on that part of it?

MR. KEAN: The pipeline companies that serve New Jersey and elsewhere are all regulated by the Federal Power Commission. They must receive a certificate of convenience and necessity from the Federal Power Commission in order to transport gas

from point A to point B. Those hearings which are held under FPC dockets in Washington are the one time when a utility company or a state or any other individual has the opportunity to intervene before the Federal Power Commission and say, approve that transportation, but make certain the transportation is - just for an example here - extended sufficiently so that it ties into the loop line which serves the northern district, or make certain that this particular application is tied into a storage field which, in turn, can be served.

The time when a utility company and the state can intervene in these proceedings is before. before these things are accomplished, before the pipeline company is given the authority to move that gas or to acquire that gas at a particular price. It is before the FPC proceedings that we see now the Governor of the State of North Carolina who is constantly appearing before the Federal Power Commission on behalf of his state. The Governor New Jersey, to the best of my knowledge, appeared once after the crisis occurred.

SENATOR VREELAND: Let me ask you, along the same lines, the Governor of South Carolina, did you say?

MR. KEAN: North Carolina.

SENATOR VREELAND: He appears frequently. Then, as a result of his appearances, let's say, that state had no crisis. Is that what you are really saying? Or, they had sufficient gas.

MR. KEAN: I believe, sir, that as a result of perhaps the Governor's appearance, but certainly as a result of a decision made by the Federal Power Commission, that the means of supplying gas was slanted towards the needs of the State of North Carolina or a state in similar circumstances. New Jersey utilities have expended a lot of money on supplemental supplies. We should not be deprived of our cheap pipeline gas because we have supplemental supplies. Some of the southern states have not spent any money on supplemental supplies nor, at one point, did they have any storage. So it was in their best interest to get as much pipeline gas into their states and it was in their best interest that in calculating the gas needs, which the Federal Power Commission did, that supplementals be included for the northern states - and it sounds like we are starting the Civil War here -- but the supplemental supplies be included in the northern states' calculation, but the pipeline gas be included for the southern states.

So this is the kind of thing -- it doesn't mean that because the Governor of North Carolina appeared before the Federal Power Commission that they received a cubic foot more of gas, as such. But, not necessarily as a result of his appearance, pipelines and the rate schedules and how they are formulated were slanted to benefit this particular tier of states.

SENATOR VREELAND: So would you say then since we now have in the State of New Jersey an Energy Department and we have a Commissioner, that if he were to appear before the Federal Power Commission, often, on our behalf or, as you pointed out, for the northern tier of states, this would have some effect in getting more gas through the pipelines, let's say, into New Jersey?

MR. KEAN: Yes, sir, I think it would.

SENATOR BEDELL: Okay, thank you.

SENATOR ZANE: Mr. Kean, I thank you very much.

MR. KEAN: Thank you, Senator.

SENATOR ZANE: It is twenty-five after one; we will reconvene at five  
of two.

(Recess for Lunch.)

AFTER BREAK

SENATOR ZANE: I would like to call Mr. Ryan from South Jersey Gas Company.

(Mr. Ryan sworn as a witness)

Mr. Ryan, you have just given me this statement. If you would like, you can present it or if you would like us to just include it in the record and go back and highlight from it, it would certainly be acceptable to us if it is to you.

W I L L I A M F. R Y A N: That would be fine, Senator. I will try and highlight it. It is repetitious of many of the things you have heard at prior hearings and this morning.

I would start with pointing out that the severity of the winter last winter in the South Jersey area followed closely the outline that John Kean gave you before the lunch break.

We brought along a chart which I think shows you much more clearly the accumulation of the degree days that occurred in the winter season, by months. The chart reflects the 1975 accumulation of degree days by months and the 1976 degree day accumulation by months and the black line on each column represents the degree days in that month during our design winter year. So, you can see clearly that the early part of the winter, building up through January, had very serious omens for the remainder of the winter. In fact, that holds true for the month of February also, although the latter part of that month and a few days in the early part of that month moderated. The early parts of that month, during the periods of curtailment, were extremely cold.

I might point out that on the magic date, January 17th, the minimum temperature in Atlantic City, New Jersey was minus 10 degrees. I think those are some of the facts that people fail to recall. The month of February fell off quite a bit from the severity of the rest of the winter, resulting in the fact that the net degree days for the winter did not exceed our design winter, which is the coldest winter in our service territory's history, which happened to be 1969/'70, and that is the winter we continue to use to prepare our gas supply forecast against, in addition to what we more realistically expect in most winters, which is the normal.

I have in my statement reviewed the events and some of the causes of the curtailment on January 17th, the subsequent restoration on the 21st and then the subsequent curtailment again and restoration on February 10th.

Probably the most significant fact in there is that, as you heard this morning - Mr. Kean, I think, briefly touched on it - at the FPC hearings on the Houston Pipeline case, which occurred in January -- that was probably the case that kicked off the impetus for the Emergency Natural Gas Act and it was a case about sixty day gas which South Jersey, as well as others, had contracted for in the prior summer. The FPC was on the verge of saying that that delivery from the intrastate source could not take place. Houston was scheduled to start delivering that gas on January 1st. That did not take place in the light of the hearings that were being conducted and those hearings did not conclude until January 14th. It was significant that after the turmoil that that particular hearing created, the Houston Pipeline Company

started those deliveries on January 17th. There was also considerable concern on our part that other supplies which we had contracted for would be delivered without interruption. We looked at the Emergency Natural Gas Act as an assurance that that would take place. But, for about one week and one-half that was not the case, primarily because companies who had not made the prior summer commitments for this gas, were - such as the North Carolina companies - trying to gain access to that gas and, unfortunately, they did in effect, when that gas was removed from our control and placed into the system pool for Transco -- at that point there was not sufficient gas under our control to continue service to our industrial customers.

As I point out in the statement, as soon as that was restored to our control, after many threats on our part and potential legal action and many other things, we did restore service and we restored on the basis of not only had we regained control of that gas but that just as we had before the winter began, we assured ourselves that there was more than enough gas to supply our customers for the remainder of the winter, even if the month of March had been as severe as the design year.

I have included in here a percentage breakdown of the sources of our winter supply for this winter and what it reflects is basically Transco's daily flowing supplies, which they have reported to the FPC, which was subject to various news articles early this summer, and that is reported here, as it was reported in that report. I have reported storage gas from Transco flowing supplies - about 45% of the gas we would expect to use this winter. I reported that storage gas will be about 34% of our total winter supply. I have also indicated that that gas is now in storage and that represents more than a doubling of our storage capacity and gas available going into the winter season. As a matter of fact, we still have about one billion cubic feet of storage capacity on hand right now, which can be used to take advantage of any gas that might come along which we feel is economically desirable to purchase to further improve the winter season from a price point of view. We believe that supplies are now available and have been available since the early part of the summer to supply the gas. What we have been doing, and continue to do, is try to replace one source of gas with another if the price differs on the low side.

We have also pointed out that we expect Transco will file with the FPC a new Form 16, which is the basis of that prior news release, on October 1st. It is our expectation that Transco will even then show a further increase in supply compared to the one which was filed last March.

We have not included that increase in our supply projections. Later on I will get into the charts we have on supply, which is designed to demonstrate our flexibility, assuming Transco never increases our supply from the supply that is being delivered today and how we would satisfy both existing customers and new customers.

We are concerned that under curtailment plans, the continued attrition of our customers will have a detrimental effect on our overall gas supply posture if, as pointed out this morning, the base year were increased.

We are also concerned in South Jersey, since we were the most severely curtailed company in the State because of our high industrial profile, that if we have more gas than our current customers require, any sales we make to an industrial customer now just continues the same problem we had before.

We will be making those sales. In fact, there are operating conditions that will indicate that during the summertime an excess of storage will always be making some industrial sales. We are concerned, however, that we don't want to make as many as we might have to if we were in a posture where those are the only sales available and we couldn't start trying to convert some of that usage - the boiler fuel usage that our industrials would make of that gas - to firm residential and commercial usage.

Based on our industrial market, given the fact that natural gas at any given moment in time could be cheaper than fuel oil, South Jersey would not make a statement that we would ever refuse to accept gas. Right now, however, if we receive more gas and filled up our total storage pool, since the current price of high sulfa fuel oil in the industrial market is higher than our current price of natural gas, we could not sell it. So, there are economic considerations as well as the others that I have pointed out.

The question has been raised about who monitors Transco's projections and I know it has been raised from a governmental point of view in your minds. All I can say to you, from our point of view, is that we have independently visited Transco in each of the last three years, specifically with the idea in mind to hear their story, to visit their platforms, to look at their reserve data, and make an independent determination of what we thought their supplies would develop. We have no reason to believe that the chart that Mr. Bowen has shown to this Committee will not at least in part be produced because we know the wells are there, we know the pipeline will be there - and is about to be there - and we know that Mr. Bowen's own exploration company has gas as well as the advance payment gas that they have been committed to. But, maybe more importantly - again, going back to South Jersey's particular problems and profile - as much as South Jersey was hurt as gas was taken away, South Jersey is going to be the recipient of a more than pro rata portion of the gas as it comes back.

Let me try and explain that. When Transco signed all our contracts and we finally ended up, in the early 1970's, with the last formal contract we had, South Jersey's contract called for 124.3 million cubic feet a day. That represented 4% of the Transco system supply. That is what we mean by a pro rata curtailment plan. That is, all things being equal, if Transco had a pro rata plan, we would still be receiving 4% of the supply, regardless of the fact that it was less than our contract. We are receiving less than 4% now because our profile doesn't match up with other companies as well. On a comparative basis we had too many industrial customers. Other companies had perhaps 75% residential. We had 50%. So, we are currently receiving less than 4% of the system's supply. However, the next increment of supply that returns to the Transco system comes back to us to serve that industrial increment. And, conversely, we now have 50% industrial compared to the other guy's 25%. So, in reality, as of today every foot of gas that Transco adds to the system, we receive 8%, rather than 4%. So, Transco doesn't have to, from our point of view, make that chart. We benefit more so than other companies, including companies in this State, which I think is a fact that we have to put forward very strongly. At the same time, we don't want to lose it the same way.

We believe strongly that our indication to the Commission that we have the gas is our public interest responsibility. A utility's obligation is

to provide safe, adequate, and proper service and in this case we are pursuing the adequate portion of that phrase and underlying that is saying that we believe we can also provide that service on a safe and proper basis.

Our request to add new customers is really a request to offset attrition because, as the gas supply charts will show, we believe there are many reasons why we are losing industrial business in South Jersey, some of them are economic, some of them are the fact that the industry and the plants themselves are getting older. There is a reluctance to put additional investment into an older plant. But, in fact, we are losing and have lost plants. National Bottle, in January of this year closed their plant in Salem. At that one instant we lost one thirtieth of our annual sales - close to a billion cubic feet annually.

Our request to add new customers is 1.3 billion. So, even if we get that request, it will be a while before we offset the loss of National Bottle.

We are projecting on our charts that by 1980 our sales requirements of our customers, even with new customers, will be less than they are today and we are projecting that because we believe that the industrial community will be making other choices, both voluntarily-- Such as our problem right now with the fact that high sulfa fuel is permitted, therefore, our industrial customers are not, today, taking 100% of the gas they are supposed to take under their contracts with us; that has a rate impact on the rest of our customers and we work hard at that. They will also, however, be influenced by national legislation to convert to coal. So, we are projecting that with the 19 to 25 large industrial plants that we serve, taking 26% of our annual gas supply, over the next few years we are going to have to struggle very long and hard hours to offset just that switch in supply into the residential and commercial markets. Of course, our success is going to be partially a function of the local economy and we can't predict how well the housing market will come back in South Jersey. We see some improvement now but we still don't believe that the total market will be sufficient to offset what we expect will be a change or a decision to switch the fuel in an industrial plant.

We want to serve our industrials. As I pointed out, there are reasons why we can't always do that and there are reasons why they don't always take what we have available to them.

I think the only other point I would like to stress before I review the charts for you very quickly would be the point that has also been made before, that our neighboring states have never been restricted in offsetting attrition. We, in New Jersey, are relatively unique. I heard yesterday of one of the companies in North Carolina - one of the companies who did not have storage, who did not have emergency gas, who did not have supplemental supplies this past winter - just went into the financing market and in their prospectus has a chart which shows their residential growth going up. As far as we know, the only time they stopped adding customers was during a period in which they were appearing before the Federal Power Commission in January, trying to encourage the Commission to allow them to take away some of the emergency gas that we were fighting to keep. So, there is that problem and that has a very direct rate impact.

I think earlier this morning a question was asked of Elizabethtown, "What is that rate impact?" I think John Kean pointed out that it isn't immediate but I don't think he ever got to the point of how much and I am not sure what his number is, but we have cost of service studies as part of our current rate case, and in our filings with PUC we have projected that to be about 10% of our fixed cost that would be affected by our attritional loss by 1980, meaning that our remaining customers will pay about 10% more just because of the fact of attrition, no other reason.

We think that is important. We have talked about the base year being moved up and although it is not in prospect today, hearings are going on now in Washington which, in many ways, are an updating of the base year. South Jersey's posture is pretty strong in that case and we expect that we will see an improvement in our curtailment just from the results of reallocating customers on the system. And, the reason we will see an improvement is not because we have been cheating and adding customers but because some of the definitions of the priorities have been changed. Some of our industrial users gained a higher priority. Some of our multiple family apartment houses, which previously were excluded, are now included. So, there is a lot of gas there that we might become the beneficiary of.

Now, I will go to the charts. Let me point out again that in the charts we have nothing but a projection of what we are receiving from Transco today. No supply is on there that we don't have under contract right now and will be under contract during the years to come. We have no projection of Transco's most recent indication that this next year will be higher. We have no projection of the Mexican gas, which, despite a comment this morning, some of it will be delivered this winter. We have no projection of the fact that the Texaco Oil Company has been ordered to make up contracts they had with Transco and make up gas that they used in their refineries and will add 20 to 40 BCF of gas to Transco's system this winter. We have no projection of the fact that Transco is a party to the Alcan proposal and the most recent information that we have that certain near-term surpluses in Canada are going to be rerouted to that Alcan group in the very near future through existing pipelines in order to help them get off the ground and assist in financing while they work on the major pipeline; none of those are in there.

I will, at this point, move to the chart. What we have tried to show is, as I said, what our supply is today, projected to 1980. The top of the column represents what our sales requirements are. There are reserves that are not reflected on this chart here because you never project any more gas than you think you are going to need, for instance, particularly if you are projecting the use of higher priced gas. We don't project the use of propane more than we have to because it costs five dollars to make it. We don't think it should be made unless we need it.

As I say, the red line that I pointed out in my comments -- when you see the chart, without new customers the total sales requirements in each of those years keeps going down until it gets to the point where it is below current sales requirements.

We have on the chart our own gas from our South Jersey Exploration Company. That is not projecting any new finds; that is projecting when, where and how the reserves are capable of being delivered in South Jersey, depending

on FPC approval and a lot of other factors.

We have on the chart our 22 year contract with District Gas LNG, which has been moving into this State for the last two years through the terminal in Massachusetts through existing ships and existing contract. It has never really been abrogated in any fashion. There was a year's delay in the implementation of that program's deliveries, largely a construction delay. It is a four year project.

We are projecting a five year contract that we signed earlier this summer with Brooklyn Union for the delivery of 2 billion cubic feet of natural gas. It is available. We want to take the gas. When we don't want to take it, we pay a charge to them designed to recoup their fixed costs and it is in the order of 20% of the total cost of the SNG. So, it is a fine backup and it is a cheaper alternative to propane or any other high priced supply you might want to use in the wintertime.

Quickly, we have also shown the same chart with the addition of new customers and the fact that we are using the same supplies with no increases, under normal weather conditions. Sales requirements are still lower in 1980 than they are today, again because of the industrial erosion we don't think we will be able to offset.

We basically made the same chart under design winter conditions - 1969/'70 - the worst winter we have ever had in South Jersey, including the last. The same supply, design requirements under those conditions-- We still have reserves. We haven't used all of our propane plant; we haven't used all of Brooklyn SNG. And, again, this is projected out over four years. The design weather with new customer additions -- exact same results. The gas is there. It is in our hands right now, under contract and available to be delivered.

What about the forecast of increased supply? If you want to talk about the total that would be available, we have made up this overlay. If Mr. Bowen does what he says he is going to do - and we believe he will - that is what the gas supply in South Jersey will look like. It will be much more than 10 billion annually, more than our current sales requirements. And, I wish to point out that the best sales year South Jersey ever had was 41 billion cubic feet of gas, with 100% pipeline contract delivery.

I don't think there are any other comments that I want to make. We just feel that there is sufficient flexibility. Even if the supplies weren't there, we think our attrition is going to be so great that some customers have to be added. We think the rate impact of not adding customers is a very serious consideration to a distribution utility in New Jersey and serious consideration to the PUC. I think at that point I will leave it alone. I will turn myself over for questions.

SENATOR ZANE: Mr. Ryan, the comment - just to get this point at the outset - that you made to me when we met in my office several weeks ago and talked about the natural gas, that I relayed earlier -- the essence of it being that if, in fact, you do not get new customers there will be natural gas that you just won't use because you have that much available to you. Is that based upon the projections, using Bowen's curve, or based upon what you now know that you can put your hands on and that you actually have under contract available to you?

MR. RYAN: That is based on what we know we have now. Also, again, it is underlying Bowen's performance being there. This summer alone Transco had added 30 billion cubic feet to their system's supply.

Mr. Kean, I think, indicated that he and other companies have had to turn back gas this summer. It is my opinion that-- Although Mr. Bowen, I think, in his testimony indicated that the bottoming on the Transco system, as far as curtailment, would take place in '78, it is my opinion that it has now taken place and that when we look back at 1978 it will have taken place in 1977. But, it is based on what I see physically being delivered, physically being available to us now. But, it has to be gauged on the idea that we know, yes, Transco has "X" number of platforms being placed in the Gulf. We know that there is a pipeline going to be hooked to it. So, from the point of view of surety, I think that is a near-term surety, that additional supplies, over and above what we have right now, will be there.

SENATOR ZANE: But, I believe a further breakdown of that figure from Mr. Bowen shows a decreased production of natural gas but an increased storage that has been built up.

MR. RYAN: That is in the FPC report, not in his projections. Their revised FPC 16, which will be filed on October 1st, I suspect, will show that the flowing gas as well will be leveled.

SENATOR ZANE: I think the figures he gave us before when he testified were 32 billion additional cubic feet of gas available this year to their customers, of which 22 billion had been stored.

MR. RYAN: Right.

SENATOR ZANE: Which obviously means that less was produced during that -- or, less will be produced, that they were calling upon storage and not current production. I don't really know whether that makes any difference or not. But, it seemed to concern me at the time, that they were going to be producing less and drawing from storage. That bothered me.

MR. RYAN: Well, it has bothered us too, but I think the fact that the -- At the same time, you have to keep in prospective that they are filing with the Federal Power Commission a 12-month near-term report and last March they wouldn't project exactly what month the HIOS line would come on and they would not project the fact that certain platforms that they did connect this summer-- They have one platform in the Gulf right now - as a point of interest - that was connected this summer. It was not in FPC Form 16. It started out to deliver 100 million cubic feet a day. As of today - barring hurricanes - that is producing almost 350 million cubic feet a day. That was totally unanticipated.

SENATOR ZANE: I was of the opinion that curtailments - and I got confused with that this morning with Mr. Kane - were made by the company and then ultimately approved by the PUC, is that correct or not?

MR. RYAN: I guess I have a little different interpretation. I am not a lawyer. The PUC has an emergency curtailment plan which they have adopted and placed in force which the utilities would use in the event that they declared an emergency. I think that it is maybe a little semantic as to who declares what. But, certainly I would think the PUC would have had the legal right to say to us when we said, "We think we should curtail", they could have turned around and said, "Don't." In fact, in 1974 the PUC said that to

South Jersey.

SENATOR ZANE: Mr. Ryan, therefore the decision on the curtailment was made by the company?

MR. RYAN: Ultimately, it has to be our decision.

SENATOR ZANE: Okay. Do you agree with the statement made earlier by Mr. Kean about the availability of gas and the whole scenario about the one week interruption; if they could have had a crystal ball, etc.? Would you have had enough gas to have made it through without any curtailment?

MR. RYAN: Yes, sir.

SENATOR ZANE: What do you sell gas to an industrial user for?

MR. RYAN: For his purpose or price?

SENATOR ZANE: I am not sure I understand.

MR. RYAN: Well, you said, what do I sell it to him for. I am not sure whether you mean the price or what he uses it for.

SENATOR ZANE: Okay. No, the price.

MR. RYAN: Okay. The price is on the order of about 8¢ a therm plus whatever the current purchase gas adjustment clause is. And, he gets the same adjustment clause level as a residential customer.

SENATOR ZANE: What is the price that you charge to a residential user?

MR. RYAN: The residential user would be about double that for the base charge, plus the PGA.

SENATOR ZANE: Therefore, about roughly 16¢?

MR. RYAN: About that, right.

SENATOR ZANE: It has been suggested before that one of the reasons why industry was curtailed, shut down, or whatever, and not some of the residential - not that I disagree with that - but part of the reason was just the cost of going back and starting up the system, lighting pilot lights, etc., is that true?

MR. RYAN: I suppose that has been one of the arguments in developing the curtailment plan but the procedure for curtailment is by order of both the State PUC and the Federal Power Commission and the State's order lines up almost exactly with the Federal order.

SENATOR ZANE: How much natural gas was available to South Jersey under - whether it was under contract or what - the '76/'77 actual gas that you knew you could put your hands on. I am going towards the same point I raised this morning with Elizabethtown, the 35 billion that they had available. What is your availability? What was it in '76 and '77?

MR. RYAN: Do you mean just the winter or do you want to take a fiscal year?

SENATOR ZANE: The year, yes.

MR. RYAN: Okay. Well, our annual sales are in the order of 30 billion cubic feet, depending upon the weather.

SENATOR ZANE: Is that what was available to you?

MR. RYAN: Yes.

SENATOR ZANE: 30?

MR. RYAN: Yes - not all from the pipeline. You can see the different colored sources. The buff colored is strictly the natural gas - Transco natural gas - and the '77 year would roughly correspond to what you would see is our

experience in a fiscal year covering the '76/'77 winter.

SENATOR ZANE: How much did you use in that same period of time?

MR. RYAN: We used everything we had available to us. The only item-- You know, we would not have continued purchasing new supplies because we didn't need any more as the weather moderated. I am in that position now. If you set a goal, for instance, for how much gas we needed this coming winter and said over and above what you say your requirements are I want you to have 10% more, I could buy it. We could go out now and buy more gas than we are showing on those charts, or have available for this winter.

SENATOR ZANE: But in the winter of '76 and '77, your availability was the 30 billion and the use was the 30 billion, therefore, we would have to conclude that but for a curtailment you would have been out of gas, is that right?

MR. RYAN: No, sir. No, sir, because part of the use of all of the gas that was available was to leave some in storage. When I say that we had more gas, the fact is that when we finished the winter, we still had 1.5 billion cubic feet of gas in storage.

SENATOR ZANE: Out of 30?

MR. RYAN: Out of 30.

SENATOR ZANE: All right. Maybe you can tell me from your charts -- that which was 30 billion cubic feet available will be how much this year? What will that figure be?

MR. RYAN: That figure is going to be, based on the weather, roughly about 30 billion, 31 billion, 32 billion.

SENATOR ZANE: And those additional customers that you want to tie into and bring into your system, what percentage of that would they use - of that additional 1 billion cubic feet?

MR. RYAN: Okay, at this point in time, we are not going to have any new customers this winter season. But, we are talking about '78/'79 and that has been our posture all -- since the beginning, that we would never make it. We are asking to add about 1.3 billion cubic feet of annual sales and we think this is almost virtually identical to what we believe our attritional loss on an annual basis is going to be, regardless of new supplies.

SENATOR ZANE: Why has it been said and maintained all along by the Public Utility Commission that South Jersey - I don't know whether they are really saying South Jersey Gas or South Jersey as such, but as far as getting gas I guess it is the same - is in the worst shape, in that end of the State?

MR. RYAN: Well, I guess that is relative to the curtailment posture. I don't think South Jersey Gas Company or its officials have ever said we have been in super shape, but we haven't said we have been in terrible shape either. We had a financial problem in '74/'75 with an instantaneous high level curtailment, requiring us to get some dollars which we didn't have in our hip pocket. But, certainly, we have the highest curtailment from the natural gas pipeline of any company in this State. Let's put it this way, we absorbed that because we are no longer serving our interruptable boiler fuel requirements and our industrial customers.

SENATOR ZANE: Why was the curtailment to South Jersey from the pipeline worse than--

MR. RYAN: Higher?

SENATOR ZANE: --or higher than to the others?

MR. RYAN: Because of our industrial profile. We serve a much higher percentage of industrial requirements than any other company in the State.

SENATOR ZANE: Do you believe that the problem with natural gas today is a matter of economics - getting a higher price for the gas?

MR. RYAN: I am not as "bullish" on that as a lot of other people. I think \$1.46, \$1.75 is a reasonable price. I think the 16¢, 24¢, 52¢ scenario is ridiculous. At a point in 1970 having the price at 16¢, which was set 20 years prior for a contract, and expect that same producer to turn around and drill for more was silly. In fact, even further than that, the Federal Power Commission had never ruled on those contracts. Back in the early '70, I recall, we made a study and we decided that if the Federal Power Commission worked around the clock with all their staff for 24 hours a day, they couldn't approve all of the existing gas supply contracts by the year 2,000. And, this was on a contract-by-contract basis.

But, they have really paid attention to the price. I think \$1.45 and \$1.75 is attractive. I do think the producers are taking a bad shot because all of this gas out in the HIOS area, that was drilled for and found when the Federal price was 52¢. So, there are people that feel there is an economic incentive needed. The prices of rigs and everything else are going up, wildly. So, when you are talking about \$1.45, you are talking about what the guy will get five years from now when he finds something and he starts to drill today. His costs are different. Five years ago 52¢ probably gave him a decent return. Today he is saying no and part of the reason is because there is so much activity putting pressure on the platforms and everybody is paying higher prices for the equipment. So, I am not too upset with \$1.75. I agree with the National Energy Concept of reregulation rather than deregulation, I guess, basically. I guess that is about all I would like to say on that subject.

SENATOR ZANE: Do you feel if the price were increased there would be a lot more gas available - for the record?

MR. RYAN: Yes, because people who are not anxious to go drill-- What I am saying is, there are a number of people who, basically, that is part of their business and part of their annual budget - to drill. If the price is better, the corporate decision-making on an economic basis will say, "At a higher price, we can probably support a higher budget." Plus, other people who may have been discouraged or who have not previously had the financial wherewithal may very well find it attractive to enter the market.

SENATOR ZANE: So, I guess we would have to say that it is not an immediate danger of shortage of natural gas, it is just that it is going to have to seek a higher level, dollarwise, and then, in fact, it will flow.

MR. RYAN: Well, I want to add one more caveat to that. The other point is - and I think the point that is forgotten by a lot of people - that all the projections-- You can talk about natural gas shortages on a near-term/ long-term. Natural gas shortage on a near-term is like the Parkway traffic jam because we keep saying, "Look, we bought all the gas we think we are going to need. Now, if you want us to have more reserves than we think we have, we will get them but in our judgment, we are not sure that is

economically feasible for our customers."

On the long-term, the part of the equation everybody forgets is that you are comparing against demand when you talk about natural gas shortage. You talk about the National Energy Plan. President Carter usually ends up saying, "Hey, look, this is not a no-growth policy. We are projecting a shortage of oil and gas against a demand which currently is increasing at the rate of about 4% a year, which we are trying to scale down to 2%." That is a very important element in trying to understand what people are talking about when they are talking about shortages.

SENATOR ZANE: Would the South Jersey Exploration Company benefit if the price of gas increased at the well head?

MR. RYAN: Benefit? Any gas that they found that was subject to that price, they would receive for that gas. Whether or not South Jersey Exploration would benefit would depend upon the relative success ratio of our risk. We have four producing wells on an investment of about \$5 million right now and we are a long way from being a high profit situation.

SENATOR ZANE: You have got to make out better if you are going to explore at all. You just have to make out better if you are getting a higher price if you find anything.

MR. RYAN: Better than we are now on what we found, right. But, you have to find it first and you have to put the money up first.

SENATOR ZANE: Is South Jersey Exploration Company a publicly owned company?

MR. RYAN: No, it is not. It is a subsidiary of South Jersey Industries.

SENATOR ZANE: Are you an executive in South Jersey Exploration Company?

MR. RYAN: No, I am not.

SENATOR ZANE: Is the Chairman of the Board of South Jersey Gas -- is that the main company?

MR. RYAN: The major company in the group is South Jersey Gas, right.

SENATOR ZANE: Is the Chairman of the Board of South Jersey Gas an executive of South Jersey Exploration Company?

MR. RYAN: Yes. Let me throw out one thing. Again, I guess the only thing I can contribute at this point is point out some of the problems that perhaps are not apparent on the surface. You raised the question about exploration. Right now, the only reason that we can afford to be exploring and were exploring with stockholder dollars is that we can spread our losses - our dry holes - over the life of our reserves, so that we write them off per unit of production. The Accounting Society, before the end of this year, will probably change the accounting rules and will make it impossible to do that. They will probably force dry holes to be written off currently. And, if that is the case, it will be very difficult, I think, for a small distributor, such as ourselves, to absorb that kind of current income problem - as long as you can't predict what your success ratio is. We had 34 dry holes before we had a hit.

SENATOR ZANE: You see, really, I get the feeling after a while that what we really should be doing is, instead of looking at corporate structures which can make something very neat and tidy and service one area, I really think we have to look at a larger picture and see the relationship between

a utility company and a company that is exploring - a utility company that is saying that if gas reaches a higher price more gas will be available when, in fact, we find that that is one and the same person making the same comment, when you remove the legal structure to it.

MR. RYAN: May I respond to that, Senator?

SENATOR ZANE: Sure.

MR. RYAN: I understand your thrust and your question. From my point of view, as a utility executive - and particularly in South Jersey - we have been criticized incorrectly, I believe, for not having other supplemental efforts. Exploration is one of those and we have had \$5 million in that program before we got a buck out of it. At the same time, as John Kean pointed out, we are buying \$5 SNG. Now, our corporate policy - if somebody were to come into our offices and read the minutes of our board meetings or whatever they wanted to do - is that we are in the business not to make money but to find gas for the utility customers.

Five years after the fact, I am sure, yes, you can look back and say, you know, there is an inconsistency in the position. All I can try and express to you is that our corporate intent is not the same as Exxon with regard to our exploration projects. Our business is the utility business of distributing natural gas because of our own self interest in that. We felt it was desirable and important when there was a lag in the drilling to put dollars into that to support the market. It is the same thing Transco did. Transco was not in the producing or exploration business prior to four or five years ago.

SENATOR ZANE: Senator Vreeland.

SENATOR VREELAND: Just one or two questions. I guess, Mr. Ryan, from the chart I got the feeling, and I think you said, that as far as the supply of gas is concerned, for your company you felt that it was more than adequate, more than you are using at the present time, isn't that right?

MR. RYAN: That's right.

SENATOR VREELAND: And then you also said that you have under contract supplies that you don't even need unless you had new customers, is that right?

MR. RYAN: I don't think I quite said it that way, but I said that we will be getting supplies that would offset the new customers.

SENATOR VREELAND: That would, what?

MR. RYAN: That will take care of the new customers - primarily increases of deliveries from Transco.

SENATOR VREELAND: Yes. And, if you don't get the new customers, or if PUC doesn't allow you to take on new customers, you won't use the gas.

MR. RYAN: In our case--

SENATOR VREELAND: The additional supplies.

MR. RYAN: In our case a lot of it will be used but the problem in our case is because we have an awful lot of these industrial boilers sitting out there that are now fueled by fuel oil. So, we will have a market, assuming the price is competitive with fuel oil at that point in time.

SENATOR VREELAND: But, didn't you lose some industries that no longer use gas?

MR. RYAN: Well, I did comment about National Fuel closing for one billion cubic feet, that's right.

SENATOR VREELAND: Right.

MR. RYAN: We expect our sales for next winter will be less than they were for last winter, given the same conditions, right.

SENATOR VREELAND: But, you just said, I think, that there are some industries that are contemplating switching to oil.

MR. RYAN: That's right.

SENATOR VREELAND: Didn't you just say that?

MR. RYAN: I said that there are users in the plants of our industrial customers that can use fuel oil and some of those customers who have been on fuel oil for a long time, if we came along and offered them gas, would have to make an economic decision, based on the competitive price of the fuel oil.

SENATOR VREELAND: Well, then, could you furnish those customers with gas, where they are now using fuel oil for a given operation?

MR. RYAN: Yes.

SENATOR VREELAND: You could?

MR. RYAN: Yes, because historically they were served by gas and they interrupted in the wintertime.

SENATOR VREELAND: That's interesting. I didn't know that.

MR. RYAN: They have combination burners.

SENATOR VREELAND: Yes. I understand what you are saying.

MR. RYAN: Let me give you the magnitude of that. We are sending out today probably about 50 million cubic feet of gas to our firm customers. We are probably putting about 20 or 25 million cubic feet in storage. Our total Transco contract, if at 100%, was 124.3, our peak day was 195 million, we have customers out there, if they wanted to burn gas, that we could turn on this afternoon and burn 100 million cubic feet of natural gas every day. But, they would be burned in places like the Deepwater Electric Generating Station of Atlantic Electric, a big boiler at Owens, Illinois in Bridgeton, under the stew pots at Delmont. These are inferior uses and that is going to happen anyway because in the summertime that same supply is going to be there as it is in the wintertime and you know what happens with the heat. So, to the extent we exceed our storage we are going to serve that kind of load. What we are trying to say is, let's not service them as much as we used to because that hurt us before, and let's put it into the higher, better uses of a premium fuel in the residential/commercial market.

SENATOR VREELAND: The point was made, I think by Mr. Kean that - at least I understood it that way - even though you have it under contract - and I got that impression from the way he described it - that doesn't really mean you have it at all. Because he said that last winter when it was so cold and there was a crisis, the gas that they had in storage under contract was taken by somebody else. Wouldn't that happen again next year if we had a cold winter?

MR. RYAN: It could happen under a number of different scenerios. I think what he was talking about was the storage.

SENATOR VREELAND: Yes, it was. That's right.

MR. RYAN: Now, let me just -- that degree day chart I had up there, the real point is that in October, November, and December, where you would expect Atlanta, Georgia not to require heat, they did require heat and it was required along the system. Everybody who had gas in storage was using it. They never all used it at the same time in any year prior. And, we trade on that. That

is part of peaking.

SENATOR VREELAND: Right.

MR. RYAN: You expect that in Atlanta, Georgia it is going to be warm some days and they are not going to want all their gas. What happened, come January was that a certain storage field - and that happened to be, primarily, Texas-Eastern storage, not Transco - had to cut off the takes from that storage because they were down at the lower pressure limits, because everybody, for the first time, had used up what they were entitled to take, coincidentally.

But, even when they design the storage field, they don't expect that everybody is going to use it in that fashion. That is just improbable or inconceivable.

SENATOR VREELAND: So, in essence, really, if it happened again - the kind of temperatures that we had last winter - the same thing could happen as happened last year.

MR. RYAN: Let me put it this way: Our planning has been changed for this winter by virtue of those events that took place last winter. Our scheduling of supplies is going to take into consideration what happened last winter. From our point of view, we were one of the ones that found out that the 15 days of storage we had on the Transco system was, in fact, base gas at this point because the guys that had over-used their storage left us holding the bag.

SENATOR VREELAND: Right.

MR. RYAN: That did not, however, impact-- It obviously had some impact on the curtailment but we never were shorted on a daily take from the storage field. We were told, at a given point, that it could happen if things continued the way they were going.

SENATOR VREELAND: Thank you.

SENATOR ZANE: Senator Wiley?

SENATOR WILEY: No, I have no questions. Thank you.

SENATOR ZANE: Senator Bedell?

SENATOR BEDELL: No questions.

SENATOR ZANE: Mr. Ryan, thank you.

MR. RYAN: Thank you. (see page 1x for Mr. Ryan's complete statement)

SENATOR ZANE: Mr. Richards, please.

(Mr. Richards sworn as a witness)

J A C K R I C H A R D S: Senator, I would like to relay the apologies of our President, W. Daniel Williams, for not being here today. He did have a previous commitment and he was unable to attend, so I am attending in his place.

My name is Jack B. Richards. I am Vice President of Operations and Engineering for New Jersey Natural Gas.

I have a relatively brief statement to make here, so I might as well read it.

New Jersey Natural Gas Company serves approximately 220 thousand customers in five counties of the State. Our Northern Division comprises about half of Morris County; our Central Division covers all of Monmouth and Ocean Counties and a small portion of Middlesex County; and our Southern Division serves all of Cape May County.

We receive our Northern and Central Division supplies from two suppliers: Algonquin Gas Transmission Company and Texas Eastern Gas Pipeline Company and our Southern Division supplies are received from South Jersey Gas Company.

In the case of Texas Eastern - who supplies approximately 88% of our total purchased gas - and Algonquin, curtailments of deliveries have been experienced since December of 1971. Generally speaking, these curtailments increased gradually until they reached a peak in 1976. However, in the latest Form 16 filing made to the FPC, both pipeline companies have projected a decrease in curtailment from the 1976 level. I might say that Texas Eastern, in the Texas Eastern report alone, indicates that we will be receiving about 2 1/2 billion cubic feet more than we have in the last couple of years.

Because of these curtailments, the Company has not added new load or new customers since 1971. In the interim, however, several LP, which are propane air peak shaving plants, and two LNG peak shaving plants have been added to the system to offset the effect of the decreasing pipeline supplies. In addition, the Company has participated in a project to import LNG and has entered into exploration and development activity, both with the intent of obtaining supplementary supplies of gas.

Because the LNG project has not materialized, as a result of prolonged regulatory delays, the Company has indicated its intent to participate in a major SNG undertaking by Transco, and an additional underground storage service by Texas Eastern.

The Company has made a vigorous effort over the past few years to encourage conservation on the part of its customers and we estimate that the effect of such efforts has resulted in an annual decrease in consumption of approximately 8%.

It is anticipated that the combined efforts outlined before this will enable us, within the next few years, to resume a customer growth program. Such an eventuality would be further enhanced by any production that might ensue from the Atlantic Outer Continental Shelf.

In the meanwhile, the Company is confident that it will be able to meet all of its firm customer requirements over the foreseeable future.

SENATOR ZANE: Mr. Richards, it is my understanding that your company did not petition the PUC to take on new customers.

MR. RICHARDS: Not in the recent generic hearing, Senator. However, the picture is rapidly turning around for New Jersey Natural, for many of the reasons outlined by the two other companies today.

SENATOR ZANE: Did your company also do something rather unique with their customers as to refunds or something?

MR. RICHARDS: Well, that is quite apart from the supply situation. This results from our pipeline suppliers filing rate cases before the Federal Power Commission and the Federal Power Commission gets months to respond to such a filing and, in most cases, after a thirty day period the FPC suspends the filing for a period of five months, at which time if the case has not been adjudicated the rates go into effect under bond and then after the case has been completed and there is any reduction in the rates that they filed, refunds are made to the companies for the period affected and then the new rates go into effect.

In this particular case, it was a rather large refund that came back

to the company and we coordinated our efforts with the BPU to refund this to our customers, which will start in the month of October for usage in the month of September.

SENATOR ZANE: Is that because the rate that you were asking was in excess of what was--

MR. RICHARDS: Well, it wasn't the rate that we were asking for, Senator. It was Texas Eastern's rate that they were seeking.

SENATOR ZANE: I see.

MR. RICHARDS: It was the rate they were seeking and we were paying the higher rates to them until that case had been settled.

SENATOR ZANE: Is that refund then really the basis of the fuel adjustment cost? Is that what it is? It is from that?

MR. RICHARDS: No. Actually, the refund is not going to be done through the purchased gas adjustment mechanism. But, the purchased gas would be reflecting these increases that come to us - rate cases and pipeline PGA's that come to us each and every month. They are reflected as pass-through increased cost of gas to us and to our customers.

SENATOR ZANE: Do you too have an optimistic view of the availability of gas in the future if the price should rise?

MR. RICHARDS: Yes, I do. We just attended a conference in Pennsylvania recently with our supplier, Texas Eastern, and they outlined to us what the five years ahead looked like. We were rather heartened to hear that the years '78, '79, and '80 will probably be about the same as the '78 year, which is forecast to be a better year. This is the year to which I referred when I said we were getting an extra 2 1/2 billion cubic feet.

The fourth and fifth year, they show a downward trend in the availability of supplies but they do not include in those two years plans that would offset those declines, such as the Mexican Gas situation and other new forms of gas that may come into being.

SENATOR ZANE: If the price were to rise, would you see us a long time from an actual crisis on gas?

MR. RICHARDS: If the price were to rise?

SENATOR ZANE: If the price were to rise substantially, would you see us a long way off from an actual crisis of a shortage of the commodity itself - gas?

MR. RICHARDS: I think that the price must rise in order for the supplies to come in in the future.

SENATOR ZANE: Therefore, if the price rises, there will be gas in the future?

MR. RICHARDS: That is the way it has been going and it seems that that's is the way it must continue - that way. I think it has been put forth before today that the people in the business of finding new gas feel that they have to realize a return on their investment in order to come up with it.

SENATOR ZANE: Does your company have a subsidiary that is in the exploration business?

MR. RICHARDS: Yes, we do. We formed it last year. It is called New Jersey Natural Resources Company. We are relatively new in the exploration field as compared to the other three companies in the State.

SENATOR ZANE: Do we find the same management for the most part?

MR. RICHARDS: Yes.

SENATOR ZANE: In that exploration company, as we do with the utility companies?

MR. RICHARDS: Yes, I am an officer in it and Mr. Doolan, who is another one of our Vice Presidents, is active in it and our General Counsel is active in it.

SENATOR ZANE: Are you the smallest of the utility companies in this State?

MR. RICHARDS: No, we are not. Customer-wise, we are the second largest gas company serving the State and our sales range around thirty-two billion cubic feet a year. So, sales-wise I think, also, we are equal to or bigger than the other two.

SENATOR ZANE: What type of profits are projected with your exploration company if, in fact, the price were to go to the \$1.75 figure?

MR. RICHARDS: I wish I knew, Senator. We haven't gotten into that type of projection. Actually, what we are most concerned with is finding gas and bringing it into the system at this point.

SENATOR ZANE: Have you found gas at this time?

MR. RICHARDS: We have entered into a joint venture with Elizabethtown Gas's subsidiary, National Exploration and there was one well that came in recently that showed signs of producing gas.

SENATOR ZANE: Are you producing that gas?

MR. RICHARDS: No, it will be quite a while before we are able to bring that to market.

SENATOR ZANE: Are you waiting until the price goes up?

MR. RICHARDS: No.

SENATOR ZANE: That is not a consideration in the fact that it is not producing?

MR. RICHARDS: No, it takes time after driving test wells to get the well situated, the lines connected up--

SENATOR ZANE: How much time, sir?

MR. RICHARDS: I would say that within the next three months there is a good chance we will be bringing some of this gas into our system.

SENATOR ZANE: Whether or not the price increases?

MR. RICHARDS: Whether or not the price increases.

SENATOR ZANE: Senator Bedell.

SENATOR BEDELL: I think you have anticipated most of my questions. One of the questions I want to ask you concerns the fact that you do have pipeline suppliers other than the fact that you are involved in it yourself - Texas Eastern and others. Do they have any substantial holdings in your company or does your company have any management interrelationship with those pipeline suppliers?

MR. RICHARDS: No.

SENATOR BEDELL: And New Jersey Natural Gas is an investor-owned utility?

MR. RICHARDS: Yes.

SENATOR BEDELL: New Jersey Natural Gas is a member of the American Gas Association.

MR. RICHARDS: Yes, we are.

SENATOR BEDELL: Does the company participate, to your knowledge, in any way in the gathering of statistics by the Committee on Natural Gas Reserves?

MR. RICHARDS: No, we are not directly involved in that.

SENATOR BEDELL: It seems to me, through what we have been able to establish so far - and I don't know if I have the terminology correct - that there are three different divisions here, one is the producer, one is the pipeline supplier, and one is the distributor.

MR. RICHARDS: That's right.

SENATOR BEDELL: Is this substantially so?

MR. RICHARDS: Yes.

SENATOR BEDELL: To your knowledge -- in your knowledge of the problems of the gas shortage and the arguments for deregulation, who is most affected by that, actually? I know everyone is affected by it, but who is primarily the one we are talking about? Is it the producer?

MR. RICHARDS: Well, that is where it starts. The incentive has to be - the price incentive has to be there for the producer to come up with the gas. The pipeline is the middleman and passes what costs he faces on to the distributor. The distributor and their customers are the ultimate ones to absorb the costs.

SENATOR BEDELL: Thus far, we have been speaking mostly to the distributors, have we not?

SENATOR ZANE: Yes, to the utility companies.

SENATOR BEDELL: I have no further questions.

SENATOR ZANE: Senator Wiley.

SENATOR WILEY: Yes, Mr. Chairman, thank you. Mr. Richards, I think you and I have spoken by phone about the Leslie Company, Automatic Switch, and a few others--

MR. RICHARDS: I believe we have.

SENATOR WILEY: Back in the time of the crisis. Thank you for your help. I guess you are going to keep them running this year, are you?

MR. RICHARDS: We certainly expect to, sir.

SENATOR WILEY: The exploratory company that you have is structured in what way? Is it a wholly owned subsidiary?

MR. RICHARDS: It is a stockholder sponsored subsidiary.

SENATOR WILEY: You mean a parallel company?

MR. RICHARDS: No, it is a subsidiary of our New Jersey Natural Gas Company.

SENATOR WILEY: 100%?

MR. RICHARDS: Yes.

SENATOR WILEY: Does that bring it under the supervision of the Public Utility Commission? Do you make filings there and the like because of the ownership?

MR. RICHARDS: Not to my knowledge, no.

SENATOR WILEY: A fuel adjustment clause -- I heard it referred to. I don't quite get the picture. Here you are taking a commodity and distributing it without processing it, right?

MR. RICHARDS: We are distributing the commodity without what?

SENATOR WILEY: Without processing it. You are just distributing

what you get.

MR. RICHARDS: That' right. We are receiving the product, of course except for supplementary fuels, which we have within the system to help us out on peak days, which we process ourselves.

SENATOR WILEY: Unlike an electric utility that might get a pile of coal and burn it and generate electricity. In that setting, which I have just described, I understand the fuel adjustment clause.

MR. RICHARDS: Yes. There are actually other forms though. Our peak shaving fuels would be propane and liquefied natural gas, and so forth. Other than that, pipeline gas is just received by us as a commodity, as you say, and distributed.

SENATOR WILEY: Fuel adjustment clause normally means the adjustment in the cost of the fuel that it takes to produce the product that you sell?

MR. RICHARDS: That's true. We call that a purchased gas adjustment rather than a raw materials adjustment, Senator.

SENATOR WILEY: You mentioned the expansion that you project for '78 and then for '79 and '80, an expansion that is the reverse of what you saw since 1974. What reason do you assign to that?

MR. RICHARDS: Well, I believe that we are going to have more gas availability to us. It started with the pipeline turing their forecast around a little bit. Instead of having less supplies each year, now we have come up with a projection which reflects greater supplies from them. In addition to that, we have other things taking place. We have loss of customers by attrition. Our customers have responded extremely well to our pleas for conservation. And, as I say, right now we feel that is going to run around 8% annually. We are studying now some retrofit devices that can be put on gas appliances that ultimately we expect to reduce consumption of the customers. We are likely to be involved in an insulation program. We hear a lot about that nowadays. All these things together are going to give us more availability of natural gas and for us to stay where we are now, as far as being able to sell what we have, we are going to have to take on additional loads, or increase customers - pretty much along the same arguments as the other two companies that you heard today.

SENATOR WILEY: Do you do any storing within New Jersey?

MR. RICHARDS: Not within the State. As John Kean mentioned this morning, we were once engaged with South Jersey in anchor gas and trying to find such a structure, but we were unable to come up with one. Since that time, we have been taking most of our underground storage from the pipeline facilities.

SENATOR WILEY: Have you increased that in recent times?

MR. RICHARDS: Yes, we have increased it over the amount of storage we had last year by 7.3%.

SENATOR WILEY: Something similar to what was described in the case of Elizabethtown?

MR. RICHARDS: Yes. In our case, why, it happens to be in Western Pennsylvania. That is where we obtained this increase.

SENATOR WILEY: Do you know, offhand, what proportion of the industrial energy consumed - or, industrial-commercial energy consumed - in New Jersey is supplied by natural gas?

MR. RICHARDS: I really can't answer that statistic. I don't have it at my fingertip.

SENATOR WILEY: Is it a big chunk?

MR. RICHARDS: I imagine that it is a considerable percentage, yes.

SENATOR WILEY: You are not putting on any plants now? If somebody located up in Northern Morris and wanted to use gas, you wouldn't talk to them?

MR. RICHARDS: No. One thing that we have done, in view of this additional gas that we see coming up in a year's time, we did file with the Commission a limited term firm rate for our existing customers - our existing industrial customers, I should say - who have wanted additional gas and we have not been able to supply them because we have been under orders of the PUC not to. The PUC reasoned they foresaw that if we did not sell this gas to priority type customers, it would be finding its way to low priority uses, such as boiler fuel, and so forth. So, they did approve this rate. Now, this will only help our existing customers. We are still under an order from the PUC that we cannot take on new customers - new industrial customers.

SENATOR WILEY: Do you differentiate at all among customers on the basis of what they are using the energy for - that is for operating a process as against heating a plant?

MR. RICHARDS: We try to now. We try to channel what gas we have to priority uses.

SENATOR WILEY: Thank you very much, Mr. Richards.

SENATOR ZANE: Mr. Richards, unless there are further questions, I thank you.

SENATOR BEDELL: Incidentally, a figure I have here, Steve, I don't know if it applies to New Jersey, but, nationally, natural gas accounts for 30% of the energy needs for the nation.

MR. RICHARDS: I was aware of that figure but I wasn't sure of the one for the State.

SENATOR WILEY: Is that industrial?

SENATOR BEDELL: That's all it says, just right across the board.

SENATOR ZANE: Thank you, sir.

Mr. Morell, please.

(Mr. Morell sworn as a witness)

DAVID MORELL: Senator Zane, I have a prepared statement, which has been provided to the Committee. With your permission, what I would like to do is have it introduced into the record and attempt to highlight some of the critical features of the presentation.

SENATOR ZANE: Very good. Might I just indicate at the outset that because of commitments with some of the Committee members, including myself, we are going to terminate today at around 4:00. Bearing that in mind, fire away.

MR. MORELL: Senator, that will be fine with me. Thank you.

Indeed, it is a complex subject that we have been dealing with - that you have been hearing about. I have no special knowledge to share with you regarding the availability of natural gas supplies to New Jersey. We have been hearing a great deal about supplies. You will have to rely on testimony from others for insights into supplies. What I would like to focus on is three other areas that I think are critical to forming a policy with respect to new

customers and, more broadly, with respect to where we are going in terms of natural gas policy and energy policy in the State of New Jersey.

These comments -- Two of the three points relate not to supply but to demand. First of all, the need to base our policy decision on gas consumption patterns rather than on supply availability alone.

Second, the distinctions which I feel are critical in the uses of gas and in users of gas, and,

Third, on the supply side, but from a different perspective - the potential availability within the State, within New Jersey, of a highly efficient source of additional natural gas, refinery gas.

Let me turn to the question first of end uses and end users. Our existing priority allocations schemes, both Federal and State, deal primarily with categories of end users, residential, industrial, commercial, electric utility, and so on.

That is fine as a start, but in my view it does not go far enough. What we find instead is that some of the uses of gas within the industrial sector are very high priority, though the industrial sector itself is in the lower end of the priority scale.

Similarly, some uses in the residential sector are of low priority, though the residential sector itself is considered at the highest level of priority.

For example, in New Jersey, several years ago - the last date for which complete data were available - the industrial sector in New Jersey consumed in excess of 66 billion cubic feet of gas. Of this total, about 22 billion cubic feet, or a third, was in high priority uses in the industrial sector, although industry as a whole receives a low priority.

I have data inserted in the record on this use of gas within the industrial sector.

Similarly, as I noted, residential users - a few of them - are of low priority - decorative lighting outdoors, heating of swimming pools, and so on. This fact has already been recognized by the New Jersey Public Utilities Commission, which has taken steps to curtail such uses on the part of new users. Nevertheless, relatively small amounts of gas were involved.

Most priority allocations distinguished between firm contracts and interruptable contracts. Yet, some users with interruptable contracts unfortunately may need their gas for high priority end uses. Whereas, many firm contract holders use the fuel in low priority purposes. What I am saying, in sum, is that we need to focus on the use of the gas more than on the user if we are going to develop a scheme to insure that we made this precious and scarce fuel available for our highest priority purposes.

Let me spend a moment in the issue of refinery gas, which is gas produced - as its name suggests - in refineries, produced as a by-product of the refining process. Only one of our four gas distributing utilities, Public Service Electric and Gas, currently receives refinery gas in New Jersey. It happens to be produced as a by-product of the Exxon refining operations at the Bayway Refinery in Linden. This source of gas began to be provided from Exxon to Public Service in 1970. In the 1975/'76 reporting year of the Public Utilities Commission, this source of gas alone provided over 11 billion cubic feet to Public Service and was, in fact, the second largest source of gas for

Public Service in that year, the second after pipelines - greater than LNG, greater than SNG, greater than any of the other sources of gas in that reporting year. It was also relatively inexpensive compared to some of these other supplemental supplies.

I suggest that this kind of gas - refinery gas - offers attractive possibilities for further use in New Jersey, if it were made available from other refineries located elsewhere within the State, both in the Northeastern sector of our State and in the Philadelphia/Delaware River area. In fact, this could be one way for New Jersey to take advantage of the fact that 34% of the refining capacity on the East Coast is located within our State. Today, instead, most of this refinery gas is used on-site in the refineries, normally as boiler fuel or, instead, is indeed flared.

I have some details in the record on some issues related to refinery gas.

Let me turn now more directly to the point at hand - new residential use of gas. I believe that residential use of gas is indeed a high priority use. I document in the testimony several reasons for this, which sounds like a sales pitch for gas from some years ago.

A decision not to permit our new homes to be heated with natural gas, because in my view it is indeed in short supply, cannot be made in a vacuum. What are the alternative fuels with which we propose to heat these homes? What are the energy efficiencies by which this will be accomplished? What are the implications? Oil and electricity are the two obvious alternatives. Each of them poses, in my view, serious problems of economics and energy efficiency. In fact, because of this, I believe that electricity - electric resistance heating - ought not to be used, though this has been the principle alternative for our new homes during the recent period of curtailment of new residential customers.

Assessment of these issues, consumption patterns, end uses and end users, and refinery gas, provides the context within which to judge whether or not new homes should be heated with gas or with another fuel. Until solar heating - perhaps in a hybrid system with electric heat pumps - becomes fully cost competitive in New Jersey - which, hopefully, will be sooner rather than later - I continue to believe that home heating from natural gas is indeed a high priority use for this fuel and a preferable alternative to other ways to heat our new homes. This additional use of gas could be accomplished and, in my opinion, should be accomplished through a trade-off with further conservation of natural gas elsewhere in New Jersey's pattern of overall consumption. That is, by curtailing at least the same amount of low priority consumption, low priority industrial uses and, hopefully, even more - we can shift this gas to high priority uses and, thus, insure that our overall natural gas supplies are no less adequate to meet our State's needs. In other words, maintaining at least a balance by curtailing on at least a one-for-one basis low priority uses of gas in the State through regulatory action, while, in exchange, allowing hookup of new customers for high priority - residential users.

In this sense, through effective conservation programs, balancing supply and demand, we can have an adequate supply of natural gas within New Jersey for our highest priority uses. Thus, perhaps ironically, in a time when I believe there are overall natural gas shortages in both the United States and in

New Jersey, I do recommend that new homes in this State indeed be heated with natural gas because I see it as a high priority use. At the same time, however, I would urge that commensurate, if not greater, low priority uses of gas within the State be curtailed by State regulatory action and that the possible expansion of our supplies of refinery gas receive priority attention, either by your Committee, by other committees of the Legislature, or by the new Department of Energy. Thank you.

SENATOR ZANE: Thank you for your comments. Does anyone have any questions?

SENATOR BEDELL: Yes. You touched on some things that are of very high interest to me and I got involved in this during the gasoline shortage a couple of years back. With regard to the process by which a refinery produces various petroleums, gasoline - I am told, I am not an expert, it is certainly not my field - in the batching process, the lighter, the non-liquefied gases are at the top and they go down somewhat. It is a synthesizing process. They can produce almost any kinds of combinations they want. They can even resynthesize to a degree and produce from one to the other.

In this whole concept in the use of industrial-- The by-product gas from the oil refineries, to me, is an extremely important point and we do, as you say, have the great capacity for refining oil right within the State of New Jersey. I am surprised that hasn't been given a hell of a lot more attention than it has been given in the past.

MR. MORELL: And when, in fact, there are, obviously, large amounts potentially available. Eleven billion cubic feet from one refinery is, in my view, a lot of gas.

SENATOR BEDELL: Yes. You bet it is.

I want to compliment you on the report. It is well done. It is very good reading.

MR. MORELL: Thank you, sir.

SENATOR ZANE: Senator Wiley.

SENATOR WILEY: Yes. Thank you, Mr. Chairman. It is an interesting report. What is the reason that refinery gas has not been used by the other three utilities?

MR. MARELL: It seems to me that there are a variety of reasons and I am, of course, only an outsider looking in. To really find out, as I recommend to you, I think you are going to have to ask and I would urge you to ask operators and owners of refineries and the gas distributing utilities.

The reasons are complex; partly they are technical or may be technical. Different refineries produce different amounts of natural gas. I have some commentary in the material which I didn't read, in the interest of saving time. Partly they are economic. There is a cost to taking the gas off the top or off the side of this technical system and putting it in a pipeline and getting to a gas distributing utility. It is not zero cost.

There is additional cost. I said this gas is used under boilers in the refinery. It is my impression - and, again, this is only a rough impression and ought to be validated with direct investigation - that much of this gas is cycled directly into boilers in the refinery, which uses a great deal of fuel as part of the cracking process.

To the refinery operator, the manager, the executive, and the cost

accounting, this may well be considered a free fuel, since in a way it is being produced by that facility and used on-site. I don't know how they are handling the pricing but that, in fact, it is not a dollar purchased item. To provide the gas into our distributing system, requires that alternative fuels be used. I believe they ought to be used under boilers. But, in fact, natural gas should not be used under boilers. It is the wrong use for a very precious, very unique kind of fuel.

But, that would be a cost to the refinery operator. However, beyond all of this, I think what we are dealing with is a problem of concern over institutions and regulations. The four gas distributing utilities are regulated utilities, regulated under the laws of this State, regulated by the State Public Utilities Commission and the new Department of Energy.

The refineries, for purposes of pricing and for most other purposes, are not regulated by the State, nor basically by the Federal Power Commission. If they begin to operate an exchange program of natural gas, providing refinery gas to the utility, there is the possibility that cost questions will be asked - can be asked - by the PUC as part of its responsibility which begins to get into cost structure within the refinery. Questions are now being asked and I have called this, in general in some of my other work, the hassle factor to the refinery operator - having to deal with this kind of question. To date, it has not been worth it for most of them. Though, the interesting question to me is, why was it worth it for Exxon at Bayway and not for Chevron, Mobil, Texaco and some of the other refinery operators in this State? I don't know. I don't have the answer to that. But, I suggest that it is worth finding out.

SENATOR WILEY: Do you know of any utility that classifies in a more sophisticated way, such as you suggest, rather than just using industrial and residential and user bases and indeed users end-use?

MR. MORELL: Oh, yes. They all do to some degree. What I am urging is to do this on a greater scale. The schemes, for example-- If I can take a minute with the few minutes left to find that and if I can find it easily, I have with me a larger study which has been made available to the Committee which includes a description of the curtailment system. It describes-- There are about seven or eight categories: Residential, commercial above a certain size, industrial, firm commitments, and interruptable. They are categorized. What they do not do is categorize them in great detail by use. The data exists. Those are the data on which I have put together Table I in my testimony. But, the curtailment schemes, or the priority allocation schemes, or the pricing schemes, do not take this into account.

SENATOR WILEY: Is it a problem of practicability - you can meter users but it is kind of hard to meter uses, I suppose? Is that it?

MR. MORELL: Undoubtedly, that is true to some extent and, yet, someone is providing us data out of which I can calculate, apparently with some accuracy - or hopefully with some accuracy - that in this particular year in New Jersey 21.7 billion cubic feet went to high priority uses - this is industrial - and 41.8 billion cubic feet went to low priority users, both divided into various categories. How can they count it for this purpose but not count it for pricing or for regulation?

SENATOR WILEY: It could be estimates, I suppose.

MR. MORELL: To some degree. Perhaps we will have to live with

estimates and then base certain kinds of regulatory schemes on those estimates as best as possible. (see page 6x for Mr. Morell's full statement)

SENATOR WILEY: Thank you.

SENATOR ZANE: Thank you very much.

I believe that concludes our list of witnesses today.

(Hearing Concluded)



STATEMENT OF WILLIAM F. RYAN  
BEFORE THE STATE LEGISLATIVE COMMITTEE  
REGARDING SENATE RESOLUTION NO. 3004

Good morning. My name is William F. Ryan, President and Chief Operating Officer of South Jersey Gas Company.

I would like to thank the committee for the opportunity to appear today to provide information on South Jersey Gas Company's supply of natural gas. In addition, I plan to outline the reasons for our indication to the Public Utility Commission that natural gas service to new customers can and should be permitted in our franchised area.

I feel it is imperative to note that South Jersey Gas Company has never entered a season without natural gas supplies necessary to satisfy all of its customers with their firm requirements. This past winter was no exception. Also, I would like to review with the committee certain facts regarding service interruptions which occurred during the winter of 1976-77, including the national scope of the severe weather conditions.

In South Jersey, 2,966 degree days were experienced between October 1, 1976 and January 17, 1977, which was the first day of service interruptions. This compares with 2,641 degree days experienced during our design winter of 1969-70, which was the coldest winter on record for the past twenty years.

By early January, the weather conditions, therefore, were 12.3% colder than our design winter, and the traditionally coldest winter months were yet to come. We had to assume that February and March would also be colder than normal.

(Display Degree Day Chart)

On January 17, various suppliers of South Jersey Gas Company began experiencing difficulties in meeting their commitments to us due to the national cold wave. From then on, the source of any given day's supply was in question, because typically warmer regions suddenly needed additional gas for their heating needs. As a result, some of our customers were requested to temporarily reduce their gas consumption. Fortunately, we

were able to secure a portion of our previously committed supplies, including first deliveries of our own exploration gas. Houston Pipeline Company also began delivering gas previously scheduled for January 1, 1977, deliveries which had been delayed by extended hearings at the Federal Power Commission.

Restoration of full service to our customers on January 21 was shortlived as emergencies in other parts of the country increased, and the Emergency Natural Gas Act of 1977 went into effect. Gas from intra-state sources for which South Jersey Gas Company had entered into commitments in the summer of 1976 became a target of less fortunate gas distribution systems that had not made such prior arrangements. Our direct commitments were set aside by the F.P.C. and the gas, in effect, made available to the entire system of Transcontinental Gas Pipe Line Corporation (Transco). Curtailment of service to all but high priority residential, commercial, and plant protection users ensued for two basic reasons: first, in order to receive a percentage of the emergency gas pool, South Jersey Gas Company had to be serving only those high priority needs; and secondly, under the restrictions set forth in the new Federal Plan, the emergency gas could not be allocated to our industrial and large commercial customers, who would under normal conditions share in any of our emergency purchases. Full service was restored a second time on February 10, 1977, immediately after reinstatement of our original commitments for emergency gas purchases. At this point, we had determined that service could be continued for the remainder of the winter under the most adverse weather conditions.

Curtailments of natural gas in the past few years have made the acquisition of our gas supplies a more time consuming activity. In addition, replacement supplies have cost more, and service to large volume interruptible customers has virtually been eliminated. Despite these adversities, we are about to enter a new winter season, able to reiterate with great assurance, the statement that supplies are adequate to serve the firm requirements of all of our customers.

This winter's supply will come from the following sources:

<u>Source</u>	<u>%</u>
Transco CD-3	45.5
Storage Gas	34.0
Other Long-Term Supplies	15.2
South Jersey Exploration	3.1
Company Facilities	<u>2.2</u>
	<u>100.0</u>

The Transco supply is projected at levels reported by Transco to the F.P.C. Storage gas is already on hand, and will probably be increased due to additional deliveries from Transco this summer, and the fact that our industrial customers continue to use less gas than our contract with them provides. Increased supplies from Transco this summer represents new gas added to its system and we expect actual deliveries during the winter season to be higher than currently projected. All other supply sources represent commitments which will continue to be in effect in future years.

It should be noted at this point, that there is some misconception regarding actual pipeline capacity. Transco's capacity to serve has never changed, and exceeds current and projected system demands.

Having acquired sufficient supplies for firm customer requirements, the dilemma facing South Jersey Gas Company and other distributors is that improvements in supply cannot be absorbed unless a ready market exists. Interruptible sales could be made, and probably will be made from time to time. These sales represent a waste of premium fuel, create low priority sales, and lower our profile which is at the core of all curtailment plans. South Jersey Gas has been in positions where it has been necessary to sell gas to low priority users. Because of the volume of these sales in past years, South Jersey Gas Company has suffered far more than many other distributors. We do not wish to see this happen again.

We have closely followed Transco's projections, activities and proven success ratio. Whether all the gas projections are realized, time will tell. However, even if Transco does not come through with all of its

projections, South Jersey Gas Company will still have a significant improvement in supply. Because of South Jersey's customer profile, in times of shortage it is curtailed at a greater rate than its sister companies. Conversely, our Company will receive a greater percentage of each additional foot of gas as it returns to the system.

At the conclusion of my prepared remarks, we will specifically review our supply forecasts with an eye toward demonstration of our gas supply flexibility and ability to serve additional customers.

We are in total agreement that supplies must be available to supply existing and new customers. No new customers can be added until we receive permission from the Public Utility Commission. We await their decision, which we are confident will be made after careful deliberation on all facts and issues.

The following reasons will explain why it is incumbent upon us to pursue the addition of new customers:

1. A utility's obligation is to provide adequate as well as safe service in its franchised area.
2. Even with additional or replacement customers, South Jersey Gas Company will not be able to offset its losses due to customer attrition and conservation efforts.
3. Utility rates are based on plant investment and reduced utilization of that plant leads to higher costs for the remaining customers.
4. Despite increasing costs, natural gas will continue to be the least expensive and cleanest energy source for many years to come.
5. We must retain or improve the current high priority profile of use as established on our system by the F.P.C. to prevent further losses of gas under curtailment plans. The beneficiaries of such losses would be other companies, largely in other states.
6. None of our neighboring states have restricted their utilities from offsetting losses due to attrition, and in many states, customers outside of that category are being added.

The projections you are about to see show one rather amazing fact besides the anticipated supply improvement. In 1980, our firm sales will be less than today even with the annual addition of 1,500 residential, 200 commercial and 10 small industrial customers. These figures reflect problems with our existing industrial customers who have substantially decreased their usage of natural gas in each of the last three years. These losses were for reasons known only to the owners of these plants and we do anticipate that this will occur periodically in the future. Pressures for conversion to coal will further reduce industrial gas usage while proposed taxes on industrial uses of gas will certainly force industry to burn natural gas only where it is essential. Twenty-six percent of our annual gas sales are made to approximately twenty-five industrial plants. It is very difficult to project sufficient small customer additions that will offset any significant loss of sales in the industrial market.

We believe our request to add customers, not necessarily additional customers, is what the National Energy Plan envisions as the end result of its impact in the marketplace, a shift of premium fuels to the highest priority markets. This is consistent with South Jersey Gas Company's outlook regardless of a regional increase in available supplies which perhaps "bucks" the national trend at the present time.

Now to the charts. (Flexibility pitch)

Testimony before the  
New Jersey Senate  
Special Committee to Investigate the Availability of Natural Gas

by

David L. Morell  
Center for Environmental Studies  
Princeton University

Trenton, N.J.  
September 9, 1977

Chairman Zane, Members of the Committee, Ladies and Gentlemen. I am pleased to respond to the Committee's invitation to testify today on several issues related to the supply and use of natural gas in New Jersey. This is indeed a very complex subject, and I am pleased with the attention which the new New Jersey Department of Energy and the Senate are each devoting to it.

I have no special knowledge to share with you regarding the availability of natural gas supplies to New Jersey. For that kind of information, you will have to rely upon testimony from Commissioner of Energy Jacobson, from the various gas distribution utilities and pipeline companies, or from the Federal Power Commission (or new U.S. Department of Energy). I did complete a study at the Center for Environmental Studies in December 1976, with co-author John Cecil, entitled New Jersey's Natural Gas Shortage: A Policy Analysis. The study examined the sources and uses of natural gas in New Jersey. Copies of this study are available to members of this Committee, and I hope that the data and analysis contained in that report may indeed prove useful to you and other state decision-makers.

The focus of my testimony this afternoon will be on three points:

-- The need to base policy decisions on gas consumption patterns, rather than on supply availability alone.

-- The distinctions which ought to be made between end-uses of gas and end-users of gas.

-- The potential availability of a highly-efficient source of natural gas within New Jersey: refinery gas.

#### Gas Consumption Patterns

In my opinion, the fundamental issue on which we ought to base our policies involves gas consumption, not gas supply. Natural gas is a unique, precious fuel, which must be conserved and used for the highest priority purposes only, not wasted in other uses for which other fuels -- oil, even coal -- can suffice. What are some typical high-priority uses for natural gas?

- Industrial Feedstocks
- Industrial Processing (alternate fuel infeasible)
- Industrial Plant Protection
- Residential Heating

And what are some typical low-priority uses?

- Industrial Boiler Fuel
- Industrial Processing (alternate fuel feasible)
- Industrial Space Heating
- Ornamental Lighting

#### End-Uses and End-Users

Most extant natural gas priority allocation schemes focus on end-users: residential, industrial, and so on. That's fine as a start, but it doesn't go far enough. We need instead to focus on end-uses of natural gas in New Jersey, devising and implementing policies to ensure that this fuel is

consumed only in high-priority uses, whatever the category of the user. These high-priority uses are characterized by overall energy efficiency (BTU's in v. BTU's out), the appropriateness and availability of alternate fuels to perform the same task, and compatibility of fuel use to end objectives.

For example, in New Jersey in 1973 (the latest year for which complete data were available when I did my study), the industrial sector consumed 66.4 Bcf of gas. Of this total, 21.8 Bcf (33 percent) was in high-priority uses, although industry as a whole receives a low priority as an end-user. These data are shown in Table 1.

Similarly, some residential uses are low priority, such as heating of swimming pools and outdoor decorative lighting, even though residential users are in a high priority category. This has already been recognized by the New Jersey Public Utilities Commission, and curtailment orders were issued to bring such uses of gas to an end. Unfortunately, these uses accounted for only a very small amount of gas. Nevertheless, this was an important first step in terms of conservation policy visibility, and this kind of procedure is indicative of what could be accomplished in the industrial sector as well in pursuit of a policy of allocating natural gas to high-priority uses.

Moreover, most priority allocation schemes distinguish between firm and interruptible contracts. Yet some users with interruptible contracts unfortunately may need their gas for high-priority end-uses, whereas many firm contract holders use this fuel in low-priority categories.

Table 1

Uses of Gas in New Jersey's Industrial Sector (1973)

	<u>Amount</u> <u>(in million cubic feet)</u>	<u>Percent</u>
<u>High-Priority Uses</u>		
Processing (no alternate fuel feasible)	21,468	33%
Feedstock	262	neg
Plant Protection	<u>37</u>	<u>neg</u>
Sub-Total	21,767	33%
<u>Low Priority Uses</u>		
Processing (alternate fuel feasible)	18,343	28%
Boiler Use	20,692	31%
Space Heating	<u>2,761</u>	<u>4%</u>
Sub-Total	41,796	63%
<u>Other or Uncategorized</u>	<u>2,878</u>	<u>4%</u>
TOTAL	<u>66,441</u>	<u>100%</u>

Source: Cecil and Morell, New Jersey's Natural Gas Shortage: A Policy Analysis, December 1976, p. 173.

Refinery Gas

First, however, let me call to your attention a unique source of additional natural gas supplies available here in New Jersey, through a renewed focus on energy efficiency. This is refinery gas.

Only Public Service Electric & Gas currently receives refinery gas in New Jersey, produced as a byproduct of Exxon's refining operations at Bayway in Linden. The other three gas distributing utilities and the other refineries do not have such an arrangement. This source of gas began in 1970, and supplied over 11 Bcf equivalent in the 1975-76 PUC reporting year, PSE&G's second largest source (after pipelines). It was relatively inexpensive, costing \$2.28 per million BTU's (as compared to \$5.15 for Algonquin SNG and \$4.28 for SNG produced at the Linden SNG plant).

This substitute gaseous fuel seems to offer attractive possibilities for further use if it were made available from other refineries located elsewhere in the state. In fact, this could be one way for New Jersey to take advantage of the fact that 34 percent of the entire refinery capacity on the East Coast is located within our state. Today most refinery gas is used on-site in the refineries, normally as boiler fuel (one of the lowest-priority uses for natural gas).

I have no special knowledge of the situation at the other New Jersey refineries. Clearly, each refinery is somewhat unique with respect to the extent it produces refinery gas as a byproduct of its conversion processes. I am told by Exxon executives that a hydroskimming refinery, which basically involves distillation and some hydrotreating of the light fractions, produces little refinery gas. On the other hand, a highly integrated refinery designed to produce high gasoline and light distillate yields (like Bayway)

produces more gas in the process of converting the heavier fractions to these light products. Example conversion processes that are gas producers are reforming, hydrocracking and catalytic cracking.

Whether the incremental gas which could be supplied in New Jersey via the refinery conversion reroute could be produced more efficiently and economically than by other gasification processes would depend on the specific situation at each of the state's operating refineries. Because of the possibility that relatively large amounts of refinery gas might well be available at these refineries, however, I do suggest that this Committee (or another committee of the legislature), and perhaps the new Department of Energy as well, investigate this potential source of gas availability through studies, hearings, or other means of collecting this information.

#### New Residential Use of Gas

I believe that residential use of gas is a high priority use. This is the case for several reasons. First, a high energy efficiency can be obtained by heating with gas, in which the heat from the furnace and the duct system (normally in the basement) contributes measurably to the overall input of heat into the home. For heating purposes, gas has a thermal efficiency of approximately 75-80 percent, compared with 57-63 percent for fuel oil and 45-59 percent for coal. Although heat generation from electricity is almost 100 percent efficient in these terms, electric power production from fossil fuel is only 38 percent efficient (excluding additional transmission losses).

Second, the convenience of gas is striking...as opposed to fuel oil, for example (electricity too has this characteristic). Except in certain

rural areas, it is supplied directly to retail customers through pipelines. Therefore, its use does not require storage facilities or tie up capital in fuel inventories.

Third, to date gas (from the regulated interstate market) has been a less expensive fuel. Though its cost is now increasing, so are the costs of other competitive modes of home heating.

Fourth, gas is a very clean burning fuel, with essentially no pollution from home furnaces. This contrasts with the pollution from oil burners, and with the significant environmental degradation from electric generating stations (though not from electric resistive heating in the homes themselves).

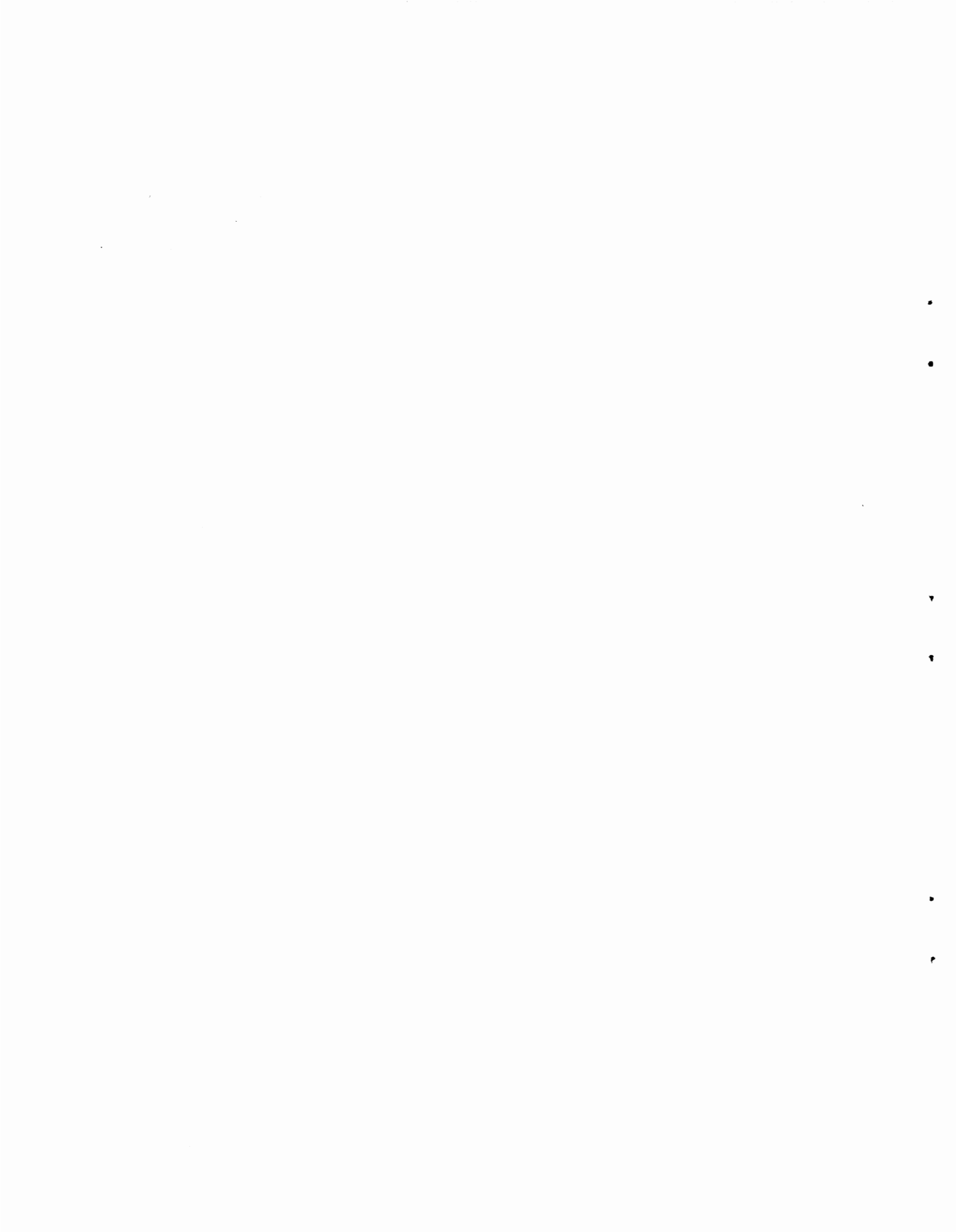
A decision not to permit new homes to be heated with natural gas, because it is indeed in short supply, cannot be made in a vacuum. What are the alternative fuels, and what are their implications? Oil and electricity are the two obvious alternatives. I have noted some of the economic, environmental and energy efficiency implications of heating our new homes in New Jersey with such fuels, rather than with gas. Electric resistive heating is a particularly inefficient use of energy, with the fuel in the power plant (often many miles from the home) burned at thousands of degrees to boil water to produce electricity to transmit some distance where it is used to heat a home to 68 or 70 degrees. Electricity is uniquely valuable for a number of other uses, but resistive heating certainly does not seem to be one of them.

Summary: A Policy Choice

Assessment of these issues provides the context within which to judge whether or not new homes should be heated with gas, or with another fuel. Until solar heating (perhaps in a hybrid system with electric heat pumps) becomes fully cost-competitive in New Jersey -- which hopefully will be sooner rather than later -- I continue to believe that home heating through natural gas is a high priority use of this fuel, and a preferable alternative to other ways to heat our new homes.

This additional use of gas could be accomplished -- and in my opinion should be accomplished -- through a trade-off with further conservation of natural gas elsewhere in New Jersey's pattern of overall consumption. That is, by curtailing at least the same amount of low priority consumption, and hopefully much more, then shifting this gas to high-priority uses, we can ensure that our overall natural gas supplies are no less adequate to meet our state's needs, and over time much more adequate. In this sense, through effective conservation programs we can have an adequate supply of natural gas within New Jersey itself, for our highest priority uses.

Thus, ironically in a time of overall natural gas shortages for the United States and for New Jersey, I recommend that new homes in this state indeed be heated with gas, as a high priority use...but that commensurate if not greater low priority uses of gas within the state be curtailed by state regulatory action, and that the possible expansion of our supplies of refinery gas receive priority attention. Thank you.



JUN 27 1985



