

PUBLIC HEARING

before

ASSEMBLY ENERGY AND NATURAL RESOURCES COMMITTEE

on

(Cogeneration)

April 2, 1986
Room 403
State House Annex
Trenton, New Jersey

New Jersey State Library

MEMBERS OF COMMITTEE PRESENT:

Assemblywoman Maureen B. Ogden, Chairwoman
Assemblyman Arthur R. Albohn

ALSO PRESENT:

Denice Drace
Office of Legislative Services
Aide, Assembly Energy and
Natural Resources Committee

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TABLE OF CONTENTS

	<u>Page</u>
R. William Potter, Chief Counsel New Jersey Department of Energy	2
Murray Bevin Assistant to President Board of Public Utilities	22
Steve Gabel Director of the Division of Electric Board of Public Utilities	24
Donald Deieso, Director Division of Environmental Quality New Jersey Department of Environmental Protection	31
Carol Rufener, Freeholder Morris County, New Jersey	37
Eugene McCarthy Vice President of Customer Services Jersey Central Power and Light Company	42
Jorgen Christiansen Raritan River Steel Company	49
John B. Dalton, Reegional Manager State Government Affairs HLR Service Corporation, a subsidiary of Hoffmann-La Roche, Inc.	62
Jeffrey Stoller Director Of Regulatory Affairs New Jersey Business and Industry Association	72
Georgia Hartnett Manager of Government and Regulatory Affairs Elizabethtown Gas Company	76

TABLE OF CONTENTS (continued)

	<u>Page</u>
Jodi Weissman Representative of Industrial Services Elizabethtown Gas Company	79
Melvin Heuer, President Energy Initiatives	83
Brian A. Parent, Senior Vice President Planning and Rates Atlantic City Electric Company	98
Richard Stokes Atlantic City Electric Company	105
William Wood Manager of Power Supply Planning Public Service Electric and Gas Company	111
Harry Betz Campbell Soup Company	120
 APPENDIX:	
Statement submitted by R. William Potter, Esq.	1x
Statement submitted by Elizabethtown Gas Company	24x
Statement and attachments submitted by Brian A. Parent	25x
Letter submitted by Cogeneration Coalition of America, Inc.	53x

* * * * *

di: 1-22, 69-83
jb: 23-68
mjz: 84-97, 110-136
tm: 98-109

ASSEMBLYWOMAN MAUREEN B. OGDEN (Chairwoman): I'd like to call the meeting to order at this point, and get started on this public hearing that we're having on cogeneration. I'm very glad to see another member of the Committee, Assemblyman Albohn, here, and I hope -- we've heard from a couple that can't come -- but I hope that the other members will be able to come at some point during the day and hear this testimony on such an important subject.

Yesterday, as we all know, for a short period the price of a barrel of oil went down below ten dollars, and there are those who now say we might even return to the days of the early '70s when it was \$1.50 a barrel, and 29 cents a gallon. I suppose no one really knows what the answer to that is now, but we do have to be aware of the fact that it's now 15 years after the 1970s, and we have consumed that much more of a finite resource. And, despite the boost in these lower prices for business, and drivers, and homeowners, it's still not a time to ignore New Jersey's tremendous dependence on oil together with our great dependence on electricity that's imported from out-of-state. And I feel that now is a time for us to plan wisely for the future, and to continue our quest to reduce further New Jersey's energy cost through conservation and cogeneration.

And specifically, today we would like to learn from those of you who are here to speak before the Committee about the health of the cogeneration industry in New Jersey. Are the incentives sufficient? Are there deterrents? And are there recommendations for changes? And, more specifically than that, dealing with such issues as buy-back rates, backup power rates and access, wheeling access and rates, and access to natural gas, and the whole permit procedure with the DEP. And therefore, just sort of setting those guidelines as to the various issues that we hope that you who testify today will address--

I'd like to call first, the Chief Counsel for the New Jersey Department of Energy, William Potter, who has long been an advocate of cogeneration and had quite a key role in the policy that's been put forth by the Department of Energy.

R. W I L L I A M P O T T E R: Let's see, does this work? (speaking about microphone) I'll find out.

ASSEMBLYWOMAN OGDEN: I think if you just press that button there, Bill, that says talk, it should light up.

MR. POTTER: All right. Does this work? Or this one works.

ASSEMBLYWOMAN OGDEN: I think it's that one.

MR. POTTER: This works. Oh good. I'm fighting off a cold here, let's hope I succeed, at least as for today.

Good morning Mrs. Ogden, and Assemblyman Albohn, and others whom I don't entirely recognize. I think you've all received the copy of the Department of Energy Master Plan that used to have a sort of just a buck colored cover, it's now come out with something much more decidedly high-tech. And I think everyone got a copy of that.

I've also given you copies of a paper that I delivered in Washington two weeks ago at an energy technology conference which explains further how cogeneration and competition can work together to lower rates for everybody. And finally, I've given you a copy -- it's the outline that I will work from today. If I start to get into items that you don't consider to be that important, or if you have some questions and you want to stop me, please feel free to do so. This hearing, of course, is for your benefit, not mine, and I'll try to be as helpful as possible.

Let me just begin, very briefly, by discussing what is cogeneration. It is, as we define it, the simultaneous or sequential burning of -- use of -- an energy source. Now, let's put it down to something a little bit closer to home. It means getting two uses of energy from the same burning of

fuel. It means getting hot water and steam from burning oil or natural gas, and using that hot water or steam there on the site of the industry or the facility, and then also using the same steam to generate electricity. And then that electricity can be used on-site, or it can be sold to the utility, or there can be a combination of it where they use some on-site and they sell some to the utility.

Now, why is that important? Cogeneration is a way to lower energy bills for every single industry in this State, which is hard-pressed by the highest average electricity rates in the nation. It's a way for every business which has this kind of a thermal load to do the same thing. It's a way for a YMCA in Freehold to heat the water and also to generate electricity. IT's a way for Campbell's Soup Company to stay in business here in New Jersey. It's a way for Hoffmann-La Roche to stay in business here in New Jersey. We think it is one of the most important initiatives that this State can pursue by way of getting a healthier economy.

It's also a way to have a more secure and diverse energy mix for the State. Currently the State of New Jersey imports about 36% to 45% of its electricity from coal burning power plants, predominately located in Pennsylvania. Those contracts expire sometime in the early 1990s, and if the utilities had no other recourse, they would probably buy -- I'm sorry, they would probably construct -- new power plants at enormous cost to the consumers of the State. Cogeneration can replace power plants that otherwise utilities would have to build. And all of us who are cognizant of the current PSE&G rate case, which is by far the largest ever sought by a utility in New Jersey -- some \$910 million increase in base rates, primarily for the Hope Creek Nuclear Plant-- I think everyone who's aware of that has to be very concerned about ways to have a future that is free from building more of these very large power plants.

There's nothing inherently wrong with a central-station power plant, it's just that it's not as efficient as cogeneration, which tends to be about twice as efficient as one of those power plants. Also, a large central-station facility takes many years to build, and there are enormous uncertainties associated with it. Hope Creek was originally projected to cost about half a billion dollars -- \$500 million -- for a two unit facility, and it was supposed to be operating sometime in the mid-1970s. Well, now they're building a single unit, and the cost is currently projected at well in excess of \$4 billion. So, these cost escalations in power plants are something which have weighed very heavily on consumers. Cogeneration can replace all future large base-load power plants, and therefore, it has a very important role in New Jersey's energy mix.

Now, in the master plan, which you all have, Chapter 3 of it, which starts on page 91, begins our discussion of cogeneration problems and opportunities here in New Jersey. I suppose one preliminary question is how much cogeneration can we get? Back in the mid-1970s, when I was a younger trial lawyer representing consumer groups and environmental groups, we urged that the utilities invest in cogeneration rather than build these large power plants. And one of the responses we had was we can't depend on that happening. It won't occur unless the utilities do it. Well, in other states, such as California, Texas, Michigan, Maine, New Hampshire, Illinois, places where cogeneration has been given a chance to cooperate with and compete with utility facilities, there has been a surge of cogeneration development. Once again, the market system works if we just give it a chance.

Cogeneration has given the lie to the old myth of utilities -- electric utilities -- having a natural monopoly in the generation of electric power. Now we know that every McDonald's Hamburger stand can also be a producer of

electricity. Every YMCA can become a producer of electricity, and certainly every large industrial facility in the State can be a producer of electricity.

Now you might ask, what will that do? What will that system look like in future years, if we have all this cogeneration? And in my view, it won't be too long before cogeneration units will be just about as common as the central air conditioning unit is today at shopping centers and other facilities. Well, it's been called a revolution, but in fact it will look, I think, very similar to the current natural gas industry, in which natural gas companies buy their gas from a diversity of sources, and then they sell it back -- they sell it on to the residential and other consumers. They sell it retail, they buy it wholesale.

With cogeneration, I think we'll see electric utilities buying power from many, many sources, and then selling it on to the retail customer. It will-- Functionally, it will not be that different from what we have today, except that the notion of a natural monopoly is simply gone. In place of it we'll have something approaching competition in electric power. And as all of us have seen, and as Chairwoman Ogden pointed out, competition and deregulation in oil have produced just phenomenal reductions to the consumer. We don't know where it's going yet, and we know that the Sheik Yamani is not doing this out of beneficence, he's trying to reestablish market control. And so, I suppose we all have to be worried about it coming back up again, someday. But the long and the short of it is that competition can work, it can put the consumer back at the center of electric power planning, and electric power pricing.

Now, with that sort of extended backdrop, I'd like to just turn to some of the policies that are in the Master Plan. The first issue, as Mrs. Ogden pointed out, is the question of buy-back rates. What are those? That is the price paid by a

utility for the electricity that the cogenerator would sell to that utility. It's absolutely critical to have a stable source of income before investors will make use of the cogeneration. Since 1981, the Board of Public Utilities has had a buy-back policy which is a very short-term buy-back rate. It's more like the spot market rate, because it's pegged to something called the PJM Grid -- that's the Pennsylvania, New Jersey, Maryland interconnection of utilities -- and those utilities buy and sell electricity every hour of every day. And the rate at which they do so is to be used as the so-called full avoided cost -- those are the magic words -- full avoided cost for the buy-back rates for cogeneration units.

We think that that rate has certain flaws to it. Foremost, the foremost flaw is its uncertainty. If you, or I, or others wanted to go into cogeneration and we went to the bank and we sought some sort of financing for our project, the bank would say, well what can you get for that electricity, and we'd say, well, the PJM rate plus 10%, and it would probably not be too long before we'd be ushered out the door. Now, we have extended testimony from multiple cogeneration investors, experts from around the country that came out here for a series of hearings last September, and they said that they are telling their clients, don't go to New Jersey so long as you have this PJM rate for the full avoided cost figure. It's too uncertain; you will not get cogeneration. And lo an behold, notwithstanding the enormous potential in this State, we have just barely scratched the surface on cogeneration.

In fact, what we're seeing is that industries that should be or could be building facilities large enough to sell energy into the system, are just trying to self-generate. That is, they don't want the hassle of trying to reach some agreement on a long-term contract for full avoided cost rates.

So, what we have devised -- that is, what we have borrowed from other states -- is a buy-back rate which is

predicated on a so-called proxy power plant. Now, what does that mean? We've looked at what a utility would do over the next several years to meet consumer needs in the absence of cogeneration. What would they do, what would they spend, but for cogeneration? And that is a definition consistent with what the federal regulators have set forth. And we think that the most likely scenario is that utilities would begin building coal-burning power plants using state-of-the-art scrubbers sometime in the early 1990s, and therefore, the buy-back rate should be equivalent to that of a coal-burning facility. I might add that in 1992 some 1400 megawatts of purchase power contracts will expire, and I think it's a safe assumption that utilities would begin planning, and in fact have begun planning, to build coal-burning power plants sometime in the early 1990s. As an aside, it's interesting to note that lately they have been pulling back on those plans to build coal-burning power plants as we've come forward with cogeneration initiatives. Suddenly the avoidable coal-burning power plants have ceased to exist on many of their plans. So, we're somewhat concerned about that being used to discourage cogeneration.

Now, that's only the capital component of the facility. That is the actual investment in bricks and mortar and such. There's also an energy component, and we think that should be based upon the avoided cost of generating electricity from oil or natural gas between now and 1992, and then after 1992, it should melt into that of a coal-burning facility for both capital and energy components. I'm sorry if that sounds a little too complex, but it's described, I think somewhat better, in Chapter 3 of the Master Plan.

As an alternative, what we have suggested is that the buy-back rate be based upon the long-term projections of PJM rates, which the utilities do now, and always have done for purposes of their own planning. This would have the benefit of

giving a cogenerator some kind of security. They could go to the bank and say, here is the potential revenue stream, because this is what we'll be making for our electricity we'll be selling over the next 10 years or so. And so, we think that if that's-- If the utilities use that to decide on whether to build a power plant, it can also be used for entrepreneurs and investors to decide whether to cogenerate.

There are many, many other issues related to cogeneration. Maybe I could just try to touch on those very briefly. They are listed in the outline, starting at page 2. They're listed under the heading of "What are the interim objectives of the Master Plan?" The reason I have it there is that the Department of Energy Act of 1977 states that the Master Plan is to be followed by all State agencies to the maximum extent practicable and feasible, and secondly, that the DOE is to set forth long-term objectives, and also interim implementation measures which other agencies are bound to follow.

Now, what are those interim implementation measures? As you see, going down the list, they almost all involve the Board of Public Utilities. The BPU is, by law, the rate-making authority for New Jersey, and the Department of Energy cannot set the buy-back rates, or other rates dealing with cogeneration. We can, however, establish a clear cut policy which the BPU would then comply with -- and these are the magic words -- to the maximum extent practicable and feasible.

Now, how would that be done? Going through these interim measures, we expect the BPU to hold a series of hearings to reevaluate many of these new concerns about cogeneration. Item number one, of course, is setting new buy-back rates for cogeneration. I might add that when the Board issued their orders back in the Fall of 1981, they stated that as new data and information becomes available, they would be duty bound to reconsider what they had set up at that time.

We think that there is an enormous amount of new data and new information. If nothing else, the energy Master Plan is the source of some of that.

Well, rather than read to you some of the items that are there, let me get to some of the objections that we've heard to the DOE policies. And then I'll be ready to respond to any questions that you might have.

I think the major objection we've heard is that, as someone down in Washington put it, you cogenerators have a marvelous technology, and a great idea, but you're too early. We don't need you yet. The utilities are saying, we've got more than enough capacity right now, and to further add capacity will only burden the rate payers with higher rates, because traditionally, capacity investments that they make are charged to consumers together with a profit added on to it. Well, as we see it, that sort of cost of service method of setting rates is very flawed, because it assumes the existence of this natural monopoly. Rather, what we need to go to is a kind of value of service price setting method. Value of service means, what is the economic value of the output? What is the economic value of the electricity? Not, what was the cost of the input. Which is, in a sense, very similar to the problems the Pentagon has had by paying contractors the cost plus profit on new facilities -- new airplanes and such.

Several states are now moving in the direction of value of service rates. If they are employed in New Jersey, you'll find, as economists say, there is no such thing as excess capacity, there's only excess price. We think that as cogeneration comes on-line it can replace some of the very high cost units that the utilities operate. It can replace the importation of power from out-of-state, which, incidentally, is the major source of acid rain in New Jersey. So, it has that kind of environmental benefit as well. And, furthermore, it's going to provide the impetus for us to rethink regulation here

in New Jersey and around the country. It's going to put the consumer back at the center of the system. When regulatory commissions were set up, like our BPU, back in the early 20th Century, it was designed to be a surrogate for competition. Now we know that in fact, there is an enormous potential for that kind of competition and cooperation from cogeneration.

Rather than go on, if you have any questions, I'll be delighted to try to answer them.

ASSEMBLYWOMAN OGDEN: Art?

ASSEMBLYMAN ALBOHN: Well, I had the opportunity to read just a couple sections of the Master Plan before this meeting, and I think I'm as much an enthusiast of cogeneration as anyone, I would say. But, one of the things that came through from the overview and Chapter 3 of the Master Plan, which I read--

MR. POTTER: Yes, sir?

ASSEMBLYMAN ALBOHN: --seem to be a rather distinct anti-utility bias. And, I was rather surprised at this, and it surprised me even more to find that, at least the announcement of this meeting, did not indicate any representation from the utility industry per se. It was the DOE, it was DEP, it was the BPU, it was cogeneration, but no utilities.

On the other hand, I'm glad to see by the list of speakers who have apparently asked to speak there are some people from the utilities who also wish to comment. As a matter of fact, you know, I had a distinct feeling that there was so much bias in these other sections that, you know, it sounded as though the utilities were the enemy, and we -- or the Department of Energy -- was going to charge out there like Lancelot and strike them down with cogeneration. And I think that's the wrong approach to take, because part of what I discern in here is some attempt to give special privileges to cogeneration that not everyone else receives. And I'm not so sure that that's appropriate.

For example, you speak of buy-back rates which you would like to make more definite and make long-term. And that's great for the cogeneration users, but how about the utility? What do they know about what their buy-back -- what their own rates are going to be? And I find it difficult to conceive of fixing rates on the one hand, and being at the mercy of DOE, the BPU, and the Public Advocate's office on the other hand. So, that might be, perhaps, my first question. How do we distinguish between those things, not working and arguing against the utilities per se, but simply asking for a cooperative effort on this?

MR. POTTER: Sir, the-- Any bias in there, I think might simply reflect our efforts to marshall the evidence that the existing system has produced some very anomalous results, and has caused -- not intentionally I might add, but has caused -- some very severe economic burdens on the public. It's really a matter of the actors aren't so much at fault, but the script is wrong. What we see is that utilities over the years have worked very hard to establish and maintain a monopoly, and that monopoly has kept out potential competition. Cogenerators can be very cooperative with the utility. In fact, a healthy cogeneration industry requires healthy utilities to purchase and distribute the power.

The problem has been that utilities have looked upon -- not all utilities; I shouldn't say every one, but many have looked upon -- the cogenerators more as competitors to be kept out, than as sources of cheap energy that would replace the energy that they otherwise might generate.

Sir, the object that we have is to create a level playing field in which entrepreneurs who want to generate their own power would have as much opportunity, but no more, than that of a utility. So, if there is any bias in it, or if that comes forth, it has been part of our effort to state the case historically, and I do believe that if the BPU begins to hold

hearings on this there will be substantial give and take, and we'll probably reach some kind of accommodation. The problem has been that the BPU has not evidenced any interest in holding hearings to reevaluate some of these matters. And that was a continuing complaint we heard from the independent industry out there.

So, I would expect that once the BPU begins to hold hearings, begins to comply with the Master Plan, that we can all sit down and work together to get to some kind of a cooperative system.

ASSEMBLYMAN ALBOHN: Well, I would like to see it become cooperative, because I agree that perhaps there's -- I don't know whether there's a natural monopoly there or not, there are a half a dozen different sources of energy that are readily available, and whether you use them or how you use them is entirely up to the individual utility, perhaps. But the competition, as far as I'm concerned, exists. One of the things that concerns me -- and to be perfectly frank, I have read "level playing field" so many times I'm about to become nauseated, and the thing is -- the thing that comes through is that it's going to be level in one direction, but not in the other direction, because you're going-- Some of the things that have hurt the utilities -- and believe me, I own stock in no New Jersey utilities, I have no interest whatever in the utility industry per se -- but I have been concerned over the years that they've become one of the finest political whipping boys the politicians have. And I think this is wrong. I think sometimes the rates that they have to charge are the result of some of the legislative actions and the political manipulations that sort of elect to find an enemy to blame for almost anything.

So, when I read in your reports here that you are looking for special dispensation from DEP now, with regard to stack permits for cogeneration facilities, and accelerated

action on those of some sort, that gives me great concern, because I can see a host of cogeneration facilities doing a lot more in the way of pollution if they are improperly operated with either no standby personnel, or perhaps improperly trained personnel. And I can see a lot of things wrong with that, and yet that's where the playing field appears to go on to be tilted in the opposite direction.

So, that's the sort of thing that concerns me, really. I have no-- Like I say, I want to see cogeneration move, and I think it is moving. It can't move overnight -- we have Hoffmann-La Roche-- I serve on the Board of Morristown Memorial where we're going to go ahead with a cogeneration facility there. And, you know, I feel quite at home with the idea, but I feel it should carry its own weight, and not be riding around on the back of the utility.

MR. POTTER: Well, of course, any special dispensation has its origin in the 1978 National Energy Act, called PERPA -- Public Utility Regulatory Policies Act -- which set forth the requirements that utilities buy the electricity, and set buy-back rates, and such. And Congress reached that conclusion after exhaustively considering the ways in which utilities over the years had acted, really in the spirit of John D. Rockefeller, to keep out competition from cogenerators. It's-- We're not making that up, sir, it's really sort of an historical fact.

ASSEMBLYMAN ALBOHN: Well, I don't know how much of a fact it really is. It probably is, to some degree, just like the railroads, you know, were a monopoly and took care of things. But, we've come a long way since that time, and I don't think we have to treat the utilities today as though they were still being run by John D. Rockefeller and others. You know, there was a great deal of cogeneration. It seems to me when I went to school, which was unfortunately a long time ago, the university had its own power plant, and found it

uneconomical to continue to operate that power plant. So, that has all changed. So, it's not as though cogeneration was driven out of business, it's just that the efficiency of relatively small plants compared to large plants was such that, you know, it just couldn't survive.

Now, maybe the situation with the higher prices of energy, and improved recognition of what you can do with heat energy as compared to just, you know, putting it up the stack, may change things around. I think it should.

MR. POTTER: Yes. Well, sir, one reason that we had that we have some of the rules in here that we do that favor cogeneration, is because of what economists call the transaction cost -- that is the hassle factor for the independent producer -- is so much greater than it is for the utility. The utility has time on its side when it negotiates with a cogenerator. If you go in to see the cogenerator, they can take -- and we have testimony to this -- they can take months to deal with that cogenerator about some of the simplest issues, until that cogenerator goes away. So that's why we tried to set forth some time limits, some kind of standards for good faith negotiation. What may look like special dispensation is really just an effort to raise up the opportunities so that the entrepreneurs can get a chance to compete. Level playing field is becoming a ridden, worn down cliché, but it describes what we're trying to get to. And I think that once the BPU commences hearings on some of these topics, if there is any bias, which is unintended, I think it will be shored away.

ASSEMBLYMAN ALBOHN: I would hope so, really. I won't belabor the situation, but I did have some concerns and actually the fact that you once represented environmental action groups and consumer groups, and you probably wrote most of this report, I can sense the connection between the two. And, I respect it, I know what you're trying to do.

MR. POTTER: I know. It's awfully tempting to say I told you so.

ASSEMBLYWOMAN OGDEN: Bill, I'd like to ask you if the Department of Energy has discussed the implementation of the Master Plan with the BPU?

MR. POTTER: Well, we've sent them a letter setting forth some of the things that are in the Plan for them to do. We haven't, to my knowledge, had a reply as yet. As you know the DOE is going through its own transition at present, and I certainly look forward to some kind of response from them, and some kind of communication. One difficulty we've often had is just sort of knowing who is the BPU. Is it the three commissioners? Well, you can't sit, you know, with all three of them, because of the Open Public Meetings Act. Is it the Executive Director? Is it a member of the staff? We certainly talk with the staff on a regular basis, but it's sometimes a little bit difficult to get a direct communication, even though we're in the same building.

ASSEMBLYWOMAN OGDEN: And not far from each other.

MR. POTTER: That's right. If we had a common cafeteria we would have probably solved everything.

ASSEMBLYWOMAN OGDEN: Would you say that the cogeneration policies of the BPU are generally similar to what you're advocating in the Master Plan, or are there marked divergencies, and what are they?

MR. POTTER: I think the major divergence is on the buy-back rate, which we come forward with methods that will give some kind of relative degree of financial assurance to a cogenerator. The PJM rate just goes up and down, basically every hour, and that's extremely difficult for an investor. I've described some of the approaches we've taken, but I think that's the most basic one.

ASSEMBLYWOMAN OGDEN: You know, I was a little bit confused when you were discussing that bill. You were talking about how there should be a projection for the PJM rates.

MR. POTTER: Right.

ASSEMBLYWOMAN OGDEN: Were you also implying that 10% was not adequate, that that should be also changed?

MR. POTTER: Well, I think the BPU was very wise to add on some kind of premium, because there are these non-price factors that make cogeneration inherently more efficient, and better for the environment, and such. We didn't address whether that 10% figure should remain or not, but we did feel that there should be some explicit consideration of those non-price benefits from cogeneration. One of which, of course, is getting rid of our solid waste, another is reducing acid rain. There's so many benefits that you get from it, other than just making electricity, that there should be some kind of a premium, I think. Massachusetts has gone to this, by the way. They recently set up what they call a solicitation and bid system, where utilities seek offers from the cogenerators to come in, and they do a scoring of each cogenerator, and you weigh it as to how they come out on the top, based upon price, and fuel that would be used -- is it a renewable resource -- and things like that. So, that's another very attractive way to do it. I don't know if I answered your question, excuse me.

ASSEMBLYWOMAN OGDEN: It was my understanding that the 10% had roughly to pay the cogenerators for what the capital costs were that they were assuming as opposed to the utilities assuming them and building a generator. And you wonder, with the costs -- particularly with Hope Creek now coming on being particularly larger than anyone ever thought -- whether, you know, 10% is the right amount. That 10% was set back when, in the late '70s?

MR. POTTER: Nineteen-eighty-one, Yes.

ASSEMBLYWOMAN OGDEN: Or '81? Okay.

MR. POTTER: Well, I think that would be one important issue to consider in hearings. Really, all we've done is set forth a formula -- or a few alternative formulas -- and then

call upon the Board to hold hearings and reconsider their 1981 order, which, as I pointed out, they said back then that they would do at some point. So, I think the ultimate result on this is still out there to be determined, including the 10% figure.

If I just might add one other point, what the cogenerators said to us in a few days of hearings is that just as important as the amount of money they might be able to get by selling electricity is the security that there will be a steady revenue stream, that it won't fluctuate wildly. And that's why we've proposed some of the things we have. If a utility projects its own future PJM rates, we think that is one opportunity that a cogenerator ought to avail himself or herself of.

ASSEMBLYWOMAN OGDEN: Just to go back for a moment along the line of questioning that Art was posing, the advocacy of cogeneration does not preclude the utilities themselves from being involved in cogeneration. I mean, there already is a division or unit, I believe, of Jersey Central--

MR. POTTER: PSE&G, yeah.

ASSEMBLYWOMAN OGDEN: --and as I understand it, they could go into that as a profit making effort.

MR. POTTER: I thank you for pointing that out. I see I scribbled a note here and then didn't make that point. Utilities are now becoming holding companies, and one reason is they want to get into the cogeneration action too. They're setting up their own companies that would do it.

There is, however, a provision in the federal law against a utility owning more than 50% of a qualifying facility that'll go to cogenerator. And we think-- That's clearly done for purposes of maintaining the competition, but we think that over time, as you get more cogenerators out there and you get a better sense of things, that that figure will change. And in

fact, recent decisions at the federal level have already eroded that 50% figure. Utilities want to get into cogeneration too. They can see it's the way to the future.

ASSEMBLYMAN ALBOHN: I'd like to comment on that. I am a little suspicious of that, to be honest with you. You know, these days the utilities have to do things to be popular, and that I suspect is one of the reasons for their strong interest in cogeneration, because it's the thing to do. And maybe one of the-- I won't deny that there may be some money in it also, but that brings me around to the other side of the question. You know, you talk about cogeneration being twice as efficient, well, I think that depends on how you calculate it. But let's assume for the moment that it is twice as efficient, then the cost of energy is half as much, so therefore, why should there be so much concern about the formula by which the utilities would pay for the energy that is delivered to their lines? And why shouldn't it float with whatever rate the utilities have set for them by the BPU?

MR. POTTER: Well, it may seem repetitious, but, if there isn't some reasonable assurance of a fairly steady revenue stream, you won't get the cogenerators there. We've seen it. The last five years there's hardly been any new cogeneration added in the State. But in those states that have come up with what they call standard offer contracts and other ways of giving some kind of reasonable security to an investor, cogeneration has flourished. And as an anti-trust professor I had in law school used to say, you can't have competition without competitors. We need to get some kind of a viable industry in the field, and if you will, perhaps some kind of protection isn't as merited for a brief period of time until that happens. They've had many obstacles over the last 40 or 50 years that have held down cogeneration, and we think it's merited to focus upon their problems today. That's why Congress enacted PRPA in 1978; and it's one reason that

California, in its latest energy plan is now trying to deal with the problem of too much cogeneration. Ten years ago, the utility said, you'll never see it, it won't happen. Now they're saying, my god, what do we do with all this cogeneration?

So, it's a very powerful way to get alternative power going. In California they're burning almond seeds, and in Pennsylvania they're considering burning coal waste, and I just read of a system that would burn waste tires in a pyrolysis technique that would get rid of those plus produce electricity. Tomorrow at Princeton University they're holding a day long workshop on new systems of cogeneration which they think will just send through the ceiling the future potential of cogeneration -- something called steam injected gas systems. The innovation in this area is just phenomenal, and it's a tribute to the power of the marketplace. And all we're trying to do is get that marketplace working, and have it work fairly. And if there are biases in this, I think they will be identified and reduced if not eliminated in hearings before the BPU.

ASSEMBLYMAN ALBOHN: Because, you see, one of the other features that you mentioned there a few minutes ago is the fact that a premium might be appropriate in order to meet social or environmental objectives. I think that appears in your script -- you didn't say it quite that way here.

MR. POTTER: Yes, sir.

ASSEMBLYMAN ALBOHN: But, it seems to me you're asking, then, the regular rate payer to pay extra in order to allow the utility to pay extra to the cogenerator to meet social or environmental objectives that I, the rate payer, might not share. And it just seems to me that the Department of Energy is reaching too far when it reaches out into social and environmental objectives as part of the justification for whatever kind of a rate structure they want to set. It seems to me that the whole situation should hang in there or fall

apart based on pure and simple economics, because I have a lot of environmental and social objectives I'd like to meet too, and I don't think that we should go around behind the barn to meet them in some hidden way.

This is one of the things that concerns me. You know, I just get a feeling that-- I don't know what the charter of the Department of Energy is in so many words, but I don't know whether or not you have the power to direct the BPU to do this, that, or the other thing. But that same kind of phraseology comes through all through this, and it makes me very much concerned about what the Department of Energy thinks its status is in State government. You're going to direct every department in the State to do something or other. I'm not so sure that's the Department of Energy's function.

MR. POTTER: Well, it seems to be pretty clear in the Act that the DOE is supposed to do an energy master plan that will govern for a period of ten years the production, distribution, consumption, and conservation of energy in this State. And then we're supposed to create long-term objectives, and shall provide for the interim implementation of measures consistent with those objectives. What we've done is created a framework, and the final authority on these matters still rests with the BPU. We're just trying to instigate some action on it, and create some general policies on it.

But, the Act-- As far as the legal effect of the plan, it's-- The DOE works through other agencies. Section 15 of the Act describes how it is -- and I quote, "It is the intention of the Legislature that the actions, decisions, determinations, and rulings of the State government with respect to energy, shall, to the maximum extent practicable and feasible, conform with the energy master plan adopted by the Department pursuant to section--" and such and such.

So, it's-- If this sounds like we're being a little heavy-handed, I think we're trying to be-- Sometimes clarity

sounds like heavy-handedness. All that we're trying to do is create that framework; the BPU would have to make a finding. Is it practicable and feasible to do some of these things? With the Department of Environmental Protection, is it practicable and feasible to have this expedited process for making decisions on permanence? We're not saying they have to give them permanence, but merely make as rapid as possible a decision on it. And we do have some kind of agreement already with DEP with respect to permanent reviews. I'm sorry to talk so much.

ASSEMBLYMAN ALBOHN: Gee, I'm interested in hearing that, because as a representative of private industry, we would very much like to expedite DEP, you know. And maybe--

MR. POTTER: Come see us, we'll help you out.

ASSEMBLYMAN ALBOHN: I have a little boiler -- a little hundred horsepower boiler -- that I'm having trouble getting a stack permit for, and we would sure like to be able to expedite that. Maybe if we cogenerate a little something with it, why we could get it very quickly.

MR. POTTER: There you go.

ASSEMBLYMAN ALBOHN: But, you know, that's the wrong way to do things. You know, what's good for the goose is good for the gander. And if DEP is being overly obstructionistic in its handling of stack permits, for example, then let's work on a level playing field. You know, let's let everybody have the same advantages.

MR. POTTER: Well, sir, for a long time the utility goose has been able to exclude anyone else who wanted make electricity and sell it anyplace else. So the cogeneration gander is, we think, deserving of an equal opportunity.

I think we're trying to get the same place you are. We may have some debates about exactly how to do it, but we're trying to do that.

ASSEMBLYWOMAN OGDEN: Thank you very much, Bill, for presenting the case for cogeneration and the policy of the Department of Energy.

At this time I'd like to call the representatives of the BPU. We've talked a lot about the BPU, and I think they should be given a chance to speak for themselves. And then after that Donald Deieso is here from the DEP, and we'd like to hear from him briefly, and there are two other individuals here who have a time constraint -- Freeholder--

Thank you very much Bill.

ASSEMBLYMAN ALBOHN: Thank you, Bill.

ASSEMBLYWOMAN OGDEN: Are you going to be staying around--

MR. POTTER: Oh, yes.

ASSEMBLYWOMAN OGDEN: --Bill, to answer any other questions that people have? Okay, good.

Freeholder Refener, and the representative from Jersey Central. So we would like to have every -- all those people speak within the next hour, so that we meet these deadlines before 12 o'clock.

Murray Bevin and Steve Gabel -- both of you.

M U R R A Y B E V I N: Just quickly then, for the record, my name is Murray Bevin. I am Assistant to President Barbara Kern at the Board. With me is Steven Gabel, who is our Director of the Division of Electric at the Board, and individual that we at the BPU consider to be really our expert on cogeneration and, in fact, maybe a national expert in that area.

Assemblywoman Ogden, Assemblyman Albohn, I've got a brief prepared statement, and then Steve and I would be glad to field some questions, and maybe address some of the issues that Bill Potter raised in his testimony.

I want to thank you for the opportunity to present the views of the BPU on the development of cogeneration in New Jersey. We view cogeneration as a viable alternative to the

construction of central generating stations, and we believe that they can bring multiple benefits to the State -- benefits of more efficient fuel use, reduced capacity and financing costs for utilities, and expansion of the State's commercial and industrial base.

I'd like to review briefly several areas where the Board has been active for some time, in fact, in promoting cogeneration.

The Board has developed a series of buy-back rates, as Bill had indicated, and tariffs, which ensure that the cogeneration facility will have a market for its electric energy by selling it to local utilities. These rates are based on a cost standard which is mandated by PURPA, which is the Federal Public Utility Regulatory Policy Act. PURPA states that the cogeneration (indiscernible) the cost of alternative capacity and energy which the utility is able to avoid by purchasing power from a cogenerator. As a practical matter, these costs are those which the utility is able to avoid by not having to purchase energy from the PJM interchange.

We have added an additional 10% premium as an inducement to develop cogeneration. The utility must also pay for the cogenerated capacity on the basis of the value of that capacity to the power pool. In developing the standard -- and we think this is very important -- we have been careful to set the rate in a manner which provides adequate incentives for cogenerators, but does not impose more costs than are necessary upon State ratepayers.

Number two, the BPU has provided orders to all major electric utilities to negotiate long-term stabilized rate structures, which will give the cogenerator greater certainty of the revenues to be received from electric sales to the utilities and make it easier for the cogenerator to secure project financing.

The third item: The BPU has developed stand-by and back-up rates which are considerably lower than any of those among the Northeast states, which enable cogenerators to buy back-up electric service from utilities when they experience down time.

Number four, the BPU has worked out agreements with PSE&G whereby PS has agreed to transmit cogenerated power to other utilities who may be willing to offer more for the power than PS would.

Five, the Board stands ready to intercede in negotiations between cogenerators and electric utilities upon request, and the Authority of the Board, either on an informal or a formal basis, is sometimes a strong motivating factor to quick development of purchased power contracts.

I also think it's important to note that the Board's interest in promoting cogeneration pre-dates the passage of PURPA, and we have implemented buy-back rates before the Act was passed, and have improved upon those policies since then.

Those are a few of the highlights. I think Steve has a couple of other comments, and then we'd be glad to take any questions you have.

S T E V E G A B E L: Thank you. Assemblywoman, you asked earlier of Bill Potter, in what areas he sees disagreement or agreement with the Master Plan and the Board's policies. I'd like to try and address that.

I think, by and large, as I'll run through, there is a list of areas that the Master Plan talks about or recommends that have been in place for some time and, in fact, address most of what the Master Plan has asked for. They have been in place, in fact, before pencil was put to paper to write the Master Plan. So, in many ways, we're very satisfied with what we've got. We're not standing still, and I'll talk about some of the areas where we're not standing still.

But, the Master Plan talks about putting in place stand-by and back-up charges. So, if a cogeneration facility does go down, either on a planned or unplanned basis, they know they can go to their local utility and get electricity when they need it. The utility will not turn them away; they will not charge them an excessive price. We've had those rates in place for quite some time. We re-did them, in a sense, in 1981, and we reduced them all by roughly a factor of one-half. We looked closely at those costs and put in place rates which we believe are fair. They are not a subsidy for anybody, but they are cost-based and fair to both sides.

ASSEMBLYWOMAN OGDEN: I think the point that was made in the Master Plan was that it was based on down time of about 15%, and actually it was closer to 5%. It would be owed either for advocated lower rates--

MR. GABEL: Yeah, yeah. I still think at this point-- As I recall the Master Plan, I don't know if there is a source on that 5% estimate. I don't see that in this State. Again, we're still in the infancy, and we don't have the experience. We think 15% is a fair number. If you hold our stand-by and back-up rates up against other states in the Northeast, you'll find that they are below those rates. So, if you want to-- If you're looking through those competitive eyes and want to see how we compete with those around us, the rates are very fair.

Rate-setting, we like to pretend, is a very fancy science, but sometimes you get in a position where you're setting rates for a new technology, and you've got to make your best estimate. At that time, 15% was the lowest estimate that was on the record in that case, and there were interveners in that case from cogenerators, the Department of Energy, the utilities, you name them, and we took the lowest number.

ASSEMBLYWOMAN OGDEN: I know that one specific instance that I was aware of -- it was in connection with our

joint meeting -- is a regional sewage treatment plant that is extracting methane gas from the process and using it to power the pumps. And they feel that the back-up price is excessive. I guess what I should tell them to do is to go to the BPU and ask for lower rates.

MR. GABEL: They can do that or if the back-up rates are excessive-- I guess if you view the retail rates as excessive, you'll probably view the back-up rates as excessive. Let's put it that way.

ASSEMBLYMAN ALBOHN: What was the date on which this 15% figure was set?

MR. GABEL: Nineteen eighty-one -- October of '81.

ASSEMBLYMAN ALBOHN: That was just approximately.

MR. BEVIN: It's that October 14 order that I gave you.

ASSEMBLYMAN ALBOHN: Oh, I see.

MR. GABEL: Along the same lines with the back-up, the Federal government -- the Federal Energy Regulatory Commission -- issued an order about six months ago, which many viewed as a major impediment to cogeneration development. It would have limited stand-by and back-up power to third-party cogenerators, and made it so it was not a requirement for utilities to provide that backup. When that order came out, we got in touch quickly with the utilities, and working with them, we have an agreement with each and every one of them that they will continue to provide stand-by and back-up power in those situations.

The Master Plan talks about a wheeling policy. The fact of the matter is that the Board has very limited jurisdiction over wheeling rates. We cannot set wheeling rates. The Federal government sets wheeling rates.

Be that as it may, we worked closely with Public Service Electric and Gas, and we were able to work out an agreement with them that despite the fact that we don't have authority over them, they will wheel power. They are setting a

wheeling rate which will be out very soon. That enables cogenerators who may not want to sell to Public Service, but may want to sell their power to Jersey Central, which has a greater need for it, to do so.

We have a facility in Bayonne, which is a 125-megawatt cogeneration facility, which will be in Bayonne, obviously, in Public Service territory, but wheeling their power to Jersey Central. So, that's a policy--

ASSEMBLYWOMAN OGDEN: The wheeling rate is what? Basically the cost of building the transmission lines, or the cost of replacing them?

MR. GABEL: Well, we've-- There is a debate over that. Many say you base it on the cost of a new plant. That's a higher cost. What we have said is, base it on the same costs of transmission that's in everybody else's rate. Embed it in your rate as a little charge for transmission, although obviously you don't see it. That's what they will pay.

The area of negotiations that the Master Plan talks about is a process -- a formal process -- whereby the utilities or the cogenerator will be working on certain time tables. There will be certain times in which the Board would step in or not step in. We don't have that right now. We have something which we view as a lot simpler and a lot more efficient, and it's very simple. If the cogenerator has a problem, or a utility has a problem, they pick up the phone, they call us up, and we will come in and intercede in those negotiations to the extent necessary to bring the parties together. We're not on the cogenerator's side; we're not on the utility's side. We are looking for a fair deal because we know that whatever happens, it is going to end up in everybody else's rates.

In the area of long-term contracts, Bill talked about how there is a need for those. We agree completely and, in fact, all of the utilities in the states are under order. You have an order dated from 1983 in the package that directs the

utilities to do so, and they, in fact, have signed long-term contracts to various cogeneration facilities or hydro-facilities, so that those cogenerators can go to their banks and show them, in hand, a long-term rate and secure project financing. So, that is in place.

The only one I talked about-- There's one area where there may be some disagreement. It is on that definition of avoided costs, which to review, is that cost which the utility is unable to avoid by virtue of buying from these cogeneration facilities.

The Department of Energy talks about basing that avoided cost payment on two factors: One is for the capacity that the cogenerator provides to cover his fixed costs. The Department of Energy argues that those cogenerators should be paid the cost of a new coal unit and then, on the other side, to pay that cogenerator for his energy costs; they argue that they should be paid on the cost of an old oil or gas plant. But, what does that mean? What that's telling you -- and if I can use a little analogy here -- is, if I came to you and said, "I want to provide limousine service to you down to the Assembly whenever you come down, and I will cut you a deal. I will charge you no more than you currently pay for your own transportation," and you take out a pencil and paper and begin to work that out. You've got an old car -- an old, say, 1969 Chevy -- and you're paying \$50 a month on the loan payments for that car. That's to cover the fixed cost and the maintenance. And it's very fuel inefficient; you're paying \$200 a month for gasoline.

You might say to me, "I don't want to pay you any more than \$250 a month because that's what I currently pay." Or, you may say to yourself, "I'm in the process of buying myself a new car, and the monthly payments are going to be \$250 a month for the bank loan and the maintenance, and the fuel costs are going to be lower than an old car by \$100 a month." And you may come to me and say, "I'll pay you \$350 a month."

What the Master Plan is telling us to do is to pay-- It is for you to pay me on the basis of the monthly loan payments of the new car and the fuel costs of the old car. We see a major mismatch there. You would be paying me \$250 a month, plus \$200 a month -- the high cost of the capital and the high cost of the old fuel-inefficient car. We don't view that apples and oranges approach as being in your interest if you were paying me for the limousine, nor is it in the interest of the utility who is trying to get power at the lowest possible cost.

We, instead, use that PJM rate. Bill Potter talked about how the PJM rate is based upon a short-term view. That is not the case. As the order describes -- or both orders describe-- The cogenerator should be using, if he wants that stability, the long-term forecast of the PJM rate. And he should base, if he so desires, his contract on those long-term forecasts. In fact, that is what is occurring in the State.

We do see a need for stability and perhaps some standardization of contracts, and we are looking toward that end.

To summarize, I've hit on five areas where I think we are well in place. In fact, we like to think of ourselves as ahead of the game in getting a fair policy in place. In the area of avoided costs, I think I've covered why we see some problems with what the Master Plan recommends.

ASSEMBLYWOMAN OGDEN: Do any of you have any questions?

ASSEMBLYMAN ALBOHN: No. I think this has the makings of a great debate between Bill Potter and the BPU. I just-- I don't understand it, really.

ASSEMBLYWOMAN OGDEN: Excuse me. A question I'd like to ask is your reaction to the DOE advocating a value of service as opposed to cost of service.

MR. GABEL: I want to be careful there. In terms of the cogeneration policy, in a sense we do that. We establish

the cogeneration rates on avoided cost, which is the market value. I said I wanted to be careful because the Department of Energy--

ASSEMBLYWOMAN OGDEN: No, I think he was talking about more than market value.

MR. GABEL: Right. They've talked about doing that for the cost and rate streaming of new power plants, as well. They have, in fact, proposed that in the ongoing Public Service Electric and Gas case -- that the new power plants should be valued at value-of-service rates, and I don't think the Board can comment on that at this time. It's part of the record in that case, and a decision isn't expected until later in the year.

ASSEMBLYWOMAN OGDEN: Another question in the area of resource recovery and cogeneration: Do you think that the buy-back rates for cogenerated energy from resource recovery should be at the same level as, for instance, from industrial facilities?

MR. GABEL: Yes, we do. The value from an electric utility viewpoint, and this is where these costs end up in your electric rates-- The value of the resource recovery's kilowatt hours and the cogenerator's kilowatt hours are no greater if they're delivered at the same time.

The are arguments that there are a lot of social or environmental reasons for promoting resource recovery. We don't think that should be done through electric rates. There are legislative routes to do that, and they have, in fact, been exercised.

ASSEMBLYWOMAN OGDEN: So, there wouldn't be any particular incentives that you would advocate to have more cogenerated power from resource recovery facilities.

MR. GABEL: No, they will get paid the economic value of their power. It will be valued on a long-term basis, so they get some stability in that rate, and we believe that's sufficient.

MR. BEVIN: I think a lot of people in the resource recovery discussions have not looked at that rate as an integral part of the overall financing, and obviously we see that as very important. But, at this point, the Commissioners have no plans to change that.

ASSEMBLYWOMAN OGDEN: I have no more questions. Do you, Art.?

ASSEMBLYMAN ALBOHN: No. I'm glad to hear that you don't have any social or environmental objectives in the BPU because that's really none of your business. The Legislature will take care of that in its own wise or unwise way, as the case may be. I don't think it belongs with any State agency to take that kind of philosophy on its shoulders. I have nothing further.

ASSEMBLYWOMAN OGDEN: Thank you very much.

MR. GABEL: Thank you.

ASSEMBLYWOMAN OGDEN: Next I would like to ask the Director of the Division of Environmental Quality of the DEP, Donald Deieso, to speak.

D O N A L D D E I E S O: Chairwoman Ogden, good morning to you. Assemblyman Albohn, good morning. The DEP stands in full support of the cogeneration issue under way in New Jersey. We do so primarily because of the greater energy efficiency afforded by the thermodynamics of the cogeneration cycle. In short, cogenerators use more of the energy available in fuel.

While our philosophical support may be important to some, let's examine the practical role played by DEP in the cogeneration drama.

Pursuant to State and, in some instances, Federal air pollution law and regulations, cogenerators must apply for air pollution permits. While more efficient than fossil-fired boilers, cogeneration facilities do emit air pollutants. Without proper designing and control equipment, the full environmental benefit of the improved efficiency of cogeneration may be offset.

Through the permit program, DEP can assure that applicants will incorporate the state of the art in air pollution control in all the cogeneration equipment installed in our State.

I am sensitive to the allegations that permit applications take too much time. I can assure you that if properly prepared, an application can be evaluated and approved by DEP in less than 90 days. In fact, I can cite an instance in which a cogeneration facility from proposal to approval took less than 60 days.

We have worked closely with our Department of Energy toward the goal of developing a cogeneration application package which provides the applicant with clear direction in permit requirements. If there is to be any streamlining in our efforts, it will to ensure that the applicant knows precisely what we are looking for.

In closing, DEP believes that cogeneration is a valuable piece of the State's energy mosaic. It offers several distinct advantages -- most notably, increased energy efficiency. Of no less importance, however, I should emphasize that many waste disposal facilities can be operated more economically by selling power. An example: The tipping fees of resource recovery facilities can be reduced through the sale of electricity produced by the burning of solid waste. In so doing, an added incentive exists for the financing and operations of disposal options -- clearly an environmental gain.

I appreciate the opportunity of offering these comments, and I'm prepared for any questions you may have.

ASSEMBLYMAN ALBOHN: Just one quick question. I think we're getting confused -- several of us -- on that side and on this side with just what cogeneration means. I get the impression from something you just said, and from something one of the earlier speakers said -- that simply burning refuse and creating electricity from it amounts to cogeneration. Now, in

my terms, that does not. You're simply using refuse as fuel for electricity generation.

So, when we speak of refuse as a fuel for cogeneration facilities, we're only talking about it, if that's used in conjunction with some other use of steam or hot water or whatever may come from it. Of course, we don't have anything of that sort on the ground in the State yet, and I'm not sure if Essex County, or any of the others, are even approaching that kind of a situation. Are they? Do you know offhand?

MR. DEIESO: Well, on the latter point, Assemblyman, Essex has a permit that has been approved by our Department. It's a permit to--

ASSEMBLYMAN ALBOHN: I mean as a cogeneration facility, or simply as a generation facility, or simply as an incinerator.

MR. DEIESO: It's been approved as a resource recovery facility, producing approximately 60 megawatts of electricity. The actual definition of cogeneration, to me, has been rather elusive, and I think as the years progress, it's taking on several different facets. I suggest that I'm probably the least qualified to give you an accurate assessment. In our view, cogeneration is very simply recovering energy that otherwise would have been wasted.

And, if we look at, I guess in a strict sense, a cogeneration facility, such as that that we have here in Trenton, it's producing both heat and electricity. What's important to us is that piece that's producing electricity would otherwise have been wasted. That energy would have been discharged to the atmosphere. Instead, it's now producing electricity, and I think in that sense, the resource recovery facility is very much the same.

It's primary goal, of course, in the disposal of solid waste. But, if we can benefit by using some of that energy in the production of electricity or heat, it is a cogenerator, and it certainly is to us an environmental positive.

ASSEMBLYMAN ALBOHN: I just had a feeling that we were talking about cogeneration, or different people were talking-- To me, it means a heat use, as well as an electricity use. On the other hand, I get the feeling that some people -- who was it? I guess it was the queen in "Alice in Wonderland" said, "When I use a word, it means exactly what I want it to mean." I think maybe that's the way cogeneration is going too. But, it means all things to all people.

I have no other comments. I appreciate your efforts in DEP to expedite the permit issuance, and I think I'm perhaps sensitized to that because of the new Committee assignment. Everybody sends their complaints to me. I'm the complaint Department for DEP, and I'm trying to do something about it.

ASSEMBLYWOMAN OGDEN: You must get a lot of mail, Art.

ASSEMBLYMAN ALBOHN: Yeah.

ASSEMBLYWOMAN OGDEN: The DOE and the Master Plan call for a one-stop shopping permit for the cogeneration applicants with the DEP. Are you moving in this direction?

MR. DEIESO: We are.

ASSEMBLYWOMAN OGDEN: Is it possible?

MR. DEIESO: It is very possible. Most of the obstacles that we face in the permits come not from internal reviews, contrary to some allegations -- in fact, Assemblyman, some allegations you may hear in the permit process. It comes from rather the fact that the permit applications are so poorly prepared in most instances.

We urge cogenerators, as we urge any other applicant, to meet with us before -- very early in the conceptual stage. In some instances -- tragic instances -- we'll have an applicant come to us after the equipment has been purchased and delivered, and now they'll ask what can be done to retrofit or to correct that piece of equipment that, to us, is unacceptable. Now, that clearly is not to anyone's advantage, especially in light of the fact that our doors are open, and we

would encourage any applicant to meet with us when you have the gleam of an idea. And, at that point, let us suggest to you exactly the pieces of equipment and hardware that will be approvable. If we see that application, and the equipment is there, as we suggested, that application can proceed very smoothly through the process.

The glitch is developed, I think, in most instances by an applicant not doing enough of the preparatory work prior to the application.

ASSEMBLYWOMAN OGDEN: So you have definite standards and a time period in which you'll respond to the applicants.

MR. DEIESO: Yes, yes, and let me state for the record that we're prepared to meet not only with cogenerators, which is the subject here today, but any applicant in the early stages. That energy and that time is time to us well spent, and that hour or two hours in sharing our requirements with them in those early days are well, well worth it to both parties.

ASSEMBLYWOMAN OGDEN: I guess somehow the message needs to get out that this is the thing to do. I know that several potential cogenerators had contacted me to say that the DEP didn't know what the standards were, and they were having a lot of problems.

MR. DEIESO: Well, I can assure you that we know full well the standards. I won't promise you that we have communicated them as effectively as we can. The purpose of the package that we will develop and offer to cogenerators essentially will be a road map. It will guide them through the process and indicate which pieces of equipment and hardware are approvable, and the reasons why.

ASSEMBLYMAN ALBOHN: All they're normally talking about is a stack permit for an internal combustion engine, right?

MR. DEIESO: Indeed. But, what comes of it that complicates the matter further, Assemblyman, is that nitrogen oxides are one of the major air pollutants coming from cogeneration facilities. In fact, if we take a look at the gas turbine, which is the primary motive source of energy for cogenerations, their operating temperatures are very high and the nitrogen oxide emissions are very high. Now, there are control measures for nitrogen oxides. Those measures must be incorporated in that design, and the applicant can squander six months of time in debating which piece of NOX control equipment they choose to install.

It's very simple to us. We have several items and several control devices that we suggest very early on. Here's a gas turbine. It's approvable. It's approvable if you have NOX control that will assure NOX emissions less than 100 parts per million. If you have hydrocarbons and you have no control device, that gas turbine or diesel engine should be tuned in such a way to keep the emissions down to this level.

So, I think all of those steps are easily accomplished, and they are easily accomplished in the initial design.

ASSEMBLYMAN ALBOHN: I appreciate your comments on that because it appears from some of the Department of Energy's publications that they make much, for example, of what to me are unproven reductions in acid rain, whatever that may be -- more "Alice in Wonderland" I guess -- without recognizing at all the potential air pollution characteristics of a host of small inefficiently controlled cogeneration furnaces or turbines or whatever. I'm glad you're conscious of-- I would expect you to be at least as conscious as I am, I suppose, of those things -- that the goodness of cogeneration does not overcome its air pollution characteristics.

MR. DEIESO: I assure you of our vigilance.

ASSEMBLYWOMAN OGDEN: Thank you very much, Director Deieso. Next I'd like to ask Freeholder Rufener to speak in connection with, I guess, it's the potential resource recovery facilities in Morris County.

F R E E H O L D E R C A R O L R U F E N E R: Good morning, Assemblywoman Ogden, Assemblyman Albohn, ladies and gentlemen. My name is Carol Rufener. I am a member of the Board of Chosen Freeholders, County of Morris, and I serve as chair of the Freeholders' Committee on Planning and Development.

My appearance here today is on behalf of my Board to tell you that we share mutual concerns in the generation of energy -- the cogeneration of energy -- and, Art, that's however the Queen of Hearts defines that -- energy uses, and energy marketability.

As you know, New Jersey's 21 counties are all grappling with the problem posed by our solid waste, and all of us face the same dilemma of how to dispose of it using environmentally safe and economically sound methods.

Under the direction of the Department of Environmental Protection, we all roughly on the same time line, since the few remaining landfills are expected to close within five or ten years. By that time, most of us will have resource recovery plants on line and small landfills to take the residue.

The number of plants and landfills are still a subject of somewhat heated discussions, as I'm sure you know too. We in Morris County expect to have a landfill first, and then a resource recovery plant operating within the next five years. The initial estimates place the cost of both facilities near \$300 million, and it is part of the County's plan to recover some of those costs by generating steam and possibly electricity at the resource recovery facility.

We have been engaged in discussions with the Department of Defense about the possibility of piping the steam generated at our Rockaway Township site to the U.S. Army

Armament Research and Development Command at Picatinny to augment the energy system it now uses. To date, there have been no conclusions on the feasibility of the plan or its economic benefit to either side.

We believe it would be a contribution to the national defense effort for the State's large military installations, such as Picatinny, Fort Dix, and Fort Monmouth, to use this low-cost energy source, as is appropriate.

We assume the other counties are engaged in similar studies looking for ways to sell some of the energy generated to an end user who would benefit from the investment being made by the taxpayers. We both share the same taxpayers to support government efforts. Our taxpayers are your taxpayers, and somewhere along the line, we owe them a break.

We are not advocating that the utility companies in New Jersey become the buyer of last resort or that we force the electricity we generate upon them, whether they want it or not. We are indeed suggesting that government agencies be the preferred user of the steam and electricity that will be generated at our county facilities. We think it would not be amiss to make one of the cornerstones of the State policy that our government agencies be asked to use this energy.

It can be used to heat jails, courthouses, nursing homes, and institutions, such as State residential facilities, colleges, or even the State House complex.

Our Solid Waste Advisory Committee has many ideas for siting, and we are submitting additional written testimony for your review at a later.

What we are here today to do is to raise a flag. We want you to remember and to be aware that when you discuss energy in New Jersey, the counties will be producing energy -- be it steam, refuse-derived fuel, or electricity -- and they will need markets for it.

Any future legislation must take into account the mountains of garbage that will be burned and the massive investment in the facilities.

Thank you very much for the opportunity to be with you this morning. I'll be glad to address any questions you have at this point and to provide information of an additional nature, if you request it.

ASSEMBLYWOMAN OGDEN: Thank you, Freeholder. Art?

ASSEMBLYMAN ALBOHN: Just sort of tongue in cheek by your proposal that the energy from solid waste be used to operate government facilities. As a County agency, I think a lot of people in Morris County, elsewhere than where the Courthouse is, would be glad to see the facility down near the Courthouse. But, the problem with your suggestion is that the facility's siting -- the siting for solid waste facilities and the siting for government facilities -- are two different problems, two different kinds of problems, and I'm not so sure how close they can be together.

It's my understanding that just down the street here in Trenton, we have such a facility which, I guess, is generating electricity and is also heating the Department of Labor and Industry building. I'm not sure, but it's right diagonally opposite the Department of Energy -- or, the Department of Labor and Industry building.

Bill, can you enlighten me on that? Is that correct? Is that a waste-to-energy plant there?

MR. POTTER (from audience): No, it's burning natural gas and some diesel oil. It's not burning solid waste.

ASSEMBLYMAN ALBOHN: Oh. But, that is a cogeneration facility then?

MR. POTTER: (from audience) Yes, sir, it is. It's producing steam and heat.

ASSEMBLYMAN ALBOHN: Okay. All right. Maybe I shouldn't comment on this publicly, but the rumors I hear are is that it is something less than a successful installation. I don't know how true that is.

But, the problems are great. That is really what I'm trying to say. I know that Morris County would like to have Picatinny pick up the problem, but I don't think that's really the solution.

It may well be that solid waste is going to have to generate electricity, it's true, but not be a cogeneration facility and simply discharge its waste heat by way of a cooling tower or whatever other means may be appropriate. I don't have too much hope for that.

FREEHOLDER RUFENER: Assemblyman Albohn, in terms of Picatinny picking up the problem, we would be glad to sell them steam because of the costs involved. We do understand that siting for government facilities, in any case, has already been done and that siting for resource recovery plants is a 1980's/1990's effort.

We did see a plant in downtown Nashville that supplies steam, and it has supplied steam on a regular basis for the last 10 years to government -- county and municipal -- buildings in that City.

But, from time to time, the State -- and each of the counties -- goes into a major capital effort of producing a new facility. As they do that, these ideas should not be lost. And, sharing them with you today is one mechanism we have for helping to underscore their importance of where they can be used.

ASSEMBLYMAN ALBOHN: I am supportive of your efforts. Don't misunderstand me. But, I think we cannot look at pie in the sky, in some instances, as being the solution. Nashville? Sure, they have a whole downtown steam distribution system in Nashville now as a result of that plant, but that's because they sited the thing there.

If we wanted to-- You know, if you could site a land-- a sol-- a resource recovery facility in the middle of Newark, it could probably economically supply heat to all of Newark, but you know what the chances of that are. I could more readily fly than accomplish that.

FREEHOLDER RUFENER: Isn't there a resource recovery--

ASSEMBLYWOMAN OGDEN: Yes.

FREEHOLDER RUFENER: --plant in the Ironbound section? I don't know who they plan to sell their energy to, but I think there is a plant in Newark.

ASSEMBLYMAN ALBOHN: Okay, you may be right at that. Okay. I beg your pardon.

ASSEMBLYWOMAN OGDEN: There is. It's not in the middle of Newark, and there are those opposing it. To me, your presentation, Carol, raises two questions. One is with the resource recovery plant that is about to go ahead, I believe, in Essex County. They are selling their excess steam to Public Service, which is just on the other side of the Turnpike there, and I know that when the plans were going ahead in Union County, they were going to sell theirs to Merck. In many cases, this is what is happening.

So, I guess my first question is, in the planning, has Morris County found that there are no industrial plants or other utilities that are willing to take the steam and use it to power the turbines? Is this a key problem, number one?

And then number two, I guess my question is, is this in your advocating that they be sited, say, in a military base or near some public facility that could help in the overall siting problem? Is that part of the total--

FREEHOLDER RUFENER: When we looked at steam users -- potential steam users -- in Morris County, Picatinny by far and away is the biggest and the most concentrated. Even the County facilities, which would be the next biggest steam user, are spread out all over the place, so that a concentrated buyer was

immediately of interest. It is not only the major one; it is almost the only one we have. So, we did not have a lot of options in that direction.

The second thing is, there is no easy path to siting. Not just resource recovery plants and landfills, but a lot of things are difficult to site these days. And, any direction, approach, or assistance that is possible to facilitate things at this point in time, I would have to think would be most welcome by the sitters, the DEP, by the people who have ever had or think they might have at some point in time in the near future a disruption of garbage service.

You know, we are all committed to getting on with it, and getting on with siting those kinds of facilities is a major undertaking.

Thank you. If there--

ASSEMBLYWOMAN OGDEN: So, you're basically saying that your siting problem is somewhat different because of Morris County being more spread out, for instance, than your more urbanized Essex or Union.

FREEHOLDER RUFENER: Yes.

ASSEMBLYWOMAN OGDEN: I see. Art?

ASSEMBLYMAN ALBOHN: I have nothing further. Thank you, Carol.

ASSEMBLYWOMAN OGDEN: Thank you very much.

FREEHOLDER RUFENER: Okay. Thank you. Have a good day.

ASSEMBLYWOMAN OGDEN: Thank you for coming. The other person who had a time constraint is Gene McCarthy, who is Vice President of Rates for Jersey Central. I hope we've met your deadline.

EUGENE Mc CARTHY: Thank you very much. My name is Eugene J. McCarthy, Vice President of Customer Services for Jersey Central Power and Light Company.

First of all, I would like to thank this Committee for giving us the opportunity to comment on the very important subject or issue of cogeneration. We at Jersey Central believe that there is a significant potential within the State to develop this source of energy.

We also feel that a number of programs and customer contact initiatives that we have undertaken in the past and will continue to undertake in the future will further encourage the use of cogeneration where it is beneficial to all parties involved.

As I am sure the Committee members are aware, each utility's perspective of cogeneration is dependent upon the circumstances of the individual utility company. Because of our unique circumstances at Jersey Central, we have an especially positive perspective towards the development of cogeneration in New Jersey. Basically, these circumstances are our shortages of economic base-load capacity, and the fact that the construction of new base-load units with all of their attendant risk -- national and otherwise -- makes such construction our option of last resort.

We realize that we will eventually have to build new units. However, we believe that the longer we can prudently delay such construction, the better it will be for both us and our customers.

We believe that cogeneration can play a role in helping us meet the objectives which I just stated.

For your information, Jersey Central has been very active in the area of cogeneration. Our representatives have held in-depth discussions with over 100 of our commercial and industrial customers to determine if cogeneration is a viable option for their operation.

We presently have over 14 -- I think 14 -- customers with over 80 megawatts of cogeneration installed, and we've had these customers for quite some time -- since, I'd say, the late

'40s and early '50s. These customers didn't meet with obstructions by the utility company, and they installed cogeneration equipment because it made economic sense to them.

I would add that 32 megawatts of cogeneration total has been added to our line since, I believe, 1982. Some of the customers are Hoffmann-La Roche, the Freehold YMCA, which Mr. Potter referenced, Automatic Switch, M&M Candies, and so on, just to name a few of them.

In addition, we also offer a cogeneration feasibility grant study of up to \$2500 to customers who have a bona fide study conducted of their operational facility to determine whether it is a good candidate for cogeneration.

We've also established a new subsidiary company -- Energy Initiatives, Inc. -- whose purpose or mission in life will be to help develop the cogeneration market in New Jersey. We are committed to funding -- to providing \$5 million in funding -- to energy initiatives for the next five years. We believe that this new subsidiary will help accelerate the growth and development of cogeneration in New Jersey.

In addition, in September, 1985, we developed a standardized pricing offer for long-term contracts, which by long term, I mean 20 years, for the purpose of power from resource recovery and cogeneration facilities in New Jersey. This pricing offer was based upon our analysis of future avoided cost at that time, and was limited to 200 megawatts on December 31st, 1985, whichever occurred first.

I might add that these negotiations with the companies that signed up for the 200 megawatts of cogeneration were conducted and concluded without what Mr. Potter characterized as hassles or obstructions on the part of the utility company. I might add that the contracts-- The agreements with the potential developers were concluded in a very -- what we consider -- a very expeditious and diplomatic manner. It is not to say that there weren't disagreements, but they were resolved in a businesslike manner.

As we all realize, since that pricing offer was developed by us last September, there have been some dramatic happenings in the energy area. Assemblywoman Ogden mentioned this morning that the price of oil is now less than, I believe, \$10 a barrel, whereas just a few short months ago in September, 1985, I believe it was in excess of \$30 a barrel. As a result of our pricing offer last September, letters of intent were issued for the 200 megawatts of cogeneration.

As Mr. Gabel mentioned, one of the agreements was with Cogen Technologies to build a 125-megawatt facility in Bayonne, which will provide processed steam to a number of individual customers at that site. The power will be wheeled to us over the transmission lines of Public Service, and it is expected to be in service sometime in late 1987 or early 1988.

We believe that the activities that I've just mentioned are an indication of our positive commitment towards encouraging development and use of cogeneration in New Jersey. At this time, we are currently involved in extensive discussions with a number of other cogeneration developers regarding potential projects, both within and outside our service territory.

We are also in the process of establishing what our new pricing offer should be. Obviously, there are a number of conflicting points of view and potential for misunderstanding. The test of the appropriate use of cogeneration should be to make sure that the rates paid to cogenerators are fair not only to the cogenerators, but also to the total group of electric system customers.

There are other concerns which we, and I'm sure other utility companies, have regarding receiving power from an unregulated cogenerator, such as its reliability. Will it be there when we need it? Will the cogenerator maintain and operate the equipment with the same high standards that the utility companies use for their equipment?

As far as the need for legislation to help develop the cogeneration market is concerned, we have no specific recommendations to offer, other than to simply allow the marketplace to work freely with the least restrictions and impositions possible, so that the projects which make economic sense to both the buyer and seller can be developed and completed as expeditiously as possible.

As far as back-up power or stand-by service is concerned, we have developed a stand-by service rider for cogeneration and small power production facilities. For those customers who opt for billing on this rider, the regular monthly minimum charge for the service classification they are billed on is waived, and a reduced stand-by charge is imposed respectively for customers served under our service classifications GS, GP, and GT.

With regard to the issue of standardized contracts, we believe that such contracts would not materially expedite the process of bringing cogenerators on line. While there will be many so-called boiler plate items which can be developed ahead of time, each cogenerator will have a different set of circumstances -- different characteristics, such as location, size, need for wheeling, etc. -- that may and do require different contract terms. Therefore, developing contracts on a case-by-case basis will probably be more efficient than attempting to force-fit standardized contract terms to the situation.

In summary, from our perspective, the development of cogeneration in New Jersey is clearly desirable. However, utilities should not be required to support cogeneration beyond a point where economics are unfavorable and utility customers become unwilling subsidizers. We will continue with our efforts to help with the development of cogeneration in New Jersey, and we believe that the creation of our new subsidiary, Energy Initiative, Inc., will certainly help in this regard.

Thank you.

ASSEMBLYWOMAN OGDEN: Thank you. Art?

ASSEMBLYMAN ALBOHN: I'm delighted to hear you're moving so rapidly and so far. I didn't-- Did you say you already had 50 cogeneration customers in the system?

MR. McCARTHY: We have 14 cogeneration customers right now with over 80 megawatts of installed capacity.

ASSEMBLYWOMAN OGDEN: When you sign contracts with them, what is the-- I know that you said you don't favor the standardized contracts because there are different situations, but what's-- What would be the approximate length?

MR. McCARTHY: We-- Three contracts we-- There were three letters of intent that we issued last year. One was with Cogen Technologies of Houston, Texas; the second was with the Newark Box (indiscernible) Company for a facility in Newark; and the third one was with a project for Marcal Paper up in Paterson.

The contract with Cogen Technologies-- They first approached us back in, I'd say, about a year and a half ago. The serious discussions about the-- The serious contract discussions did not start until, I'd say, late August/early September of 1985. In 1984 when they first contacted us, it was mainly a fact-finding sort of an expedition to see exactly, you know, what we would require, and so on. But, we got down to brass tacks in late August or early September, 1985, and that contract was concluded by late October, and the contract was submitted to the BPU, I believe, right before election day.

As far as the Newark Box and the Marcal Paper project are concerned--

ASSEMBLYWOMAN OGDEN: Now, this contract runs for what? A year, three years, five, ten?

MR. McCARTHY: The Bayonne-- The Cogen Technologies' contract runs for 20 years, and I believe there is an option there for a five- or ten-year renewal. The contracts with the other two individuals -- the other two companies -- have just

been concluded, and I would state that they commenced some time in late December or early January. Again, during the whole period of time, they weren't negotiating contracts, and there were things that we were going back and forth on. Those-- The last two contracts are in the process of being submitted to the BPU right now for their approval.

ASSEMBLYWOMAN OGDEN: And they would also be the long-term contracts.

MR. McCARTHY: Both of those contracts, I believe-- I think the one with Newark Box is for 25 years, and I believe Marcal may be 20 years.

ASSEMBLYWOMAN OGDEN: That's certainly a period of time to give them an assurance that you're going to continue to purchase the power.

MR. McCARTHY: Yes.

ASSEMBLYWOMAN OGDEN: Art, do you have any questions?

ASSEMBLYMAN ALBOHN: No. I had not been that aware about all of the things that Jersey Central is doing. Maybe you could answer this question for me, and maybe there are other people here who should be answering it, but to the best of my knowledge, I only know of two other electricity companies serving the State. Maybe there are more. I guess there is Rockland too. That's right. I was thinking of Atlantic-- Atlantic City Electric.

MR. McCARTHY: Atlantic Electric Company.

ASSEMBLYMAN ALBOHN: Atlantic Electric Company and Public Service. Are they as deeply involved in this as you are, or less so, or more so?

MR. McCARTHY: I would prefer that they address that themselves. I believe the representatives from Public Service and Atlantic Electric are here today, Art, and they will be, I'm sure, addressing that issue.

ASSEMBLYMAN ALBOHN: Okay. All right. Fine. Good. I'd be happy to hear from them. I was just wondering, are you out ahead of the pack, or leading the pack, or behind the pack?

MR. McCARTHY: Well, again, as I tried to point out, the circumstances of each utility company are somewhat different. Ours is somewhat different than Public Service, for example, because of our shortage of economic base-load capacity. So, we do have a different perspective, and perhaps maybe a little bit more aggressive in encouraging or trying to assist in the development of the cogeneration market as opposed to the other companies.

ASSEMBLYMAN ALBOHN: Thank you.

ASSEMBLYWOMAN OGDEN: We do have our-- Atlantic Electric has asked to speak. Let's see, Public Service. But, we would certainly be glad to hear them. Thank you very much, Mr. McCarthy.

MR. McCARTHY: Thank you.

ASSEMBLYWOMAN OGDEN: The next individual on the list is Dennis Wilson of Data Acquisition Services. (not present) Oh, he's going to come in the afternoon. All right. Then we have Jorgen Christiansen of Raritan River Steel in Perth Amboy. And I see Bill Wood from PS&G wants to speak. We have it written in here.

J O R G E N C H R I S T I A N S E N: Good morning.

ASSEMBLYWOMAN OGDEN: Good morning.

MR. CHRISTIANSEN: Madam Chairwoman, members, my purpose here today is to place before this Committee information and testimony relating to electric energy issues in our industry, with specific reference to cogeneration.

This is an important issue both for the State, as well as the 650 employees currently working at Raritan River Steel. In order to understand this issue, it is beneficial to briefly summarize the recent history of the steel industry.

Students studying the history of the American steel business would quickly remind us that until 1959, the domestic steel industry seemed invincible to attack by foreign intruders. Just eight years earlier, on January 10, 1951,

Benjamin Fairless, the Chairman of U.S. Steel Corporation, opened an integrated mill in Bucks County, PA. In his opening comments, he said, "Americans do not take second place in any league, so they expect their steel industry to be bigger and more productive than the steel industry of any other nation." At the time Mr. Fairless made those comments, the American steel industry was not only bigger than that of any other nation, but it was bigger than the steel industry of all other nations combined.

But, in 1959, a very important milestone was passed. For the first time in our history, the United States became a net importer of steel, a trend that has never been reversed. True, domestic steel industry leaders did not like the situation, but then again, most did not really feel threatened either.

By 1967, imports had reached 10 million tons and 10% of the domestic market. And, for the first time, American steel producers began to worry. They had good reason, because the 10% rapidly became 15% in the 1970s, and topped 20% in '82 and '83, and we ended '84 with an import at an alarming 26.6%, and it was as high as 31% in July and December of that year. Eighty-five saw 25% of imports.

The 26.2 million tons of imports in 1984 were the highest on record, and represented an incredible increase of 53.3% over the 17 million imported in the year of '83.

Several factors accounted for the rapid growth of imports into the American market, one of which is the American market itself. It is both the largest in terms of consumption and the easiest to penetrate, since it is the most open of all world markets.

As world steel capacity grew in Europe, Japan, and developing countries, the market in those countries quickly became saturated, while in the U.S. the steel-making actually lagged behind the needs of its customers during peak times.

ASSEMBLYWOMAN OGDEN: All of this bears, Mr. Christiansen, on cogeneration?

MR. CHRISTIANSEN: Yes. I believe that this is beneficial to your understanding the situation and a large energy user as ourselves in the competition that we have to deal with. May I proceed?

ASSEMBLYWOMAN OGDEN: Yes.

MR. CHRISTIANSEN: But, to penetrate the American market effectively, foreign companies had to offer something American (indiscernible) did not, and they offered two things which proved irresistible. The first was lower pricing, often lower than the price of the actual production of the product. Because many countries had over-built production facilities and could not sell their product at home or anywhere else in which imports were very restricted, they sought to maintain employment at any cost. So, they sold, and in most cases, dumped their product in our very open market.

The second advantage some foreign producers had over their American counterpart was quality. If first-rate steel was required, Japan was often the producer of choice for many American steel-consuming companies. And today, that is still the case. Just ask management of General Motors, Ford, or Chrysler.

Both of the advantages I have cited, while not of our making, were not beyond our control to address. The pricing advantage was not just a result of selling near or below production costs. Rather, that advantage was at least partially the result of American steel workers earning on an average twice that of their domestic counterparts in industrial manufacturing as a whole.

Though recent union contracts have provided some relief, it is expected that the American steel industry's labor costs will reach \$25 an hour by 1986. When this is compared to \$13.45 an hour in West Germany, \$12.37 in France, \$11.00 in

Japan, \$9.32 in Britain, and \$2.39 in South Korea, it is obvious where the cost advantage lies.

American steel producers have fought back, in part, by reducing their number of employees, and big steel today is notably smaller than it was a few years ago. Employment in the domestic steel industry has fallen to 200,000 today, from 480,000 13 years ago, a drop of 58%, which is a major change, to say the least.

The ability to make as much steel as we used to make is no longer possible, which is okay with many domestic steel consumers who claim the quality is not there anyway. When they need quality, many buy from overseas, and that quality advantage could have been nonexistent if American producers had given their former customers what they really needed by installing the right equipment and the right attitudes in their plants. While some may say it is too late to worry about what we should have done yesterday, I say we had better learn the lessons of yesterday in order to have a tomorrow worth talking about.

Unfortunately, today, like many other days in the past, many steel companies are relying completely on government to get them out of the present mess. The new trade bill, while intended to be somewhat broader in its coverage of steel products, is similar in many respects to government's actions in the past. To date, we have had voluntary restraint agreements, trigger price mechanisms, triparted committees, and the euphemisms for the current EEC agreement.

ASSEMBLYWOMAN OGDEN: Mr. Christiansen, could you please jump to the part where you're talking about energy problems?

MR. CHRISTIANSEN: Yes, we are coming to that. In short, we have had a lot of government action with little real success, and that is not completely the fault of the government. Because of domestic steel's fixation on imports,

we have ignored the more important and more complex problems cited earlier. We have become myopic.

We do not mean to give to you give the impression that imports are not hurting the domestic steel industry in general, or Raritan in particular. They are. I can assure you that we will be very happy to see any decrease in Japanese wire rod, for example. But, at the same time, we do not intend to depend on short-term government actions of any kind that will guarantee long-term success. We have all seen the result of that type of positioning.

In recognizing the position of Raritan River Steel Company in the USA steel industry, Mr. Alan Woods, the US Deputy Special Trade representative, and his Director of Steel Trade Policy, Mr. Joe Papovich (phonetic spelling), recently visited our plant to acquire first-hand knowledge of the specific operations of our (indiscernible).

The future belongs to the Raritans of the industry. The plants that can and do produce high quality products with minimum resources and maximum efficiency-- Our steel business is no longer an old smoke stack industry. There are no smoke stacks at Raritan Steel. We supply more wire rod to the American industry than any other company in the world. Raritan is now the largest producer of wire rod in North America, with 15% of the total market, and maintaining over 22% of the domestic market

Many of our former domestic competitors are no longer with us, having been closed or sold, and a few will probably be leaving very soon. Other--

ASSEMBLYWOMAN OGDEN: Mr. Christiansen, there are a lot of other people who wish to talk about cogeneration, so I really would ask you to, in spite of what you're saying being interesting, just focus on either your advocacy or you problems with cogeneration -- that part of your testimony.

MR. CHRISTIANSEN: Well, I feel that it all is; however-- To ensure Raritan continues to be a competitive quality rod producer is an investment in the future of American steel, not a contribution to maintaining the relics of the past. The steel industry is energy-intensive. As the capacity has decreased, the restructured and efficient survivors could be faced with picking up the cost of the energy capacity from those industries who have failed or moved elsewhere.

In the past 28 or so years, New Jersey has seen countless industries leave for greener pastures. Some people say energy conservation is the way to fight today's high energy costs. Raritan is perhaps the most efficient steel plant anywhere in the world. We operate 24 hours a day, seven days a week.

Energy efficiency comes from technology, but not from that alone. The applications of these available technologies must be custom-made in most cases, and in our industry, most of these are too (indiscernible) to consider at this time.

Our plant uses 80 megawatts of power to melt and roll steel. We do not pollute the air, nor do we discharge any processed water into the Raritan River. Our plant is a high tech facility, using some of the most advanced production techniques in the world. Some of the production techniques developed by the steel are more technologically advanced than the developments in other high tech industries.

Our concern over electric rates is not reflected in the ability to compete with Japanese steel mills or imports from other countries, and the rules are the same, or as a member said before, on a level playing field. We are more efficient than the Japanese and sell more wire rod in the world than any Japanese steel company does.

Let me provide you with some of the actual facts concerning electricity prices, cogeneration, and New Jersey industry, the subject of this hearing. Electricity is

important to us because it is one of the larger components of our costs. Raritan River is in the recycling business. Scrap steel is a valuable natural resource, which is collected, processed, and classified by our suppliers. We use electricity to melt the scrap, and then to roll that steel into wire rod. This is further processed by our customers for useful products, such as wire cables, fence, nails, staples, industrial fasteners, and even the shafts of the shock absorbers in your personal car.

Our wire rod is used for welding rods, and some find their way into the manufacturing of our national defense equipment, such as ships and submarines.

Right now, before any rate increase associated with Hope Creek, we pay Public Service 5.87 cents per kilowatt hour. This is 10% more than the average electric rate paid by the typical steel mill. If Public Service's full rate increase is granted, we will pay 40% more for electricity than the average steel mill in the U.S. The average industrial rates are 50% higher in New Jersey than in other states. Rates in New Jersey are 50 to 80% higher than in states where our competitors are located.

Cogeneration is not an economically viable option for a company such as Raritan River Steel. Cost-effective cogeneration requires that the industrial customer have large requirements for both electricity and steam. This is more-- I'll shorten this up. We would not have use for any steam at Raritan River Steel.

Cogeneration also requires a large capital investment. In order to implement cogeneration at our company, assuming a use for the steam, we would need to build a 100-megawatt power plant with a capital investment of \$120 million. This is a large investment. It would take many years to recover these costs, if ever. These high capital costs -- \$1200 to \$1500 per kilowatt of capacity -- affect all New Jersey industries which might contemplate cogeneration.

For an example, a 30-megawatt industrial customer would face a capital investment of \$36 million in order to install a cogeneration system. We are sure you will find many industries who are concerned that high operating costs in New Jersey may cause them to leave the State prior to being able to recover such a large investment. Monsanto, a major employer in South Jersey, has already begun closing its operation there.

Finally, an additional factor in decisions involving cogeneration is the prospect of changes in Federal tax laws. Cogeneration does involve a large commitment of capital, and if changes in Federal tax laws reduce incentives for capital formation, those tax changes would also reduce incentives for cogeneration. Even if cogeneration was a viable option for Raritan River Steel, we would prefer to buy electricity at reasonable rates from a utility, and spend our limited capital investment dollars on expanding our facilities to increase our production. This not only allows us to recycle more scrap steel and increase our business; it also means more jobs right here in New Jersey.

Although cogeneration is not an economically viable option for us, we are taking several steps to reduce our electricity use and hold down our costs. We will have to take more steps if current rate increases continue. Some of the steps we have taken today include:

- 1) We receive electricity under an interruptable rate. This means that if the utility is short of capacity on a hot summer afternoon and there is a risk of (indiscernible), the utility can shut off our electric supply in 30 minutes. In effect, we are a source of emergency electricity supply and receive a small discount on our electric bill as a result.

- 2) We closely monitor our operations and the efficiency with which we use electricity. As a result, Raritan River uses less in electricity per ton of steel produced than most electric furnaces in the U.S.

3) Raritan River Steel has an electric art furnace that melts scrap and a rolling mill which produces wire rod. The electric art furnace consumes three times the amount of electricity consumed in the rolling mill. In order to control our costs and remain competitive, we now buy some semi-(indiscernible) product from other sources to roll into wire rod, rather than increase the capacity of our electric art melting operating. This holds down our costs, but also means that fuel workers are employed at our plant.

Hoganese (phonetic spelling), another company -- steel company -- in New Jersey with an electric art furnace also has reduced operations in New Jersey, and shifted production to Tennessee where operating costs are lower.

The last point here, number four, is important. The impact of every increase in New Jersey's electric rates on jobs in the State is not limited to the possibility of firms leaving the State. The impact of electric rates is felt through reduced operations by companies in New Jersey and through companies deciding to expand elsewhere, rather than expanding in New Jersey.

New Jersey has taken a pro-cogeneration stance. This does supply an alternative to some, but very definitely not to all industries in the State. We are sure that industries which nevertheless can take advantage of cogeneration should not be seen as a panacea for high electricity costs. Cogeneration is itself an expensive proposition requiring a large commitment of capital.

The problem is that the Board of Public Utilities may, as a result of substantial public pressure, take the view that the short-term political gains inherent in reducing residential rate increases at the expense of raising industrial rates are more important than the loss of jobs due to the high operating costs in the State. While this policy might appear politically expedient in the very short term, it will quickly cause

increases in residential and small commercial customers' electric bills.

The utilities tell us that they do not need to build any more new power plants for several years. Thus, the large portion of their costs are fixed for several years. When industries leave the State or reduce operations in New Jersey, the utilities' fixed costs are spread over fewer sales, and residential rates will have to be increased in order to recover the utilities' costs.

Lost revenue to the utility from Raritan River Steel and Hoganes, in a magnitude of 425 million kilowatt hours per year, is significant, as is the accompanying demand loss -- 100 megawatts. It would be our guess that any future petition to adjust this cost for a utility would be looked upon as a simple case of applying it to those customers who caused it. This is truly the way to lose 915 direct, plus perhaps 4000 indirect, jobs in New Jersey. As such, even if one ignores the potential job losses that may result from high electricity rates, the long-run impact of the Board's current policies will increase, not decrease, electric rates.

I wish to conclude by stating that I'm very serious when I tell you that I speak not only for Raritan River stockholders, but also for the employees at our mill. We have a very progressive labor policy. When our New Jersey work force can hold down our costs for increased productivity, our profits are higher. Every single worker at the plant participates in our formal profit-sharing plan whereby part of our profits are distributed to the employees. This enlightened labor policy is one reason why we are the most efficient mill in the world.

However, costs that we cannot control, such as increases in electric rates, reduce profits and, hence, reduce the bonuses our employees receive. It is, after all, better for our employees to pay slightly higher power rates at home than not having any salary to pay for them at all.

The industry cannot generate cash for use in improvements and added productivity with subsidized competition and leaping increases in energy costs. Cogeneration or self-generation is perhaps a way of relieving the bite, but the after shock may be the true killer.

Thank you for your time.

ASSEMBLYWOMAN OGDEN: Thank you. Mr. Albohn?

ASSEMBLYMAN ALBOHN: All I heard really was a concern about the price of electricity. Do you have any suggestions as to how that could be rearranged to your benefit?

MR. CHRISTIANSEN: In many different ways, as there are always possibilities. We are in discussion with the power company at the time in this regard. It is a large increase. PSE&G, of course, has a petition to the Board. And, cogeneration, as an answer to high electricity costs, is, in our view, truly not so. Somebody has to pay for the capital that has to be invested in order to make this additional capacity. Additional capacity is perhaps already in some of the utilities' back yards if procedural and regulatory commitments use would be made.

Why we have to build more capacity, even in the form of cogeneration or self-generation, we cannot understand. It only is going to drive up the cost specifically for us.

ASSEMBLYMAN ALBOHN: That, I guess, is the root of your concern then.

MR. CHRISTIANSEN: Correct.

ASSEMBLYMAN ALBOHN: And I see what you're driving at now. You feel that the loss of capacity by the utilities through cogeneration facilities will end up driving up their costs in general, and therefore, their rates to people like yourself.

MR. CHRISTIANSEN: I guess I missed-- The part that I left out -- which time restraints are involved in it -- also

explain the part that electric or energy costs to us, as part of our product represents-- Representing that larger portion--

ASSEMBLYWOMAN OGDEN: Yeah, we know that.

MR. CHRISTIANSEN: Any increase would destroy us. I mean, I explained our position from the point of view of understanding and joining a competitive situation. I believe there was another gentleman here this morning that mentioned that everything should be market driven. Whether that is from the utilities' side or whether that's from industry's side, I believe it should be from the market side totally, but in the realm of the consumer -- not necessarily on a regulatory body. If it's driven that way, we can make it. But, with the cost of electricity they way it is today, we will be driven out of business.

ASSEMBLYMAN ALBOHN: Thank you. That's one of the concerns we share, I guess. It is what effect extensive cogeneration facilities will have on down-rating, if you will, of the existing generating plants, and what their fees are likely to have to be. I think it is a very debatable question.

MR. CHRISTIANSEN: I apologize if I took it on a very individual company's point of view in this case. However, it is very difficult to show the problem in any other light, and it is a problem. High electricity rates and coping with them or circumventing them is, in our view, not the answer. The answer is lower electricity rates in order to promote more business and more jobs.

ASSEMBLYWOMAN OGDEN: Well, I think there are those who feel that this is what is going to eventually happen with more cogeneration -- that the spending by the various either nonprofit groups, hospitals, nursing homes, more industrial companies. And we'll be hearing next from Hoffmann-La Roche. Spending their capital dollars means that the utilities themselves are not going to have to spend their capital dollars, and then pass it along in the rate base in terms of a large generating plant in the future.

Now, possibly if we had started this cogeneration going back 10 or 20 years, we might not be talking now about a rate case dealing with Hope Creek. So, one doesn't know what the answer to that is, but clearly, those who are going to cogeneration down the cogeneration path are doing it because it is making it possible for them to have lower costs in terms of energy and a more efficient operation. I think it's unfortunate that your particular operation -- your steel business -- isn't able to take advantage of that greater efficiency and reduction of energy costs. For instance, we'll be hearing from Hoffmann-La Roche, but I'm sure for them to have one plant already operating for several years, and to be investing, and have a new cogeneration facility in their Nutley plant, it has to-- The payback has to be there.

MR. CHRISTIANSEN: If-- That's correct. I mean, I agree with those things. What I'm afraid of is the after shock, and that is, irregardless (sic) of how you build the capacity, somebody has to pay for it. Whether it's cogeneration, self-generation, or the present utility, somebody has to pay for that capacity, and it's all going to come back and put in front of the Board -- the Public Board of Utilities. And it's going to be spread over.

The problem is, down the line, to which direction will it be spread? And, because cogeneration is basically for industry, that's where it's going to be pointed. And if it's going to be pointed at industry in general, without perhaps knowing whether it's a feasible or viable means or not to certain industries or certain plants perhaps or operations-- If it's just done unilaterally across industry -- this cost at some future date -- then that is a totally unfair position.

ASSEMBLYWOMAN OGDEN: You're saying you think it's going to be picked up entirely by industry as opposed to all the ratepayers?

MR. CHRISTIANSEN: If the loss, if the great loss of buying power-- Like I took two companies -- ourselves and another similar type of operation -- and we buy 425 million kilowatt hours per year-- Now, if we put up cogeneration plants or even self-generation plants, for that matter, and took that revenue away, which probably represents somewhere in the order of 35 to \$40 million -- took that away from the utilities -- somebody has to pay for it. Someone has to. Who will it be? To me, right off, it would be allocated at least to the industrial side, because that's what we are. Now, whether it would come back and haunt us, even in the stand-by costs, or to other industries who do not cogenerate, for example, and then all of a sudden their rates go up because we went and took benefit from it, that seems-- It seems like it's a never-ending thing we have to look at.

ASSEMBLYWOMAN OGDEN: I think that's one of the issues that should be before the Board of Public Utilities, and I'm sure it will be.

Thank you very much for appearing, Mr. Christiansen.

MR. CHRISTIANSEN: Thank you.

ASSEMBLYWOMAN OGDEN: Next I would like to invite Mr. Dalton from Hoffmann-La Roche.

J O H N B. D A L T O N: There is just one slight change in my text. I must say now, good afternoon.

My name is John Dalton. I am Regional Manager of State Government Affairs for HLR Service Corporation, a subsidiary of Hoffmann-La Roche, Inc. I am here to urge all Assembly Energy and Natural Resources Committee members to do everything that you can to encourage the development of cogeneration in the State of New Jersey.

Hoffmann-La Roche is one of the world's leading health care companies. Widely known for original research and development, Roche has been responsible for numerous important medicines -- some for diseases that afflict countless numbers of people, and others for diseases that afflict only a few.

A leader in biotechnology, Roche was the first company to produce interferon for clinical trials through recombinant DNA technology. Roche provides health care professionals with a wide range of medical products and services, including diagnostic test systems, radiopharmaceuticals, clinical laboratory services, and specialty chemicals. A pioneer in the field of pure bulk synthetic vitamins, Roche supplies the food, pharmaceutical, and agricultural industries with vitamins, food additives, and animal health products.

Hoffmann-la Roche has begun construction of a major cogeneration energy facility at our corporate headquarters in Nutley, New Jersey. This cogeneration system is part of a five-year program aimed at implementing wide-ranging energy conservation measures throughout the Nutley complex. The proposed cogeneration facility -- a gas turbine-driven aircraft-derivative-type system -- will provide both electricity and process steam for plant operations, significantly reducing energy costs.

The electricity produced by the project's generators will partially displace that normally furnished to Roche by Public Service Electric & Gas Company. This amount of electrical energy represents an annual reduction of approximately 6,300,000 gallons of fuel consumed by PSE&G.

Having constructed a major cogeneration facility at our Belvidere, New Jersey manufacturing plant in 1982, Roche is among the leaders in industrial cogeneration in the United States. The Belvidere facility, a pilot project that was jointly funded by the United States Department of Energy, has resulted in substantial energy savings for both Roche and the surrounding northwestern New Jersey region.

There is no one approach to cogeneration which can satisfy the needs of every potential user of this energy-saving system. Each plant and plant site is unique. For example, our Belvidere operation requires a great deal of steam in

proportion to electricity. At Nutley, on the other hand, the requirements for heat and electricity are much more in balance. The environment at Belvidere is rural on the Delaware River, whereas the Nutley environment is urban and removed from any natural body of water.

The most convenient, cost-effective, and available fuel supply in Belvidere is residual fuel oil, and the fuel conversion efficiency of our Belvidere project -- about 85%, or approximately twice that of the typical public utility plant -- is such that net oil burning in the region is reduced by some 200,000 barrels a year. That's enough oil to fill a freight train approximately 1000 tank cars long. In Nutley, where the most convenient and environmentally appropriate fuels are natural gas and #2 fuel oil, natural gas will be the primary fuel used in our new project.

Cogeneration systems come in all sizes and in a variety of types. Some burn only natural gas; others like our Belvidere unit can burn virtually any fuel that can be liquified or gasified. Some can be attached to resource recovery plants to make use of burning refuse.

Another factor to consider is that different types of cogenerators produce different ratios of heat to electricity, and so on. The variations are endless. There exists a good body of information on the subject. To be optimally cost-effective and environmentally benign, each cogeneration system must be precisely tailored to the specific manufacturing and environmental requirements of its particular site.

Feasibility studies can cost anywhere from a few hundred dollars to tens of thousands of dollars, depending on the size and complexity of the facility. That's why we strongly endorse Assembly Bill 261, sponsored by Assemblyman Kavanaugh, which your Committee has approved and is now pending in the Appropriations Committee. We also encourage you to give strong consideration to Assemblywoman Ogden's bill, A-1116, a

bill which would provide a five-year property tax relief benefit to developers of cogeneration systems. If adopted by the Legislature, these bills will go a long way toward encouraging the development of cogeneration in New Jersey. It is our understanding that the State Economic Development Authority already provides loans for cogeneration facilities at or below the prevailing market interest rates.

Cogeneration, at least for industrial users, is most feasible where there is a need for both electric power and steam. Almost all of the electricity generated by public utility companies is produced in power plants that do not utilize the heat they produce. What makes a cogeneration project substantially more efficient than other types of energy facilities is that it is equipped with a waste heat recovery system which enables it to utilize the heat produced in the power production process.

In addition to generating 23,000 kilowatts of electricity, the Roche Belvidere cogeneration system produces 160,000 lbs. of process steam heat and 262,000 lbs. of 170-degree water per hour. The system provides sufficient electricity for all plant operations at Belvidere, in addition to providing excess electricity which is sold to the local public utility, Jersey Central Power and Light Company.

Unlike our Belvidere project, which satisfies all of our energy needs there, our cogeneration system in Nutley will provide only about 60% of our total energy requirements for Roche headquarters. Our energy needs vary throughout the year, and our requirements for steam are far less than in Belvidere, so we will still have to buy some electric power from the public utility.

The Nutley cogeneration system will be housed in a 5400-square-foot building on the Nutley plant premises. The six-story high building will enclose three gas turbine generator sets, each with a heat recovery boiler. The system's

combined output at full capacity will be 169,500 lbs. of steam per hour and 11,580 kilowatts of electricity. We anticipate that our local property tax liability will be increased approximately 3% when this facility is completed. I make that point because we do not anticipate this would be a tremendous hardship for the community to which we now pay that property tax. But, it would be a stimulus to other companies to give further consideration to cogeneration.

Although our State is said to have adequate electrical generating capacity, the fact is that every utility in New Jersey -- whether for reasons of capacity or of economics -- now buys power at some time during the year from the Pennsylvania/New Jersey/Maryland pool. The pool, in turn, is part of a larger grid that is growing increasingly dependent upon power from Canada. Greater cogeneration capacity would decrease somewhat our dependence on the pool and Canada.

Moreover, because of cogeneration's high fuel conversion efficiency, an increase in cogenerated power would result in a net improvement in the environment because less fuel overall would be burned. In addition, increased cogeneration capacity would render unnecessary the construction of new coal-fired or nuclear power plants, both of which are extremely expensive and entail considerable financial, as well as political, risks.

Cogeneration, in our view, represents one of New Jersey's best hopes of controlling the cost of future industrial power, and we are confident cogeneration will grow in our State, provided a favorable climate for its development is cultivated. Cogeneration constitutes a cost saving and clean air alternative we can't afford to overlook in our competition for national and work markets and the goodwill of our neighbors.

We strongly encourage you to do everything that you can to stimulate the further development of cogeneration in the State of New Jersey.

ASSEMBLYWOMAN OGDEN: Thank you very much. Art, do you have any questions?

ASSEMBLYMAN ALBOHN: The one thing that concerns me really is, there is a repeated indication through your comments that outside help is needed for cogeneration. In other words, your plant at Belvidere was jointly funded by the Department of Energy and yourselves, I presume, which means the taxpayer contributed there.

Assemblyman Kavanaugh's bill, A-261, despite all of the representations I have had made as to all the people who would like to put cogeneration facilities in your plant -- anybody's plant -- A-261, if I remember rightly, is a bill that would provide funding for such studies. And, again, it is a taxpayer contribution to what is ordinarily built as the ultimate in goodness, you know?

And then A-1116 would provide a five-year property tax relief on top of that. And then we talk about loans below prevailing market interest rates, which means that the public in general -- the taxpayer in general -- somewhere is losing some money on those things.

I just get the feeling, is cogeneration or is it not able to survive one instance at a time on its own, or does it need transfusions of public money all the time?

MR. DALTON: We believe we would have made the investments without the stimulation of the legislation that was passed last year or that is pending this year. We support these bills and the laws that were enacted as good public policy because we are convinced that cogeneration is beneficial to the industrial community and to everyone else in our State.

We know that the payback on the investment that we've made in both the Belvidere facility and in the Nutley facility, which we are constructing, is somewhere between three and five years, which means that we will have paid for the facility to a great degree in the savings we made in energy costs during that period of time.

Now, our taking advantaging of a Federal Department of Energy grant in the construction of the Belvidere facility was only because they became aware of our interest in cogeneration. The funds were dedicated in 1980 to the development of cogeneration because, as you recall, at that time the energy costs were going out of sight and no one knew where they would end. So, the Federal government, perhaps as part of PURPA, devised these funding sources, and we were ready and joined with the Department of Energy, so that it lowered our investment costs. But, we're probably now at the point where we have almost paid off that in terms of electric savings, so that from here on, our energy costs will be realized as contributing the lowering of our costs and our ability to remain an employer, producing goods competitively in New Jersey.

I think the same thing will be true of our Nutley plant. Even though we're only going to be building capacity to meet about 60% of our needs, the lowering of our energy costs for that 60% will still be considerable and will contribute to our ability to remain a viable company, continuing to invest those funds that we would otherwise spend for energy in research and development of new products which can benefit mankind and keep all of us employed here in New Jersey.

ASSEMBLYMAN ALBOHN: You are financing the Nutley installation enetirely within your own company then?

MR. DALTON: Yes, we are.

ASSEMBLYMAN ALBOHN: Do you know-- I always recognize the need for demonstration plants, and I think that's what the Belvidere facility really was. Was that the first installation of such a nature in the country? I don't know. I'm asking--

MR. DALTON: Yes. The technology had never been employed to produce electricity through cogeneration. The diesel engine that is there is the same type that drives large ocean-going bessels, but it had never been modified in the way that we had to have it modified to produce electricity. And so, we were taking a change, in a way, but so was the Federal

Department of Energy. As it turns out, it has proven to be a good system, and it's been installed in a number of other locations throughout the nation, and by American companies, since our system was put in.

ASSEMBLYMAN ALBOHN: My point really was that the -- at least on that scale and I presume on a lot smaller scale too -- the concept has been proven as being practical, workable, economic, and all sorts of good things, and I guess what concerns me is the continuing effort to finance it from the public till. And that's why I was less than enthusiastic about Assemblyman Kavanaugh's bill when it was before us, and will probably be voting against it if it should reach the floor. But, the-- I think the fact is that we now have a proven concept that should obey all the laws of the marketplace without requiring spoon-feeding or transfusions of public funds. And I think, perhaps you helped me make that point.

MR. DALTON: Well, when you consider the bills that were passed last year, the bill that eliminated the sales tax on cogeneration equipment-- Our legal staff had taken the position that sales tax would not have applied to that equipment anyway, and we hadn't paid it, and the bill proved our position. The other bill that gives us an exemption for the natural gas that we purchase for cogeneration is the same benefit that all of the public utilities receive, because they do not pay any tax of that type on the gas that they buy. All of their customers do pay that tax, but they do not. So that as cogenerator, we would be being treated just the same as the public utility was being treated in the purchase of natural gas.

Concerning Mrs. Ogden's bill, our feeling is that when an organization, like Hoffmann-La Roche, or anyone else, goes to the extent of investing in plan and equipment to provide cogeneration to lower its energy costs, it's making a long-term commitment to remaining in New Jersey, to remaining a tax paying citizen -- corporate citizen -- of New Jersey. My point

about our tax liability for the Nutley facility -- which will significantly lower our energy cost, increasing our property tax liability by only 3% -- we're confident that the City of Clifton will not miss that 3%, but they'll be happy to have us continuing to pay them \$2.2 billion -- excuse me -- million in property tax for an indefinite period. Where if we are not viable, we may be discontinuing operations, dismantling buildings, removing taxable property, and moving elsewhere as an economic survival means. I'm not saying that that's going to happen, or would not happen without cogeneration or would happen without cogeneration.

But, I think the point is, supporting cogeneration with public policy means, whatever they are, whether it's a bill like Mr. Kavanaugh's which will provide feasibility study funds-- Jersey Central is already providing those, or offered them. And if they're going to be buying power from jurisdictions where they do not now provide power, they may be providing feasibility study funds all over the State, and Mr. Kavanaugh's bill may not be needed. They do limit it to \$2500, and the point I made was that in larger feasibility studies you may spend far beyond that.

But, you're right, the economics are there. The companies should recognize it, at least those that have need for both electricity and steam. But government in many ways tries to stimulate everyone to consider things that are good public policy, and we believe cogeneration is that.

ASSEMBLYMAN ALBOHN: Nothing further.

ASSEMBLYWOMAN OGDEN: When you say, Mr. Dalton, that you're confident that cogeneration will grow in our State, provided a favorable climate for its development is cultivated, was there anything specific that you were thinking about there?

MR. DALTON: Well, we believe the trends are good in that agencies such as DEP, and DOE, and even the BPU are looking more favorably at cogeneration. There were points made

today about buy-back rates that could be improved; we think they're tending to be improved. It certainly would contribute to the value to us of cogeneration if our Belvidere facility had reimbursement rates for the excess capacity that we sell to Jersey Central that were greater. Everything that we can do to avoid costs or to improve our operating picture will be that much better off as a company. So we think things are moving in the right direction, but we do think they need additional stimulation.

ASSEMBLYWOMAN OGDEN: In terms of the electricity that you sold, or are selling -- your Belvidere facility -- to the surrounding area, approximately what percentage is that?

MR. DALTON: I really don't have that figure. I'd be pleased to provide that to you, but I don't--

ASSEMBLYWOMAN OGDEN: Well, I was just curious whether it's, you know, a relatively small amount, or whether it's substantial.

MR. DALTON: Perhaps the representatives of JCP&L can tell you that. I don't have a figure myself, but I can get it.

ASSEMBLYWOMAN OGDEN: No, that's all right, I was just, you know, curious about that.

ASSEMBLYMAN ALBOHN: Maureen, if I may? Aren't you sort of reflecting Mr. Christiansen's argument that if you reduced your usage sufficiently the rates were going to go up to everybody else to cover the burden on the system?

MR. DALTON: Well, I think when you look at the 23 megawatt capacity that our Belvidere facility has, and compare that to the total capacity of the public utility industry, you'll see that we're a very small drop in the bucket. And if you stimulate 20 Hoffmann-La Roche's, you'll be going a long way, and that will be 20 drops in the bucket, and the bucket will still be full, and there'll be plenty of demand as long as our State continues to attract business from surrounding states because of whatever reasons -- favorable tax pictures, or

whatever. I think we won't get to the point where we'll feel badly that we have too much excess capacity because of cogeneration. And there are many other facilities, like Morristown, that will not be, with their cogeneration facility, selling electric power. But in reducing their operating costs, they'll be able to provide more economical health care to the citizens that use their hospital. And lord knows, everyone's concerned about health care costs.

ASSEMBLYWOMAN OGDEN: Thank you very much. Let's see, next is Mr. Stoller, from New Jersey Business and Industry.

J E F F R E Y S T O L L E R: Thank you very much. My name is Jeff Stoller, I am Director of Regulatory Affairs for the New Jersey Business and Industry Association, which represents 11,000 employers in this State. In that position I work closely with BIA's Council on Energy, a group which includes members of leading utilities as well as many of New Jersey's largest industrial energy users. The Council met recently with Assemblywoman Ogden to discuss a number of energy concerns, and the members expressed the hope that they can serve as a resource for this Committee as it addresses issues, such as cogeneration, this Legislative Session.

As with many energy issues, it is difficult to identify a simple industry or utility position on cogeneration. Certainly, the concept has widespread support, yet once you begin to ask how cogeneration should be promoted, or in what areas, or how extensively, or at whose expense, it becomes harder to find a neat consensus of opinion. I will, therefore, confine my brief remarks today to our Association's perspective on cogeneration, and let the individual businesses and utilities on the Council speak for themselves.

TO begin, BIA's interest in cogeneration stems from its overall concern with the impact of energy costs on the New Jersey economy. Each year, for instance, the Alexander Grant Consulting Group surveys the manufacturing climates in 48

states and year after year, New Jersey's rank and reputation improves. Since 1981, our State has risen from a dismal 47th place in the survey to 24th place. That's significant progress, but the sad fact is that New Jersey's rank would be higher still were it not for one single factor: that's energy costs. In that category, Alexander Grant ranks us 43rd out of 48. Our average energy costs, in other words, are worse than in New York, Pennsylvania or any other Middle Atlantic State. And those costs overshadow the many other advances we've made in creating a better environment for business growth in New Jersey.

High energy costs have their greatest impact on precisely those New Jersey manufacturers which have continued to lose employment throughout the current economic recovery: Those involved, for example, in machinery, food products, paper products, petroleum and refining, and glass products, and as you've heard, many others as well. In the first half of 1985, 13,400 manufacturing jobs were lost while the rest of the economy boomed. Many of these losses occurred in the energy-intensive industries I've mentioned, and they cancelled out nearly half the employment gains that this sector had achieved since 1983. Now, the decline in manufacturing is a nationwide trend, certainly not unique to New Jersey, but BIA believes that anything that can be done to retain these jobs -- especially through energy cost containment -- should be considered seriously.

How might cogeneration help in this situation? We believe that there are several clear benefits to this approach:

Number one, it offers manufacturers an alternative to shifting high-cost operations to another state.

Two, it offers even small facilities a relatively rare opportunity to play a direct role in containing their costs; most of the time energy costs are beyond their control.

Third, and most importantly, cogeneration can benefit

utilities, industry, and residential consumers alike by avoiding construction of new central power stations. Large new plants used to bring about lower average rates in years up until, I believe, in the '70s, but as we all know the economies of scale seem to have been pushed to their limit for now.

Cogeneration has been given a boost in New Jersey through the important incentives for cogeneration adopted by the Legislature and Governor last year. The exemption of cogeneration equipment from the Sales and Use Tax, and the removal of the Gross Receipts and Franchise Tax from natural gas use for cogenerators has created a climate that encourages investment in this alternative. The Department of Energy has been actively promoting the concept statewide, and new technologies, such as fuel cells and factory-assembled cogeneration modules may make on-site cogeneration a practical possibility for small operations as well as large ones.

The trick, of course, is to make cogeneration attractive to the utilities. They have stated clearly that buy-back rates that are too high will only divert investment dollars from more profitable projects and force utility consumers to underwrite cogenerators. Surely, it must be possible to establish an innovative rate structure that gives all parties some economic incentive to participate. Another obstacle to cogeneration development may be on the horizon in the form of Senate Bill 1858, which would in effect redefine business personal property as real property for taxation purposes. A number of businesses believe that this kind of change could have a negative impact on the purchase of cogeneration equipment.

Whatever the final details of the State's cogeneration program, we believe that the overall approach is in step with the nationwide trend toward greater competition within the energy field. The challenge to the Legislature and to the utilities and businesses of New Jersey is to shape a regulatory

climate that helps promote this new era of competition rather than hinder it.

Thank you.

ASSEMBLYWOMAN OGDEN: Thank you, Jeff. Art, do you have any questions or comments?

ASSEMBLYMAN ALBOHN: There's a common thread that runs through a lot of the testimony, and I think that perhaps one of our utility people might want to comment upon it later on, but it seems to me that that common thread is the extraordinarily -- quote, I guess -- "high costs of energy in New Jersey." And especially, and as you indicated, the probably extraordinarily high costs of large new plants, which is no longer a matter of scale, but a question of the restraints being placed upon the construction of those plants -- real or imagined environmental and emotional constraints that are being placed upon them, I have a suspicion, is perhaps the major reason for their high costs.

And, of course, those real or imagined constraints come from what the Legislature perceives to be the public and therefore supports that position. And in a way, the bird has come home to roost, because now those things that we've created in the way of high energy costs are the very -- you know, provides us with the energy costs to complain about.

I don't know if I'm right or wrong on that, but offhand I don't see cogeneration really as reducing energy costs in the short-range. It may have potential in the long-run by avoiding the construction of a large new plant, but perhaps as they proliferate, why the concerns of environmental pollution on small energy plants may be just as great as concerns of environmental pollution by a large energy plant.

MR. STOLLER: Well, I think you've touched on one of the things that's again, kind of hard to get a handle on to an extent that, you know, what's the psychological climate that's created too? And I think all I would say to that point is that

the idea that there are some alternatives, perhaps, available, might give some of these larger manufacturers the time to see if there isn't a way to restructure their operation to maybe make that second attempt to stay here in New Jersey. And I think as long as we are at least addressing the possibility in looking into the details of some of these options, that's something that's worth doing. Again, we might get to the end of the road at some point, and say, really, on the scale that we need to be exploring this alternative, it's really not going to carry the day. But I do think it's important that this option or any of the others that we may talk about in the future are getting this kind of serious attention.

ASSEMBLYWOMAN OGDEN: Thank you very much.

MR. STOLLER: Thank you.

ASSEMBLYWOMAN OGDEN: I think just before we break for lunch we have time for one more. Mr. Betz, is he here from Campbell's Soup? Nope. And Mr. DeMoura, from Ciba-Geigy? He's not here either. Georgia Hartnett, from Elizabeth Gas?

G E O R G I A H A R T N E T T: I wasn't sure we'd make it before lunch.

Chairman Ogden, members of the Assembly Committee on Energy and Natural Resources, my name is Georgia Hartnett. I am Manager of Government and Regulatory Affairs for Elizabethtown Gas Company. Accompanying me today is Jodi Weissman of our company. On behalf of Elizabethtown Gas, which services over 200,000 customers in Middlesex, Union, Hunterdon, Warren, Sussex, Morris, and Mercer Counties, we appreciate this opportunity to present our views with regard to the topic of cogeneration.

The record is clear, we are a fan of reasonable, cost-effective cogeneration. We have not only registered our support for this technology before the Legislature in the past, but also before the New Jersey Department of Energy during the course of hearings held on the "Statewide Energy Master Plan"

during 1985. We have sponsored our own cogeneration forum for the information of our industrial/commercial customers, participated in state-run forums on the subject, and in the fuel cell pilot project now functioning at the Alcan Aluminum Corporation plant in Woodbridge.

We were pleased to see that the adopted Master Plan recognizes natural gas as, quote, "the cleanest burning fuel possible," unquote, and thereby the fuel of choice for use in cogeneration systems. We also agree with the plan's conclusion that "cogeneration holds the promise of improved economic growth for our State through increased efficiency and self-sufficiency."

The question remains as to how we, as a gas utility, and you, as lawmakers, can best structure New Jersey's environment to foster the development and use of the cogeneration technology in New Jersey.

Thus far, the cooperation of the Legislature has been admirable. Just last year, as everyone's referred to, the Governor signed into law two legislative initiatives which should serve to stimulate private interest in cogeneration. One, P.L. 1985, Chapter 266, exempts machinery, apparatus, or equipment used for cogeneration from New Jersey's Sales and Use Tax. As you've heard from the prior speaker, that may have just been a law which repeated what was common practice at the Division of Taxation. The other, P.L. 1985, Chapter 359, exempts sales of natural gas for use in cogeneration from the Gross Receipts and Franchise Tax. The latter will assist in making the environmentally superior alternative of natural gas more competitive with oil which is untouched by the 13% Gross Receipts Levy.

By eliminating the 13% tax from the sale of natural gas to those consumers who wisely use that gas for the simultaneous generation of electricity and useful heat, New Jersey is providing an incentive for the capital investment

necessary as a pre-condition to the implementation of cogeneration technologies. And we've heard a lot of numbers with regard to the need for that capital investment, here today. In addition, the position of the Department of Energy and the Board of Public Utilities is furthered as they look to cogeneration as a promising resource to amplify traditional electric supply generated by installed capacity of the State's electric utilities.

We believe that these recent legislative changes have and will do much to sweeten the atmosphere for potential cogenerators and we appreciate the Legislature's support of these laws. We'd like to take this opportunity to offer special thanks to Assemblywoman Ogden for her perseverance in securing passage of these initiatives.

With these reforms now in place, we recognize that we, too, must provide incentives to cogenerators to choose natural gas. In that regard we are presently in the throes of developing a cogeneration tariff which we hope will serve the economics of the cogeneration customer without negatively impacting on our remaining customers.

We plan to establish both an interruptable and firm cogeneration tariff, but we are not yet at a point where it is appropriate to discuss the details of these rates. We hope to have these schedules in place within a few months.

In addition to rate consideration, Elizabethtown Gas Company has been aggressive in marketing the cogeneration option over the past few years. We have retained consultants to assist us in targeting cogeneration prospects, and we have hired in-house specialists and outside experts to assist these prospective customers in evaluating the merits of cogeneration as applied to their facilities.

These efforts have produced encouraging results. On-line on our system at this time are five cogeneration projects, producing approximately 27 megawatts of power. More

impressive, however, are the 23 prospective cogeneration customers with whom we are presently working which could produce a combined output of 220 plus megawatts were they all to come on line.

Elizabethtown Gas Company applauds this Committee's interest in cogeneration. In conclusion, if I may, I'd like to introduce Jodi Weissman, our Representative of Industrial Services, to provide you with further details on our efforts in the area of cogeneration.

ASSEMBLYWOMAN OGDEN: Thank you, Georgia.

J O D I W E I S S M A N: I'd just like go through some facts of what we're doing in cogeneration services for industrial and commercial customers. Currently, as Georgia stated, we have five cogenerators on-line, which represent a total of over 27 megawatts. One of the-- As an example of one of these is the Holiday Inn in Clinton, which we helped them along through the study with consulting and engineering type work all throughout that facility. And they are the first hotel with cogeneration in New Jersey, so it is a demonstration facility for that. And, in the commercial sector, hotels are a very good cogeneration idea.

Secondly, we've held two seminars for our industrial customers on cogeneration. They were mainly for industrial customers, but we also invited along commercial customers who we thought that the cogeneration would be applicable for. At these seminars we gave overviews of cogeneration covering things such as technical and economic considerations, applications, and systems. We also had exhibits of engines, turbines, and computer programs available for analysis.

We have identified potential for cogeneration in our service territory through market assessments completed by nationally recognized consultants. These consultants have id'd what type of markets we should go after, and what type of systems. And these are only for economically feasible

cogeneration. We don't want to put on systems that aren't economically feasible. They've-- Okay, the studies were done by Arthur D. Little, and GKCO out of Virginia.

We've identified 23 prospects for cogeneration with a potential of over 220 megawatts. Of these 23 identified prospects, eight of them are commercial and the remainder are industrial. At this time we currently have gone mainly after the industrials -- the larger megawatt type facilities -- but we will continue in the future to pursue commercial.

Also, of those 23 prospects, two have signed letters of intent, and those two facilities represent 32 megawatts of potential. Three of them are at the request for proposal stage, representing 53.8 megawatts, and two are under engineering study, representing 58.7 megawatts of potential. And one of them, which represents .4 megawatts will be going on line this month.

We also perform computerized cogeneration screening and prefeasibility studies for customers, which we do at no charge. It's an initial study to determine whether they should look into it further. When they get to the point where they want to do a further engineering study, we would help them along, maybe in the beginning with consultants, but then let them turn to the consultants, because we want, if it's not economically viable, then they're not going to spend the money on the engineering. But these studies we've done for a few of the companies to date.

We also assist customers in cogeneration application, such as the Holiday Inn example where we retained a consultant to work with the Holiday Inn, so that we could have that as a showplace as well for the technology in hotels and commercial applications. And, in-house we've also done the computer programs and flow sheets, and we've talked to almost every single one of our 80 large industrial customers on cogeneration, and we have been talking -- beginning to go out more and talk to the commercial customers at this point.

I mentioned already the fact that we work with consultants. Currently we are working on rates for firm and interruptible cogenerators. What we want to do with the rates is encourage development of new cogeneration facilities that are sensible, so the rates aren't going to be rock-bottom so that people who are going to, go into cogeneration even if it doesn't make sense. And we're looking at a three year term on the rates. I know you were asking about that earlier -- terms.

But also, the existing transportation service contracts which we have -- which is 6.4 cents per therm delivered through our system plus the cost from the market or a broker -- are very reasonable rates and should be good enough for a cogenerator.

We view cogeneration as a viable method for improving our load factor, and therefore, we will attempt to further identify and assist economically feasible cogenerators.

Thank you.

ASSEMBLYWOMAN OGDEN: Thank you very much. Art, do you have any questions?

ASSEMBLYMAN ALBOHN: No questions, thank you.

ASSEMBLYWOMAN OGDEN: I was curious as to when you started this program of hiring the consultants and trying to screen for the potential customers. In the past year, or past two or three years?

MS. WEISSMAN: Okay. I know they had started it before I started with the company, and I started in September of '84. When I was hired, specifically the first two weeks, I was getting training on cogeneration application and computer problems, but they had been doing it for probably a year/year and a half before that.

ASSEMBLYWOMAN OGDEN: Are you involved in anything like the planning grants that Jersey Central is, or do you see your consultants as taking that role instead of you giving money to potential customers?

MS. WEISSMAN: Excuse me?

ASSEMBLYWOMAN OGDEN: The planning grants-- Jersey Central talked earlier about, I think \$2500 planning grants.

MS. HARTNETT: At this point, our activities are limited to providing some assistance through our own consultants to pinpoint -- and Jodi, you can amplify this if you want -- to pinpoint feasibility or viability. And beyond that -- except possibly in the case of the Holiday Inn, where we were dealing with a new facility -- new type of installation -- once we can identify it, then it's the private customer's option. Not to say that we won't go out and make continuing calls on them in regard to their progress on it, but we don't provide them grants over the long term. It's a private/public utility sector partnership for a while.

MS. WEISSMAN: We provide them any of the assistance they want in, you know, answering questions for them, and helping them find the answers they need after we do the feasibility studies, and things like that. But as to monetary, no we don't give any monetary--

ASSEMBLYWOMAN OGDEN: Would you agree with the comments from the spokesman for the Raritan River Steel Company that the steel industry does not lend itself to any type of cogeneration?

MS. HARTNETT: I have to defer to the engineer.

MS. WEISSMAN: Okay, they are one of our customers, but they're not one of my accounts, so I don't know the ins and outs of what they do everyday. I'm sure we have looked at that, and they're not on our list of prospects. I don't know the exact reason for them not being there, but somebody has been out from our industrial department and looked at that facility, because they are one of our large customers. Now, as to the entire steel industry, I would say I'm sure that there's certain areas of steel industry that will have use for waste heat. And if you have use for waste heat, and a use for electricity--

ASSEMBLYWOMAN OGDEN: That's the key to it.

MS. WEISSMAN: --it should be viable.

ASSEMBLYWOMAN OGDEN: Well, thank you very much for coming and waiting this long. We're going to take a break for lunch and then come back around two. And I have on the list here three more individuals: Richard Stokes, from Atlantic Electric, Bill Wood, from Public Service, and then Dennis Wilson from Data Acquisition Services. Are there any others who are in the audience who wish to speak? Yes?

M E L V I N H E U E R: (speaking from audience) I called-- Melvin Heuer from Energy Initiatives.

ASSEMBLYWOMAN OGDEN: Oh, I see. No, I'm sorry, I had skipped over you. I had thought that Gene McCarthy was speaking for Jersey Central.

MR. HEUER: Well, he doesn't speak for me, though.

ASSEMBLYWOMAN OGDEN: Oh, okay. All right, sorry.

ASSEMBLYMAN ALBOHN: Do I understand we only have three speakers for after lunch? Are there others?

ASSEMBLYWOMAN OGDEN: That's what I believe we do have. Do you think we should--

ASSEMBLYMAN ALBOHN: 'Cause, on my part, I just assume skip lunch.

ASSEMBLYWOMAN OGDEN: Go through it?

ASSEMBLYMAN ALBOHN: I don't know about anybody else. It's good for you.

ASSEMBLYWOMAN OGDEN: Well, I've got to see someone at lunchtime.

ASSEMBLYMAN ALBOHN: Why don't we make it half an hour then, instead an hour?

ASSEMBLYWOMAN OGDEN: Okay, half an hour. Okay.

ASSEMBLYMAN ALBOHN: Could we get back a little after 1:30?

ASSEMBLYWOMAN OGDEN: Okay. Sure. Is that all right with you, Art? I just have to do a little bit of business at lunchtime, so--

ASSEMBLYMAN ALBOHN: My company would like to find a substitute for my energy, too.

(RECESS)

AFTER RECESS:

ASSEMBLYWOMAN OGDEN: We'd like to continue now and conclude, I think probably within a half an hour or so, the hearing on cogeneration. With apologies to Mel Heuer, I would like to put him on first. I thought that the other representative, Gene McCarthy, from Jersey Central, was speaking for him, as well, and I learned later that he wasn't. So, the floor is yours, Mel.

MR. HEUER: Thank you. Very frequently I do get mixed up with Jersey Central because they do own us and control-- They don't control our operation, but they are our parent company.

My name is Melvin Heuer, and I'm President of Energy Initiatives, which is a wholly owned subsidiary of Jersey Central. Our purpose, as a subsidiary company of Jersey Central, is to promote and develop cogeneration within the State of New Jersey. In doing that, we operate as an independent developer for cogeneration in small power production.

We are an arm's length subsidiary of Jersey Central. We have a separate Board of Directors. Only one person from Jersey Central is on that Board. The rest are individuals outside of the utility business. There's a banker; we have our token lawyer; we have a professor; we have a small businessman; and, we have a fellow who is in promotion in advertising. A very diverse background, but structured specifically so that we take a look at the cogeneration opportunities not as a utility would, but as a third-party developer, an entrepreneurial aspect.

Today I would just like to address a number of issues that cogeneration developers face. Energy Initiatives has been in operation just a year now. We started April 1 of last year. During the last year we have had a number of successes. Our first project was the Holiday Inn, which other people mentioned earlier today. We are responsible for developing that. We own that cogeneration project. We are also developing three other projects in various stages, ranging from a 60-kilowatt unit at a senior citizens' housing project; Morristown Memorial Hospital -- we're involved in that project; and, a 60-megawatt project, which Gene McCarthy mentioned, at Marcal Paper Company. So, we cover from the small end of the scale -- from the 60 kilowatts -- all the way to the large end of the scale -- the 60 megawatts at Marcal.

The problems that cogeneration developers face are different depending upon whether they are selling power back to the utility or whether or not they are just generating enough power in thermal energy to meet their own internal loads. The smaller cogeneration developers, like the Holiday Inn, the hospital, the senior citizen housing, normally generate just enough electricity to meet their own load, and there is very little sell-back of electricity to the utility. So they really don't get involved in issues over wheeling or buy-back rates because they are isolated from that. They don't wheel very much power. But some of the things that affect them -- even them -- also affect the larger ones, things like the fuel sources that are available and the permitting process required to permit these cogeneration units.

The permitting issue is one that is somewhat confusing. I heard DEP state today that they can issue permits within three months. If that would happen, I would love them. They are great to work with. We have sat down with them before the issuing of permits to find out what they really need in the way of information to help them to expedite their process. But

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some of these permitting processes take in excess of a year, even with the best efforts of the DEP and everybody else involved. This is particularly true on the larger projects, where there is just a lot more to look at. One of the concerns I have is that DEP may be short staffed with the onslaught of cogeneration projects being presented to them. Certainly, if there are only one or two major projects they are looking at, they can have a reasonable time frame for their consideration and be diligent on analyzing these projects. If they are bombarded with 25 or 30 of these, everybody gets mired down in the red tape and the time it takes the processes, and they all have a negative impact then on cogeneration itself.

Even the smaller projects are reviewed by DEP. The 325 kilowatt unit we have at the Holiday Inn needed DEP approval, and we had to put a special catalytic converter on there to control the emissions of nox, one of the major concerns in cogeneration installations. That permit did take only a little over 30 days to get. DEP was very helpful. I would also like to point out that DOE -- the Department of Energy -- helped us in getting that permit and streamlining it through.

So, the State agencies have been extremely helpful -- and I would like to point that out -- in getting some of these things through, but frequently they get caught up in the influx, or just the mass of these things, and it is very difficult for them to deal with it. So I would caution some concern that as more and more cogeneration gets developed, additional staffing requirements may be necessary by some of these agencies to help in the review process of them.

The other thing I wanted to address was the gas rates that are available. Elizabethtown did mention that they are coming out with a special gas rate for cogeneration. Particularly, I am glad to hear that they are coming out with a firm cogeneration gas rate. The larger cogenerators, like

Marcal Paper, which can normally burn natural gas, do have the ability to switch over to oil. The smaller cogenerators don't have this luxury. Normally, their sites are not big enough to have an oil reserve available whereby you could switch over to oil when natural gas was interrupted. Currently, the only cogeneration gas rates in the State are ones that are interruptible. Public Service is the only one which has a special cogeneration gas rate available in this State.

I think having a firm gas rate and having the other utilities having special cogeneration gas rates available will go a long way toward encouraging, particularly, smaller cogeneration development.

The buy-back rates had quite a bit of discussion between DEP and BPU -- excuse me, the DOE and the BPU. There were some major disagreements on how those should be formulated and what they should be on avoided cost. We disagree with our parent somewhat. We would like to see high buy-back rates, as high as possible, but that would have a negative impact on the consumer, the residential customer, or anybody who has to support those buy-back rates that are artificially high. We do believe, though, that they should be based on utilities' avoided costs, the costs of some future plants that they would have to build if it were not for the development of cogeneration. We don't believe that they should be based upon the so-called PJM rate, which fluctuates. It's a fact of life that investors who invest multi-million dollars in these projects are looking for some sense of stability, and not left at the whim of fluctuating oil prices as to what their returns are going to be. That is a very major concern in evaluating the economics of these.

I should point out that a lot of the cogeneration development that is being developed in the State is not being paid for by the host site itself, like, Hoffmann-La Roche put their own in. Most of those facilities -- those people like

the fellow from the seal industry-- He said he would much rather invest his capital, if he had any, in things that would further his business. The people who are putting their capital at risk on these are third-party cogeneration developers from out of State. So they are very concerned about what the stability is of the revenue sources, not that they are artificially high -- everybody would like them high -- but they would like a stable environment to work in.

The other issue that is of concern to cogeneration is wheeling. It comes into play when a utility other than the local utility is willing to pay a higher rate for the power that is generated than the local utility is. New Jersey is fortunate in that it doesn't have major transmission lines. The State is very compact as compared to some of the other states which have been dealing in cogeneration, like Texas and California, where wheeling can be a major issue. It is my understanding that the BPU, right now, is trying to come with a postage stamp rate for cogeneration. I don't know if that is necessarily in the best interest of cogeneration developers. We had worked out a rate with Public Service Electric and Gas to wheel power from our Marcal project over to Jersey Central, based upon what is called "a contract path." You analyze the actual physical path that the electricity is supposed to take, and base your costs on that projection.

The BPU then suggested that you go to a postage stamp rate, which is not sensitive to the distance, but is like mailing a letter from here to California. It costs the same as if you mail it from here to Pennsylvania -- a rolled impact. That ends up costing us more, so in helping cogeneration, they cost us more to wheel power.

Frequently, one of my concerns is that some of the State agencies, in an effort to spur cogeneration, are going to help cogeneration no matter how much it costs the developer. They are going to do something just to show that they are

acting in a positive way, without having the input from some of the developers as to what the real impact is on specific projects.

Those are the major areas of concern that I wanted to express to you from a developer's standpoint. If there are any particular questions you would like to ask me, I would be happy to try to answer them.

ASSEMBLYWOMAN OGDEN: Art?

ASSEMBLYMAN ALBOHN: I just don't see how a long-term rate can fairly be guaranteed. You know, that might be great for the getter of the long-term rate, if it is low enough. It could be to his disadvantage if it is too high. But, why shouldn't the rate fluctuate, the same as it does in every other kind of a business?

MR. HEUER: I'm not opposed to a fluctuating rate, as long as it is pegged to something that I can anticipate. As a matter of fact, the long-term contract we have with Jersey Central on the Marcal project, which is a 20-year contract-- A portion of that rate is fixed. It is based upon Jersey Central's investment in a new plant, and that is going to be fixed. That's roughly 50%. Forty percent of it fluctuates with Jersey Central's cost of natural gas and oil, and that is going to fluctuate over the years. The remaining portion fluctuates with some economic indices. One is the gross national product deflator, and the other is Jersey Central's retail rates.

I have no problem with having those rates fluctuate with those types of indices. My concern is having them fluctuate with something completely independent of what affects the cogenerator's operation -- the PJM rate. That rate is, in effect, dependent upon how State commissions allow -- different State commissions, even outside New Jersey -- the other commissions in the pool -- those utilities in the pool -- to recover costs from the PJM and how they account for those costs

of the PJM system. They really have nothing to do with what we are supplying Jersey Central with on a long-term basis.

ASSEMBLYMAN ALBOHN: Then, really what you're saying is that you have no objection to fluctuating rates, provided, perhaps, that they are controlled within the State, instead of being subject--

MR. HEUER: No, I think as long as you have-- If the fluctuations are tied to some real indices that we can project and anticipate, like the fluctuating portion of our rate, which is roughly 50%. That is tied mainly to Jersey Central's cost of natural gas and fuel oil. That is tied to our production costs, which vary also. So, it makes sense that that should be.

ASSEMBLYMAN ALBOHN: When you speak of a long-term rate, are you talking 5, 10, 15 years into the future? What is a long-term rate?

MR. HEUER: Ours is 20 years.

ASSEMBLYMAN ALBOHN: So you want the rate guaranteed for 20 years?

MR. HEUER: Not a guarantee, but the premise that it is based on guaranteed for that period of time. Rather than say it is going to fluctuate with something that-- Nobody knows what is going to happen over the next 20 years, and if you look at the PJM rate, that rate has fluctuated about 200% in the last five years, high and low. There is no way anybody would invest in our business if the cost of selling their product had those great fluctuations.

ASSEMBLYWOMAN OGDEN: So you're talking about setting forth the so-called guidelines that the fluctuation would be based on, as opposed to the actual numbers?

MR. HEUER: That's right. Jersey Central based their costs-- The rates that they are willing to pay us on the Bayonne project, and the other ones, are based upon their avoided costs of a new plant. That is the fixed portion, the capital cost. That is going to be fixed for the life of the project.

Then the varying portion-- They said it is going to vary with their costs of gas and oil. That's fair. That is how they would generate electricity if they had to do it. We're willing to live with that because that is how our actual costs are going to vary, because we're burning natural gas and oil. We may pay more or less in any given month than the utility would, but they are going to fluctuate together. They are not going to get gas at half the price we are going to get gas at.

So, that makes us comfortable, that those things would fluctuate the same way the utility's rates would fluctuate, but the PJM running rate is artificially driven by factors outside of those controls of what Jersey Central actually has to pay for its avoided cost.

ASSEMBLYMAN ALBOHN: Okay. What you're really saying is that you are not opposed to a fluctuating rate; you're opposed to the PJM fluctuating rate because you don't like the factors upon which it is based.

MR. HEUER: That's right. We have no sense for what's going to happen. If it is based upon some indices that everybody can agree to, we're happy with it.

ASSEMBLYMAN ALBOHN: Little things like inflation, and so on, would enter in there, too. I can't see how anybody could guarantee anything 20 years ahead without having it tied to something.

MR. HEUER: That's right, and that's why parts of it vary with the PJM deflator, which covers our inflation for wages, materials, and supplies, as it would for the utility. I think those types of avoided cost scenarios make sense. I would love to have what DEP proposed, to have the avoided costs based upon the co-plant for the capital and the fuel for natural gas, which are the two highest. I just don't think that makes sense. I don't think you need that. We're not looking for exorbitantly high buy-back rates because I think

that hurts the consumers, because they're subsidizing cogeneration then. I think cogeneration can make sense without gross subsidies. I think you just want to be treated fairly.

ASSEMBLYMAN ALBOHN: This is where your difference with BPU arises then, because they have decided that the PJM rate is plus 10%, or whatever. In their eyes that's fair, and in their eyes that is tied to inflationary (indiscernible) one form or another.

MR. HEUER: That is where we would differ. If they believe it is, I don't believe it is. The people who are putting their money at risk here are looking for stability, something that they can project, something that would tie in with what their cost of doing business is -- the cost of raw materials or the product -- and the PJM rate just doesn't do that.

I just think it's a poor factor for doing long-range planning. If you just look at the variability in the PJM rate over the last five years-- Last year at this time it was twice as high as it is today. Last year it was around six cents a kilowatt hour; today it is around three cents a kilowatt hour. A good portion of that is due to the cost of gas and oil, but a lot of it is-- It came down even without that. I just think it--

ASSEMBLYWOMAN OGDEN: It's what plants are in operation, what are down, and--

MR. HEUER: That's right. It depends on when a nuclear plant comes on line how much excess capacity there is. If there is a major failure in a nuclear plant and it is taken out of the base and capacity is short, then the price goes up. For anybody who is going to invest \$100 million in a cogeneration plant in New Jersey, they are just not going to take that risk.

ASSEMBLYWOMAN OGDEN: Would that be the key thing, as far as you are concerned, that makes people hold back as far as cogeneration is--

MR. HEUER: On the smaller projects like the Holiday Inn, that is not an impact because there is very little sell-back to the utilities, so the buy-back rate isn't-- But on the big industrial ones, like the Marcal, it is the significant factor in what those buy-back rates are going to be and what the stability of them is going to be. We're not talking about subsidies and paying over price for them. It's a matter of having them not fluctuate wildly and having some reasonable projection as to what those costs are going to be, and trying to nail those down.

You know, once we sign a contract with Marcal to supply them power, we can't go back to the local friendly BPU and say, "We have to increase our rates." Marcal would say, "No way; you just can't do it." The energy sales to Marcal are based upon a 20-year projection, and there is no going back once you have made the commitment that you are going to supply the host energy user with electricity and steam at those prices. If our costs go up, we eat those costs. There is no going back and asking them for increases.

ASSEMBLYMAN ALBOHN: There's no relationship whatever to the going market price for electricity, what they would have to pay otherwise?

MR. HEUER: You can tie it in that way if you want, but if your costs go up beyond what you projected, you have to eat those costs. You don't have the ability to go out and sell that power again to another third party. If Marcal didn't want to buy it, you can't just go down the street and say, "Well, we'll sell it to the Raritan Steel Company," because we are not in the utility business. We can't sell to anybody we want. It has to be sold only to that host energy user. So we have a rather limited market on where we can sell that power. That's why they're very concerned that you tie it in to a fixed price.

Jersey Central and the other utilities aren't fixed in with only selling to one customer. They have a multitude of

customers out there that they can sell to. They can always go back and ask the BPU for another rate increase. You know, it's not an easy job, but they can increase their rates.

ASSEMBLYMAN ALBOHN: In the Marcal case, you own the machinery, I guess. They're just providing the power. Is that essentially the case?

MR. HEUER: That is correct.

ASSEMBLYMAN ALBOHN: Okay. So I can see where Marcal says, "Look, if you mess up your machinery so it blows up in your face or something, we are not going to be responsible for that cost. You are going to have to provide us with power," I guess, "from Jersey Central, at the same rate that you promised to pay us for."

MR. HEUER: That's right.

ASSEMBLYMAN ALBOHN: I can understand their position on that, but if costs, in general, go up, I presume you need one man operating that machine anyway.

MR. HEUER: We have our price to them tied in to our costs of fuel and some escalations on things, too.

ASSEMBLYMAN ALBOHN: Oh, okay.

MR. HEUER: But those are things where the project is going to realize that there is not some artificial factor out here calling PJM, which has nothing to do with the costs of our goods, our services, and our labor. It has nothing at all to do with those factors. So, what we try to do is tie our price into those things that affect us. We have no problem with tying our sale price to Jersey Central into those same factors. What we don't like to do is tie them into something that is completely independent, floating off over there, that has no impact on our operations.

ASSEMBLYMAN ALBOHN: So, you and Bill Potter see very much eye to eye on this then, because I have the feeling that this is one of the thorns that is under his saddle, too, the PJM rate. Is that right, Bill?

MR. POTTER: Yes, sir, it is.

ASSEMBLYMAN ALBOHN: And the BPU is the one out there in left field from you folks. But on the other hand, it is their responsibility to establish a fair and equitable rate, except that you don't think that it is fair and equitable. That's about it.

MR. HEUER: At any given period of time, it can be fair and equitable, but I think that in the long run, with those wild fluctuations, either the-- It is not going to be fair either to the cogenerator or to the utility. You are going to be overpaying or underpaying. It is that uncertainty, those types of things, that cogenerators do not like to see.

ASSEMBLYMAN ALBOHN: What is BPU's response to this? I mean, I don't know the numbers, and up until a week ago I never heard of PJM, you know. I learned a little bit by reading Bill Potter's submissions. You know, the complexity of just how that rate is set escapes me, without pouring over it several more times anyway.

MR. HEUER: I don't know why the BPU-- I think it's an easy way out. You know, all the utilities are members of the PJM grid, and in the short-run, on a day-to-day basis, they buy and sell power to PJM. So, you know, on a day-by-day basis, that is their incremental cost, their avoided cost on a day-by-day basis, but it has nothing to do with their need or their ability to build the next generating unit when that is required. When the PJM pool diminishes-- When the excess capacity drops down, the PJM rate is going to go up, and the utilities are going to be building again. Once they bring a big hunk of power on-line, something like 1000 megawatts, like Hope Creek, that is going to drive the PJM rate back down because that excess capacity is going to be there. So, that is why this thing fluctuates as wildly as it does.

ASSEMBLYMAN ALBOHN: What role do you see the Legislature having in something like this? We're certainly not going to be able to establish rates or anything like--

MR. HEUER: I don't think there is anything the Legislature can do, other than to try to influence those people and departments that have jurisdictions over those regulations. But certainly I think you should be aware of them from the different perspectives, from DEP's standpoint, and from a developer's standpoint -- how they view them. If you are really interested in seeing cogeneration develop in this State, it is those types of things that are going to make it happen or not make it happen.

The same with the permitting with DOE. You know, the fellow this morning said three months. They're telling our people a year, and I think a year is more realistic.

ASSEMBLYMAN ALBOHN: Well, isn't that, at least in part, due to the fact that this is a whole new kind of problem they're facing in air pollution control?

MR. HEUER: Yes. They also just recently received the responsibility for these permits. Previously, those permits were granted by the Federal government. The DNR -- not the DNR -- the EPA had jurisdiction over granting these air quality permits. Just within the last year or so, that responsibility has been put on the State regulatory bodies, and so it is an extra burden on them to process these. That is one of my concerns, that they don't become overburdened, or, if they do become overburdened, that they recognize it and don't try to be the hero and say, "We can do it ourselves. We don't need any more help," or when they ask for help, that that cry not fall on deaf ears.

ASSEMBLYMAN ALBOHN: Do you pay the same \$250 permit fee for that that everybody else pays, or is there some sort of a scale up there for--

MR. HEUER: I don't recall what our permit fee was on any of our projects.

ASSEMBLYMAN ALBOHN: All I know is that on small boilers it is \$250, which sounded like a lot to me. But if you

hope that those same delays don't become a problem for cogenerators in the State.

ASSEMBLYWOMAN OGDEN: Thank you very much, Mel. Next on the list is Richard Stokes, from Atlantic Electric.

B R I A N A. P A R E N T: Madam Chairman and members of the Committee, my name is Brian Parent from Atlantic City Electric. I'm Senior Vice President of Planning and Rates. I've given out some prepared comments. What I hope to do today is -- given the hour -- not necessarily read all that, but try to paraphrase it for you. And, I'll try to keep this part short since you have it to read and, hopefully, address some of the comments or questions that were raised during the day when I conclude.

I'd like to start out at least with the concept, or a statement, that we as a company are in favor of economic cogeneration. I use the adjective economic because to us that's very important. We've been involved with cogeneration since 1928, so it's not new to us.

And, I have three main points that I'd like to at least mention here about cogeneration and the Energy Master Plan, and other aspects of it relating to our company and our service area.

First is, pursuing cogeneration under the guidelines contained in the Master Plan will result in major economic inefficiencies. And I'll develop that a little further and support that with -- in addition to my own analysis -- with some work that's been done by the United States DOE.

Second -- the second comment is that a result of dual and overlapping regulation in New Jersey -- essentially between the BPU and the DOE -- causes utilities and cogenerators alike to face impediments to timely development of cogeneration.

And the third point is, even though New Jersey is a small State, Southern New Jersey is significantly different than Central and Northern New Jersey in many ways, and one of

those ways is natural gas; natural gas is not available in large volumes throughout the year in Southern New Jersey. Now, you can certainly purchase and arrange for fuel supplies, or natural gas supplies, but these supplies cannot be transmitted year 'round in Southern New Jersey.

Let me go back and address the first point, the economic inefficiencies. In mid-March, the U.S. DOE released a study on merging policy issues and PURPA implementation, and that study identified eight inefficiencies that the DOE found throughout the United States in state implementation of cogeneration and other PURPA initiatives. I've listed those in the testimony, and I'll just cover them very briefly.

1) Requirements for utilities to purchase power from qualifying facilities at rates which exceed the utilities avoided cost. You heard a lot about avoided costs today, and there is a lot of ways to define it. Hopefully, I'll tell you the way I think it should be defined in part of my conclusion.

2) Requirements for utilities to include capacity payments to qualifying facilities when the utility has excess capacity and no measurable savings will result from those qualifying facility purchases. In all of this you can equate qualifying facility with cogenerator.

3) Failure to properly distinguish between "sunk costs" and "avoidable costs" in determining the purchase rates for cogeneration.

4) Failure to consider qualifying facility availability and reliability in determining the purchase rates.

5) Offering incentive payments to qualifying facilities which are not directly linked to the utilities avoided cost, but are viewed as necessary to encourage cogeneration, of qualifying facility development.

6) Establishing minimum or uniform statewide purchase rates for QFs which fail to correspond to the avoided costs of the purchasing utility.

7) Mandating purchases from qualifying facility which require facilities to deviate from what would otherwise be considered the most efficient mode of system dispatch and operation.

8) And, in many ways, restricting the ability of utilities to competitively solicit the needed capacity from qualifying facilities on a least-cost basis.

After dealing with the State Energy Master Plan through its draft and its final version -- ah, I believe that all eight of these inefficiencies are represented in the Master Plan as it exists right now.

Ah, in addition, in talking with the people at the U.S. Department of Energy and attempting to get their assessment, I believe that they concur with my assessment -- and that is, the State Master Plan contains all of those inefficiencies. And I really believe that if we go ahead and implement cogeneration in the State of New Jersey under the existing Master Plan, we will be doing a great disservice to, and be providing a hoax on the consumers on New Jersey because it will not lead to lower energy rates. It will lead to higher energy rates. And if any casual reader of the New Jersey Energy Master Plan will walk away from that document with the belief that cogeneration is going to be the item or entity that will lower the cost of electric power in the future-- And I don't believe that's so, and I don't believe it can be demonstrated.

The second point, dual and overlapping regulations: You've heard already today that two entities are involved with this: the New Jersey DOE, and the New Jersey Board of Public Utilities. Each entity at one time frame or another has claimed jurisdiction, and -- ah, that presents part of a problem.

The other thing that's not a problem -- it's just a fact of life -- is just about all new base load electrical

capacity costs more than existing capacity. So any new addition, whether the utility supplies it or a cogenerator supplies it-- Any capacity that's base load in character costs more than the average that's already installed and operating. So, utility rates will rise just because of that fact.

However, what we have tried to do in New Jersey is-- I've gone through some of the New Jersey Department of Energy proposals for cogeneration. The BPU has their own, and you've heard about them. Essentially, what they have said in the past, in words, as to PJM billing rates is, increase that by 10%, plus add the PJM capacity deficiency charge, and that is what to pay cogenerators. They're the words. When the BPU first initiated that, the interpretation that I think was universal was that that was to be used as the basis for negotiating the purchase power rates with cogenerators -- in other words, as the minimum to pay. In that definition form, that exhibits many of the economic inefficiencies that I alluded to earlier.

The latest interpretation by the staff of the Board of Public Utilities is that those -- that same word form should be a maximum. And we have had contracts before the Commission where the staff took that point of view, that it should be a maximum. I don't believe that is correct either. And what I really believe to be correct is that each utility's avoided cost should serve as the basis for what is paid to cogenerators. If the utility has a large amount of excess capacity, cogeneration development in its service area to supply electricity to that utility is not going to produce a benefit to that utility. That cogenerator may want to look to another utility as the outlet, if you will, for its excess power.

But, I think you can do a lot in this area in helping to clear up the confusion that exists between the two regulatory agencies, and I think part of that confusion and

impediment comes down to, a lot of developers of cogeneration come to the utilities with the mind-set that they've read the buy-back rates in the DOE Master Plan that says, "That's what you should pay me," and then the utilities say, "Well, guess what? We have to be regulated by the New Jersey BPU, and we're not going to pay you anything that's not recognized in our cost structure," and they won't recognize those costs. And so then, we spend a fair amount of time haggling between each other, bringing in the two regulatory agencies involved, and finally settling down on one point.

And so I think when you asked earlier what could you do -- or what could the Legislature do -- I think you can clear up some of the confusion that may exist that created those two agencies and seems to give them some overlapping areas.

The third thing, and I mention it very briefly, is New Jersey -- southern New Jersey -- is different. Our per capita density is less than central and northern New Jersey. Yes, we have natural gas available, but it only reaches 30% of the geographic area in southern New Jersey, and only 50% of the population. The transmission facilities to move natural gas around southern New Jersey cannot handle the amount of gas required by cogenerators on a 12-month year basis.

The latest cogeneration activity we have been involved with has been located on the Atlantic Ocean portion of our service area, the very eastern portion, and the most optimistic forecast of gas availability would be six months out of twelve. That definitely is an obstacle to development of cogeneration when that form of energy is not available on a year-round basis.

They're the major points. I'd like to emphasize, we are in favor of economic cogeneration. Noneconomic cogeneration will be a burden to every ratepayer in New Jersey, including you and including me.

I'd be glad to answer any questions you may have on this, and I'd like to offer myself and my staff for any questions you may have in the future.

Before you do that, though, let me just mention a couple things where you had questions, and you said, "I hope the utilities that are here will try to answer them."

One of the questions that developed specific to each utility is, how much cogeneration do you see materializing in your service area?

Right now -- at this moment -- we are in one stage or another concerning 200 megawatts of cogeneration. That's equivalent to 15% of our installed electrical capacity. Some of that will materialize; some of it will not. Some will materialize because the fuel availability is there and because the purchase price is within the constraints established by the BPU. Some will not materialize because those two things are absent in some degree. Others will not materialize because the application is not necessarily the appropriate application.

The point is that it is being pursued and that some of it will be developed. But I don't think it is going to be the final solution to the electrical needs of the residents of this State.

One of the concerns I have about it is, we are all aware that in the past, we strove very strongly as a State to diversify our energy supplies. We were very dependent in the early '70s on oil, and we don't have oil as a natural resource in this State -- and we don't have gas. And utilities received a subliminal message from all these regulatory authorities about, "Gee, you know, it would be better if you diversified." Even though oil at the time was the lowest cost -- and we were driven to oil because of environmental regulations and others -- we also recognized the benefits of diversifying. And if you look at most utilities now, they get their power from nuclear, coal, oil, and gas.

You won't find, in my opinion, too many cogeneration projects that use anything but liquid or gas as fuels. You'll find some that use petroleum coke in New Jersey. You'll find others in other states that use different fuels, but most of the activity you see in New Jersey is going to be tied to liquid and gaseous fuels. If cogeneration turns out to be the total future capacity source in this State and we build nothing else to supply the electrical needs, then at some point in time we're going to be held hostage to the people who have the oil and gas that supply it to us. I don't think you want that. The cogenerators, I don't think want that, and I don't think the State wants it.

You asked, "What do we do to sponsor cogeneration?" I think we, as well as the other utilities, have offered to fund, and have funded, cogeneration studies for customers. We've spent \$2000 per study for over 20 studies for smaller customers in our service areas. We have spent larger sums of money for the major industrial customers who have asked us to examine cogeneration in conjunction with them. And one of the things we find in most instances is that those cogeneration applications will go ahead further and faster if the utility is in some way participating. The customer feels more comfortable if the utility is participating in that process.

You asked also a little earlier about the high cost of energy in New Jersey. There's no debate. We do have high rates, and as a state, they are probably the highest rates -- ah, of any other state. We don't have hydroelectricity of the other things, but there are some things that we have done, rightly or wrongly, that caused those rates to be high. We have stricter, and have had stricter, environmental regulations in New Jersey. That's fine. I'm not saying that's wrong, but we should recognize that was a cause. We have a tax called the Gross Receipts and Franchise Tax in this State that we, as Atlantic City Electric Company, pay more in gross receipts and franchise tax than we have in net income every year.

We could reduce at least by 10% -- ah, our current existing electric rates by changing the system of that tax. They're just some considerations.

ASSEMBLYMAN ALBOHN: I don't want to interrupt your very interesting remarks, but that's something that I was worried about the other day with regard to rates and the level of rates in New Jersey as compared to elsewhere. And if we were to do away, let's say, with the Gross Receipts and Franchise Tax, where would that put us rank-wise in the country?

R I C H A R D S T O K E S: I don't think you can do away with it, because I think what it replaces is a property tax. They would have to give the municipalities some kind of property tax in lieu of the gross receipts.

ASSEMBLYMAN ALBOHN: I know, but right now we're just sort of hiding the tax; that's all we're doing.

MR. STOKES: Right.

ASSEMBLYMAN ALBOHN: We're still taxing the same amount.

MR. STOKES: Right. The problem with it now is, it's based on revenue, and every time a utility's revenue goes up, the gross -- You have to raise it even higher to collect the gross receipts and franchise tax funds. So, if it was in some way capped or limited, I think it would go a long way to help mitigate the increasing cost of electric power.

I'm sure it's common knowledge that Atlantic City Electric Company and DELMARVA looked at an affiliation over a year and a half ago, and if you put the two companies' income statement side-by-side, we had one big line item -- \$70-some odd million for gross receipts and franchise tax. You couldn't find a line item on that on their income statement for that. And, if you look at Delaware's rates for electricity, they are significantly less than New Jersey, but we have decided that's how we as a state want to operate.

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So, there's just a couple of points there. Let me just clear up a couple of misstatements earlier. One was that the PJM was in need of power from Canada. PJM is not in need of power from Canada. PJM, for its member companies-- And the member companies in the PJM have been buying power from the West, when the operating cost of that power is cheaper than we could generate it ourselves here. The reason that is so is because many utilities in the West or the Midwest have extreme amounts of surplus capacity and are willing to price their produce to include the variable cost and not the fixed cost. So if we're just comparing the variable cost of us operating our plants, or the variable cost of them operating their plants, and they can do it cheaper because their environmental restrictions may be easier than ours -- or whatever -- that's why we do that. That ends up benefiting the customer.

Yes, utility systems buy power from Canada. Yes, it does affect the PJM, but it's the New York Power Pool that buys the power from Canada, and flows from Canada to the New York Power Pool to impact the PJM Transmission System, for which the PJM Transmission System and the member companies will get compensated.

Now let me just check another, and there may be another one -- the running rates, the billing rates on the PJM. Ah, I think there was some comment that they were under the control of other regulatory jurisdictions; they're not. The running rate on the PJM does not reflect the total cost of any capacity. The running rate, in some sense is-- It doesn't reflect the regulatory cost. Each units that exists of electrical generation in New Jersey, Pennsylvania, and all the other areas in the PJM is ranked, if you will: Which unit has the least cost of producing energy, all the way to the highest cost. And all the running rate is, hour-by-hour they schedule the units; they schedule the cheapest one first and as the load grows or decreases, it goes up and down the list. No

regulatory authority determines what that running rate is, nor does a regulatory authority's decision to allow a utility to have a plant in our out-of-rate base for retail rates determine what that running rate is. It is a purely total cost number that the utilities and the PJM use amongst themselves. So, I wanted to clear up that point.

There are a couple of others, but maybe you have some questions and I'm taking too much time. So, let me let you ask some questions.

ASSEMBLYWOMAN OGDEN: Art?

ASSEMBLYMAN ALBOHN: I'm taking too much time. I have found your remarks most enlightening -- maybe because I agree with some. But the natural gas situation in southern New Jersey-- I hadn't really been aware of that, but it strikes me that it also exists in northern New Jersey during peak times in the heating season.

I remember not too many years ago, during cold weather, when I think the plant that I work at was on an interruptible basis, and we -- we were unable, or had to be prepared for shutdowns at that time. And it just seems to me that perhaps while you bring it out with regard to southern New Jersey, maybe the situation prevails statewide.

MR. PARENT: It may. I'm mostly familiar with southern New Jersey because that's where we're developing cogeneration, and that's one of the problems we've run into.

ASSEMBLYMAN ALBOHN: Of course, my point really was that the need for cogenerated heat and electricity would be at the same point in time when you have peak need for gaseous fuel, I suppose -- mid-winter. So, we have cogeneration, in effect, working against the gas distribution system, and its ability to supply the necessary amounts of gas, which makes it seem another -- what did you call them? -- economic unreality or economic inefficiency.

One of the things that concerns me -- and I think someone mentioned about it here -- is that there has been too much meddling on the part of the Legislature in attempting to do good things. And that-- One of the things that really worries me is that cogeneration hasn't taken on some of the aura of a fad, and that the popular thing is to be "with it," and that people haven't looked deeply enough below the surface. And -- you know -- for my part, this is the first time I've had any opportunity to try to look beneath the surface a little bit, because it looked like a motherhood issue. Yet, maybe it isn't that, and maybe we shouldn't be trying to find all sorts of cogeneration facilities at the expense of the taxpayer -- certainly not discourage them, maybe certainly try to expedite things through DEP and things of that nature.

But as far as rates are concerned, and controlling rates, and establishing what they should be -- ah, as long as the buy-back provision is not extraordinarily out of line with what the value of the energy is, it seems to me that we should leave our hands off the whole business and not try to manage the economy.

MR. PARENT: Can I comment?

ASSEMBLYMAN ALBOHN: Pardon me?

MR. PARENT: Can I comment?

ASSEMBLYMAN ALBOHN: Sure. I don't think any utility is not supportive of economic cogeneration. And you've heard about different types of cogeneration. You've heard about those installations where there was a thermal and electrical balance, where there was really no electricity to sell. The customer found that the steam requirement or the thermal requirement that he had matched up so well with his electrical requirement, that he wasn't generating excess electrical power that he had to dispose of.

You've heard of others where there a much greater electrical output than the customer needed. We're not concerned that cogeneration is inefficient. What we are concerned about -- because it is efficient-- What we are concerned about is how we price that surplus that the utilities are required to buy. Because what our objective is -- essentially is -- is to look at how we're going to provide the electrical supplies to our customers in the future at the lowest cost. To do that, we look at supply side options at central station power generation and other things that utilities would do by themselves. We look at things that we can do on the demand side: What can we do to influence the customer, whether it's conservation initiatives, direct load control on his air conditioner or water heater? And you can look at cogeneration, how you price that. If you price that at such a level that it exceeds what you could have otherwise have provided that electrical capacity for, then you've priced it too high. And that's when we would say that it's noneconomic. You're pricing it higher to society -- to us -- and we are going to pass it on to society -- than otherwise has to be, and that's when we would say it would be inefficient, and we would not be in favor of that.

If the developer, or the cogenerator, could live with the rate that we would call are true of what it costs, we would be happy with that. At the moment, that rate is less than what the New Jersey DOE says. It's more than what the New Jersey BPU says under their revised interpretation of their same words, which now say the PJM + 10 + capacity is the maximum. If you don't need capacity because you have a capacity surplus, that's fine, and you shouldn't pay for it -- you shouldn't have to pay for it -- but your customers will not benefit. But if in the future you need capacity, you should pay the fair cost.

ASSEMBLYWOMAN OGDEN: You know, going back to the natural gas being available only six months of the year, I

would have thought that was because there were so many people down in the southern part during the summer and it was needed to -- in terms of air-conditioning for that.

MR. PARENT: Surprisingly enough, the unavailability is during the wintertime. What happens is, you could certainly acquire from a producer, natural gas. But the pipe line capacity in the ground will not allow you to move the volumes in the wintertime to different -- all locations in southern New Jersey where the pipe lines exist. So, the cogeneration facility that is perspective to be located in Atlantic City, they could potentially get gas for maybe June, July, and August, full time, and partial months, or partial time during the months surrounding that. The net equivalent would be six months out of twelve they could get. But it's the wintertime when you couldn't get the gas there.

ASSEMBLYWOMAN OGDEN: Then the last question, do you have a separate company like Jersey Central does? Have you set up a separate one too?

MR. PARENT: At this point, we have not. The cogeneration that we've been involved with (indiscernible) do not say we do not. The code I have been involved with for over 60 years is under a separate company, but it is a subsidiary of the utility. We have not gone to the other structure as of this point and created a subsidiary of a non-regulated entity. That may be advisable at some point in the future, but we haven't done it yet. But, it is handled as a subsidiary.

ASSEMBLYWOMAN OGDEN: Well, thank you very much.

Let's see, Bill Wood, of Public Service.

W I L L I A M W O O D: Madam Chairman, members of the Committee: I think you have all received a copy of my testimony. I will not read the whole thing for you. I will spare you that, and will try to summarize it. I have a couple of changes that will have to be made -- some typos -- and I will correct them as I go through.

My name is Bill Wood. I am the Manager of Power Supply Planning for Public Service Electric and Gas Company. Since 1981, Public Service has had a formal written policy on cogeneration; that is, to encourage energy-efficient, economic cogeneration, and to participate in such projects where they are in the best interest of our customers and our stockholders, and also, under law, to purchase the electric output of any cogenerator at a cost that is set by the -- an avoided cost set by the BPU.

While it is difficult to estimate future cogeneration within our territory, right now in our capacity forecast, we are estimating a total of about 475 megawatts that will be in service by the end of the century. This does not include the roughly 130 megawatts that are now in service -- that went into service primarily before PURPA was enacted, and also another almost 250 megawatts of cogeneration that are located within the Public Service territory, that will be wheeled to Jersey Central Power and Light.

As was mentioned this morning, cogeneration is not a new thing. Public Service has been in the cogeneration business for about 30 years. In 1957, we build the Linden Generating Station that produced electricity and supplies steam to the Exxon Refinery in Bayway, and for which we receive fuel and water in exchange.

We conducted our first cogeneration potential survey in 1977. This was later updated to 1988. About that time, we estimated that we had about 150,000 kilowatts that were economically feasible cogeneration at that time.

Recently, as part of our Conservation and Load Management Program, we have instituted a Cogeneration Feasibility Analysis Program. We have hired a nationally known consultant -- Dames and Moore -- to conduct an analysis of the feasibility of cogeneration within our service territory.

During 1984 and 1985, we have contacted 375 of our largest customers. The PSE&G marketing engineers call on our customers and encourage them to fill out a detailed questionnaire. Once the questionnaire is filled out, it is shipped to Dames and Moore, who run the study and send the results directly to the customer. To date, we have analyzed the cogeneration potential at 88 of our customers.

We asked some of our customers who have done cogeneration feasibility studies on their own, to compare what we have done with what they have done, and they said that they compare very favorably. We intend to continue this program, and in 1986 we will contact even more customers.

One of the differences we have between the 375 customers that we have contacted and the 88 analyses that we have completed, is the fact that some of the customers have indicated they are too busy at the time, they are concerned with other work, and our marketing people have to sit down and sort of lead them through in order to get the necessary information for completing the study.

We have also provided our customers with a Cogeneration Information Guide, and I think all of you have received copies of that Guide. This is a package of information that is turned out and handed to our customers. It contains technical descriptions of various cogeneration schemes, a rundown on the Federal and State regulations, what the utility requirements are for interconnecting with the cogenerator, a sample power purchase contract, some information on environmental considerations, and finally, some financial information that they can use in doing their initial screening.

Currently, PS has -- and this is one of the corrections, that number should be 109,700 kilowatts -- of capacity under contract. This includes the Trenton district energy company's facility in downtown Trenton, a facility at Kinsley Landfill in Deptford, a small hydroplant located at

Dundee Dam on the Passaic River, the American Ref-Fuel, a resource recovery facility that will be located in Newark, New Jersey, and the Starmark Energy System, which will be in Hamilton Township, and which will use the pressure differential between the high pressure of the gas transmission system and the lower pressure of the gas distribution system to generate about three megawatts of power.

Incidentally, the talk this morning about the problems with licensing for cogeneration-- In addition to other services, PS is doing work for Starmark, helping them to prepare the necessary applications for securing the permits required for their facility. Our licensing-- The Public Service Licensing Group, which has had a lot of experience dealing with the submitting of applications for licensing, is working with Starmark on that.

The sixth project we have is a hydroelectric facility that is located at Great Falls on the Passaic River in Paterson. This will have a rating of about 11 megawatts, and is expected to produce about 33 million kilowatt hours a year. And roughly, in Public Service territory, an average use for a residential customer is somewhere between 5000 and 6000 kilowatts a year.

With these two hydro facilities, we'll have captured over 50% of the hydro capability in the State of New Jersey. We are also in negotiations with about 20 other cogenerators and small power producers. We have also taken a role in the industry as a researcher and a tester. We have a 60-kilowatt factory-assembled, gas-fired diesel cogeneration facility at our Gas Meter Shop in Springfield. We are also participating with other gas utilities in the installation of two 40-kilowatt fuel cells that will be operated in a cogeneration mode. The 40-kilowatt fuel cells are co-sponsored by the Gas Research Institute and the USDOE.

As a result of the growing interest that we have found in cogeneration, we have formed a subsidiary called Community Energy Alternatives, Inc., with the express purpose of developing and participating in cogeneration and small power production projects. This subsidiary is currently involved in about four or five developing projects within our territory.

So, we have included cogeneration in our capacity planning and in our load forecasting. We have done a myriad of activities to encourage cogeneration within our service territory, with the idea that we would be forwarding the goals of the National Energy Act, of which PURPA is one part. The major goal would be to increase efficiency in the production of electric energy.

However, care should be taken to balance the impact of incentives against the possible cost to others, and here again, I think we have two concerns as far as cogeneration's effect on our future plans. One is, what cost will that cogeneration represent, and what will be the availability? The one definition that you heard this morning by the New Jersey DOE would include the capital costs for a coal-fired baseload unit and the energy production costs for a gas and an oil unit. I think Steve Gable gave you a good illustration of why we think that is not an acceptable plan.

As I mentioned-- I skipped over this before, but I should have mentioned that with the 475 megawatts that we see in our forecast, plus the Hope Creek Nuclear Plant going into service this year, Public Service does not see the need for additional generating capacity until after the year 2000, and probably we will not see a need for a baseload capacity until further on in the first decade of the next century.

A cogeneration facility going into service today would be in service 15 to 20 years before Public Service would actually need the capacity to meet its reliability goals. The 15- to 20-year period represents a major portion of the life of

a cogeneration facility, so by the time we are ready to use it, it has already used up 15 or 20 years of its useful life and may not-- In Public Service, we estimate that gas turbines have a life of around 25 years, so we're over two-thirds to three-quarters into the useful life of the plant.

Therefore, we think it is inappropriate to provide any capacity payments over and above those which have already been defined by the New Jersey BPU. Incidentally, the capacity payment defined by the BPU is the PJM capacity deficiency payment. We do not see us making payments to PJM during the next 20 years or so.

There are many reasons why a cogeneration facility might not be in service when we actually need it. There are things -- the process changes, the industries change, their need for steam changes, there are market economic conditions, possibly plant relocations, and changes in the investment objectives by the operators of the cogeneration facility. A cogeneration facility, unlike a utility, is under no obligation to serve. Its obligation is to the host plant.

As we said before, we do not think it is appropriate for the capacity payment to be based on future baseload units, since the energy source in the future will probably not be oil or gas, but probably some form of coal-derived energy, and in most cases, will not be the kind of facility that we see now where we burn pulverized coal and put it in a scrubber, but something that will use either a coal gasification facility or possibly a fluidized bed.

We have established for the hydroplant at Great Falls a levelized rate, and there are risks in determining a levelized rate for a small power producer. One is that you give him high up-front costs, which are above your avoided costs in the early years, with the hope that in the later years you will recover those costs. If the facility doesn't stay in service that long, you do not have a chance to recover those

costs. Now, in the case of Great Falls, we have built in some insurance for us so that if the facility does not stay around for the 15 years that the levelized rates are in effect, there will be some compensation for our customers.

Also, at the end of the time in the Great Falls contract when the payments are equalized so that we have recovered all of the up-front money that we put into effect, the rate that we will pay for the hydroelectric power will be less than the PJM billing rate.

We have heard a lot about the PJM billing rate today, and I understand that the Chairperson of the Committee has visited the interconnection office at Valley Forge. I would offer an invitation to anyone else on the Committee who would like to visit our interconnection office to see it in actual operation, to just let us know, and we will make the necessary arrangements.

I think that pretty much covers what I was going to say, except that we have found that every cogenerator and every small power producer thinks his facility is a little bit different than someone else's. To try to structure a uniform contract that would cover every possibility, we think, is impossible. I think what we can do is structure some basic terms of an agreement, but the agreement would still have to be able to fit into, and be adaptable to, the individual cogenerator or small power producer.

With that, I think I would be willing to answer any questions that you might have.

ASSEMBLYMAN ALBOHN: Just one sort of quick one. You mentioned that cogeneration facilities weren't necessarily going to be around individually, each one, for a long period of time because by the time they paid off they would be worn out. Previous speakers-- There seems to be some conflict as to the actual on-line availability of cogeneration facilities. DOE has indicated that, in their opinion, or based on their data,

or whatever, they estimate 5% is the only downtime, whereas someone else -- one of the other utilities, I guess -- indicated that in their experience, 15% is a more likely downtime level. I am just wondering if you have some feeling on that.

MR. WOOD: I think in PJM we are trying to determine just what that number is right now, so that it can be included in our reliability calculations for the interconnection as a whole. I know that some of the cogenerators and small power producers have told me that they have guarantees from suppliers that would guarantee a high availability of the facility. I think that even though you're talking about 5% or 15% availability, some of that is forced outage; it's a random occurrence. It can happen any time. It can happen at the time of your peak; it can happen at the time when you have excess capacity. So I think the probabilities have to be included just the same way as we do with our own units in determining what our reserve requirements and what our reliability levels are. But I think that right now we just don't have enough information on how these facilities are really going to operate.

ASSEMBLYMAN ALBOHN: What is your own downtime experience on a full-fledged generating plant? I have no idea.

MR. WOOD: Well, our numbers are around-- For our fossil plant, I think we're around 10% on an outage rate -- a forced outage rate.

ASSEMBLYMAN ALBOHN: That's within what kind of a time span -- within a month, six months, a year?

MR. WOOD: Say a year -- on an annual basis -- that would be the number. The total, when we include all of the big baseload units and everything, is probably around 17% -- 15% to 17%. But you must remember that the utility's system is operated differently than a cogenerator's. A cogenerator wants to run his unit at a steady load 24 hours a day, seven days a week, 52 weeks a year, where the utility system's generation

will fluctuate over time. We know that the load drops off at night, and as the load starts dropping off at night, we start taking generators -- either reducing the output or taking them off-line. So, the stresses you get on those facilities are somewhat different than what you would get on a cogenerator, which would increase the outage rate on the utility equipment.

See, that is one of the points that has been made about the high cost operation of some of the electric utility equipment. Well, some of it is high cost, and it's high cost by design. Now, you take a gas turbine. It's got a low capital cost -- a relatively low capital cost -- and that was put in with the idea that it would operate few hours a year, and even though it had a high operating cost, the combination of low capital cost and high operating cost made it an attractive addition to an electric utility system because it could be started up very quickly, and when it wasn't operating, it wasn't consuming a lot of fixed cost.

So, even though you do have some necessarily high cost units on your system, they are designed to fit into an optimum mix for an electric utility system.

ASSEMBLYMAN ALBOHN: Just on the basis of being somewhat familiar with plant equipment in general, 5% downtime strikes me as being an extraordinarily low figure. You don't need many shutdowns to run into that kind of a figure. I am surprised that your downtime is as high as 10% to 15%, but perhaps that takes into account the peak load facilities, also, that are--

MR. WOOD: That takes care of all of the units on our system. The other outage would be maintenance time, and I am not sure what the maintenance requirements are for some of these cogenerators. If they decide to do their maintenance on a hot day in July, it is certainly going to affect how we operate and how much capacity could really be given to that facility. If it schedules its maintenance to occur on a day in

the spring where it doesn't have a big affect on the reliability of the system, then it would have a higher value.

ASSEMBLYMAN ALBOHN: I have no further questions.

ASSEMBLYWOMAN OGDEN: I would just like to have you comment, Bill, on the point that was brought up by Mel Heuer in connection with the PJM running rate being part of the cost that should be charged to the cogenerator. His objection is because there are factors in that that have no relationship whatsoever to their ability to produce energy through cogeneration.

MR. WOOD: Well, I think there is a tug of war as far as the running rate goes -- or the billing rate. The cogenerator would like to see it higher. In the 26 years I have been with Public Service, we have tried to keep that as low as we could. One of the ways you keep it low is to have low fuel costs and, also, to buy power in the interconnection at the lowest possible cost.

Now, there are some parts, I would say, that are not under the control, of say, inflation or the normal economy.

ASSEMBLYWOMAN OGDEN: He was talking about fluctuations due to plants being down.

MR. WOOD: And that's the plants-- With large nuclear plants operating, they will go down. But I think that as you look at the PJM expansion program for the next 15 years, there are very few new plants coming in, so I don't think it is going to be affected by a new big plant coming in, like Hope Creek would be this year.

As you go out, I think it is going to be a combination of your fuel charge, plus the availability of units. And as the system gets bigger, even the fact that a 1000-megawatt unit is out of service may not have the effect that it has now because it will be a bigger pool, and you will have a bigger pool of units, so it will not affect what is going to happen.

But I think that the utility system-- What we buy from PJM flows right through to our energy adjustment charges to our customers. We've been, for years, trying to buy at the lowest possible price on the interconnection. That's why we're buying from the West -- the excess coal capacity they have in the West -- to keep that price down that we pass through to the customer.

ASSEMBLYWOMAN OGDEN: Thank you very much. Is there anyone else who we've missed? Let's see, Mr. Betz, is it, from Campbell Soup? Would you like to speak, Mr. Betz?

H A R R Y B E T Z: Yeah, briefly. I think we are all getting a little weary, at least I am.

I'm Harry Betz from the Campbell Soup Company. I am not going to tell you about the virtue of our soup, or compare it with wire. We are very interested in cogeneration. I have been a student of it for 20 years, I guess. We have cogenerated in two of our plants, and uncogenerated by shutting the equipment down because of the high capital cost to replace it, overhaul it, or put in larger capacity equipment to meet our growth. That's basically why we got out of the cogeneration business. That was in 1965.

Okay. In 1980, we got very ambitious about studying cogeneration. When we compare our energy costs in approximately 60-some locations throughout the United States, in the State of New Jersey our power cost is the highest of all of our locations anywhere. Power in California -- average power, average kilowatt hours -- will go two- and three-tenths cents. We're up in the seven in decimals here in New Jersey the way we use power, based on demand, peak, and all that good stuff.

So, it looks like an attractive area to reduce your operating costs. We have the usual flexibility in fuel -- Number 6 fuel oil, natural gas. The gas comes from the same company that we buy our power from, so we have at least a friendly face to discuss that with.

There have been some good statements made regarding the shortage of gas in South Jersey. When we got a little further into the technologies, over and above steam-making power, we found that the jet engine, per se, the Allison engine, with natural gas fuel or diesel oil -- Number 2 fuel oil -- backup, is a good way to come up with five or six megawatts, and the waste-heat side -- the hot side of the engine -- goes into the waste-heat boiler. You can put in secondary burners, put in a superheater, double the horsepower of the engine, and go up to six megawatts. That is a nice fit for our plant in Camden, a very nice fit. It's a nice fit until you look at the \$6 million it would take to do it, and then you look at the fact that the fuel is interruptible.

Now, PSE&G, through the plan, came up with CIG gas. We have made application for it, and it is available to us. But then we have to put in a fuel tank, per se, system to back ourselves up, because we couldn't dependably count on generating power, uninterruptible gas.

Now, our business relies on 90-pound steam; 337-degree steam will do everything we need to do in the soup business, so why should we get in the power business? Well, we don't want to get in the power business. The Camden plant was just given \$37 million by the Board of Directors to, let's say, renovate/update, and stay in Camden. I think that was a pledge by the Board of Directors in all of the conversation over the years. It is the oldest plant we've got. The new high-tech plants are all rural, labor market, and all that good stuff, and lower power everywhere, lower labor everywhere -- you name it. Why? Well, they decided to stay.

We're still looking -- still looking very, very closely -- at cogeneration. We were forced, in this renovation, not just to make the place look prettier, but the Campbell Soup Company is the third largest manufacturer of cans in the world. Now, that is the only plant where we will cease

operating in the manufacturing of cans. We will buy cans from other vendors. The power requirements are pretty high, the labor requirements, and all that good stuff, so we will reduce our labor force, we will no longer manufacture cans, we will reduce our electric power consumption, and we are still looking at an alternative to reducing our cost savings in the electrical generation area.

Now, the decisions in our area there are based on cogeneration and its many facets. The boilers in that plant were installed in 1941 -- coal-fired. They were fired on coal until 1965. At that time, the magic of oil came along, and in 1980 gas came along and, after all, coal is dirty. We are in an urban area, we're downtown, with coal trucks, this, that, and the other thing. So, even though we shut down our turbo-generators at the same time we went off of coal, it cost us more in the long run to do this, but in the long run it was a cleaner, neater, easier operation. Gas and oil come out of a pipe, and coal comes out of truck, that kind of thing, and your maintenance and crewing costs and labor problems are much reduced.

We will not-- Well, we are cogenerating in the states -- the plants where we are coal-burning in our power houses. I just left North Carolina last week. We will cogenerate in a plant down there. We are going to go with a 950-pound pressure boiler, an 850 final steam temperature, and 237-degree superheat. We put in a 12 megawatt, and we will generate our own power. There is absolutely no confusion with Carolina Power and Light, or Duke Power, or Virginia Power. They have published rates on what they will buy power for. The reason is, they are all generating on coal. We're generating on coal. It's a gentlemen's agreement. They give you a sheet of paper that tells you over a period of time what they will pay for the power, if you have surplus.

There just doesn't seem to be any confusion in that area. It is a heavy growth area. If you go down to the Raleigh/Durham area, they not only have a good basketball team, but they have an awful lot of triangle parks. It is kind of like Atlanta; everything is peach tree, you know, but peach tree what? So, that's healthy. In Ohio, we're coal. We've been coal ever since we built the plant -- 29 years ago now. We will generate there.

The cheapest way to manufacture steam -- and I think that anybody in the room will agree with this -- is coal. The second cheapest thing is junk mail, which the Post Office delivers to me. (laughter) Anyway, we have an advantage in those plants because we are already set up with the equipment, the facilities, to handle coal and ash. We do have seven fluid-bed boilers in three locations, so we know their virtue in the pioneering required in fluid-bed technology. The new boiler that we will put in in Ohio will be a circulating bed, fluid-bed boiler with limestone, and all that good stuff. The other seven we have are bubbling beds, but they are much smaller. We will never duplicate those for our requirements.

There are some spin-offs, and I think it is proper to mention this because this is important. Where we sit in Camden, we are on Market Street, right at the foot of it, next to the Delaware River. Our neighbors across the street from us are RCA, now GE/RCA, I guess. We keep asking them. They think they are going to be GE/RCA. They came to us and said, "Hey, we understand that you guys are looking into cogeneration." Well, everybody reads about it. I had the feeling that they hadn't really gone into it too deeply, and sure enough they hadn't because they had just torched up the last of their 950-pound boilers and discarded them, and were sitting on little package boilers for heating and the steam requirements from some of their plating.

So, they asked us if we -- which was nice of them -- would look at their numbers and see if the two of us could make a viable cogen plant. In other words, they need steam; we need steam. They would reduce their cost of power, and so would we, if we put the two together to see what the peaks and the valleys were. The next thing you know, a third party called up. We could start a co-op. I'm not trying to be funny. It's just a fact that there is an interest. There are a lot of people who have not looked into it. They haven't studied it. You can become a student of it, just like you people are students of listening and students of asking questions trying to get to what it is that bothers me. There are so many ways to simultaneously make steam and power, with so many fuels, that that isn't what we are here for.

So, in the long run, I would just like to sum it up and say that Campbell wants to reduce its cost of energy in the State of New Jersey. We will do anything we can on our part to select a system that will help us to do that. We will go into a joint venture with someone. We will even lease a facility if somebody wants to go to that end of it. But, we are going to generate power, maybe not in the next six months, but the plants that we have already got lined up -- the money is there -- have been all coal-fired plants because it makes sense. Here we're between a rock and a hard place because of the gas business. We want to wheel. I mean, I'm not talking about a little plant any more; I'm talking about somewhere-- Well, let's just put it somewhere around 25 to 50 megawatts, because we would like the ability to run a plant, use the steam for us and our neighbors, and take the power and put it into our other facilities -- our general office, our Research Center, our pilot plant, and our new world-wide headquarters we are going to build up in North Jersey, where we have a spice plant, or as we call it, a specialty plant. We would like to wheel it into our Equipment Center out in Moorestown.

So, most of this traffic is in the PSE&G line, but then it goes off into Jersey Central. But, this is what you kind of-- The way I call it, the way we call it out in Ohio when we deal with Toledo Edison, is sell/buy. We just sell them everything we make and we buy back -- we are going to buy back what we want. They can keep the rest of it. We are not worried about what the price is. They will give us a guaranteed price on the power. We haven't signed anything yet, but it looks smooth.

There are many ways, many formulas. I've heard many discussions today. I am not in the power business. I can recognize that the people who are have done a fine job in trying to get this going. I think the things that upset the whole applecart were the nuke plants, were the delay, the environmental people, the permitting. Nobody wanted it in their yard. All you have to have is an accident. The interest rates going-- Everything going berserk. Ten and 12 years to get a plant on-line; costs are so multiple that it's frightening. I was down in Chattanooga, Tennessee, last week -- combustion engineering. Ten, well 15 years ago, they were building a mile-long building on the Chattanooga River for nuke projects. They have 22 nuke units sitting there unsold, some of them completed, some of them not completed. They don't even have-- There isn't a single fossil fuel utility boiler being manufactured in the United States right now, in anybody's boiler house, because we're up for bids for boilers. We're in the boiler business. Canada is doing good. The reason for that is-- Guess what the Canadian dollar is worth compared to our dollar. So, the Canadians are getting the business, which means that the steel business is all screwed up, etc., etc., etc.

So, maybe I have rambled here a bit; maybe I haven't. If I can make a contribution to your meeting or answer any question, I will be more than happy to.

ASSEMBLYWOMAN OGDEN: Thank you. Art, do you have any questions?

ASSEMBLYMAN ALBOHN: I have no questions. It's been an interesting dissertation on the rise and fall of the coal furnace, though, I guess.

MR. BETZ: Yeah, it is interesting. This is my hobby, as I call it. Next week, we'll be in 12 generating facilities out in California, from one end to the other, and probably up into British Columbia and some of those places. Last summer I spent all over the West, going through the plants that are built right on coal mines, which is a glorious way to build a steam-generating and power-generating plant.

ASSEMBLYMAN ALBOHN: Thank you.

ASSEMBLYWOMAN OGDEN: I just have one question; maybe I misunderstood. Did you say that you plan to sell directly to the utilities all the energy you produce, and then to buy back?

MR. BETZ: That's the discussion we are in with Toledo Edison Company in Toledo, Ohio, right now.

ASSEMBLYWOMAN OGDEN: Oh, not here in New Jersey?

MR. BETZ: No, not in New Jersey. We have a plant in Napoleon, Ohio, which is 45 miles from Toledo. What we intend to do there, and what they seem to be receptive to, is all of the power that we would generate-- See, we put in a back pressure machine. We let the steam requirements of the plant kick out the power that the turbine generator can generate. We thrive on steam, not electricity, even though the two loads parallel. We put in a combined cycle machine, and we will be able to generate our high demand power, which will curtail our costs, certainly, because of the savings. The rest of the time, the power will go right into the utility, and they will buy and sell it back to us. We, again, have multiple locations out there, so again it is a wheeling type thing.

ASSEMBLYMAN ALBOHN: I have just one quick question. You mentioned the amicable relationships you have in the

Carolinas and Georgia and what not with the power companies. What are the state agencies that are involved down there? Do they have the equivalent of a BPU, a DOE, a Public Advocate -- any at all, or--

MR. BETZ: I have yet to meet the first Public Advocate, to be very, very honest with you.

ASSEMBLYMAN ALBOHN: See, I'm wondering what the trouble is in New Jersey. Maybe if we got rid of two out of three of those agencies, we could save the taxpayers some money and eliminate some problems.

MR. BETZ: Probably all of the above, yes. But, no, they have departments. They are very progressive in their environmental groups and their Departments of Energy. Their environmental groups are the guidance groups. Regardless of how you are going-- If you are going to put in a boiler, or make steam, or put in a trash burner, or whatever you are going to do, you have to go through that group, obviously, to get a permit. They take a look at the saturation of the admissions in the area. They are a tremendous group to work with in Raleigh/Durham. If you are in the area of Fayetteville, North Carolina, for example, that is the office you will deal with because you start out with the state. It is very fluid; it rolls together. The DOE is advised of what you are going to do. You are permitted. You know, Campbell Soup probably has as many engineers as major consulting engineering firms have. There are 200 of us milling around. So, we do our homework. We have our own environmental engineering group, which deals with any state -- any state -- and I go right with those people, right to the state. We have had excellent results with the state. In fact, I haven't had any bad experiences because we do our homework. We go first for preliminary meetings and find out what is required. We put our data together. We obtain the Dames and Moores and the consulting engineers to give us the added information we need. When we roll this

thing, we are usually 100% with our information. And we keep rolling it up and we just keep going on it.

ASSEMBLYMAN ALBOHN: Thank you very much.

MR. BETZ: Okay. Thank you.

ASSEMBLYWOMAN OGDEN: Are there any last questions you have to ask Bill Potter, since he went off and there have been many comments since then?

ASSEMBLYMAN ALBOHN: I guess I have sent a few comments his way here and there along the line, but-- I was just wondering, Bill, you started off with all the problems you have with the utilities in general, and the rest of the testimony the rest of the day was that the utilities have no problems. In the good book that you wrote, why, they're readable and they conspire, and you have trouble negotiating with them, and yet the testimony here today has been, "We don't have any trouble with the utilities. We do our work; we work with them."

It's all right, I just-- You know, it's too totally-- You must have sensed that, too. Here, we're outsiders; we don't know the inside of the business. But, we're getting two totally different pictures from--

MR. POTTER: The utilities, I think, will say there is no problem because it is working to their benefit. They are able to get the cogeneration they want and stifle that which they don't want. When I say the utilities, I use that term generally, but there are significant differences between the companies. Jersey Central is, by far, the most pro-cogeneration, the most cooperative, the most innovative. PSE&G is, also by far, the least pro-cogeneration, the least cooperative, the least eager to see cogeneration enter their territory, unless, of course, they are selling the power some other place.

ASSEMBLYMAN ALBOHN: Yet didn't they indicate that

they have some -- I don't know -- 50, 80, 100 megawatts of cogeneration on the boards, or under discussion one way or the other?

MR. POTTER: That's still less than a 10th or 20th of what outside experts say is the potential for the area, and by potential I mean economic potential. Mr. Albohn, perhaps these statistics might be helpful. Last year the peak demand for electricity in New Jersey was around 10,000 megawatts. That's about 10 Hope Creeks in equivalent. Something like 9,800 megawatts of that were generated by power plants that cost more to operate than what the utilities are offering to pay for cogenerated power at off-peak, and some 6,000 megawatts cost more to operate than what the utilities are offering to the cogenerators for on-peak.

So in other words, somewhere between 60% and 98% of the power that they supply through their own facilities, cost more than what they are willing to pay in buy-back rates for cogeneration. So when they say that the buy-back rates we have suggested here are excessive, I would take that with a substantial grain of salt. What we want to see is an open market managed by the BPU, whereby cogeneration and utility facilities are given an equal opportunity to serve consumers. I see the trend moving in that direction around the country. Even Commissioner Barbour of the BPU has written in a recent article that there is a revolution in regulation taking place, so they know it is happening. The question is, how quickly will it happen, and do we manage the transition smoothly?

I really think that the most important thing to come out of this hearing will be the need for a hard look at these matters by the agency which, by law, is supposed to do this -- the BPU. All we have done is try to analyze the situation and set forth a framework for them to act. By law, they are the rate-making authority. But as I understand what Mr. Gable is saying, essentially we are doing everything that we already

agree with. I don't think that is good enough. I know it does not involve the BPU in these problems.

ASSEMBLYMAN ALBOHN: You speak of costs of generation being less than what the -- higher, I guess, than what the utility is willing to pay.

MR. POTTER: Yes, sir.

ASSEMBLYMAN ALBOHN: Well, by cost of generation, do you also include cost of distribution?

MR. POTTER: No.

ASSEMBLYMAN ALBOHN: Well, you should. After all, that whole infrastructure of transmission line, switch gear, transformers, and what not, didn't just grow.

MR. POTTER: Oh, sure. Well, if you had a system where cogenerators were given equal access, they should be charged for the cost of using the transmission system; no question about it. I think there is still a national monopoly in the, you know, the transmission of electricity and the distribution system. Where there isn't the monopoly -- or national monopoly -- is in generating the electricity because it can be done by almost anyone and in so many diverse ways. I agree, there should be a charge for--

ASSEMBLYMAN ALBOHN: Once you add-- You know, on the one hand you're talking about an isolated generating facility -- the cogeneration facility -- where all they have is the cost of that and a couple of switches or something to feed to the outside world, and on the other hand, you're talking about a generating plant that may be 50 miles away and has a huge network of things. It seems to me that you cannot use the base power costs or whatever -- the avoided power costs or whatever -- without tying in all the maintenance and operation of the rest of the system.

Now I know they talk about -- in one of your papers -- it may be more economical if the user of the power happens to be closer to the cogeneration facility, thereby avoiding the

line losses between the main plant and the user. But, you know, that sort of averages out, it seems to me, over the whole picture. There should be some adjustment for that; I don't know, some recognition of that.

MR. POTTER: Well, I think I agree with your principle, but as far as the application, I think you've got it in reverse because if you charge, say, the cost to transport power from a distant utility generating facility to the load, that would up their costs even higher than what they currently are, whereas a cogenerator tends to be right there in the middle of Camden, in the middle of Trenton, in the middle of Newark, so the costs to ship that to users are very, very low.

I think that if you throw those costs in, that would tip the scale even more toward cogeneration. But, as I was sitting back there -- if I might digress for just a moment -- I was thinking what is it, really, that this Committee might best consider doing? I think the most important thing is just to stimulate some reconsideration of our assumptions about cogeneration and utility regulation, and, if possible -- well, I know it's possible -- persuade the BPU to take a hard look at these things. You could, for example, pass legislation. Kansas did that. They passed legislation that requires a value of service met to apply to all utility facilities, and when the Wolf Creek Nuclear Plant was being put at a rate base, they knocked, I think, about a billion and a half off the cost, that otherwise would have gone to ratepayers.

Michigan is considering a bill that would require electricity to be priced on the basis of what a willing seller would sell it -- the rate for a willing seller to sell it to a willing buyer. In other words, the marketplace that we are talking about. Those sorts of bills are pending so they will be enacted around the country, but I think, just initially, using perhaps a sense of the Legislature, a resolution, even a letter from the Committee, just to ask the BPU to follow

through and consider, in some open forum, the issues that you yourselves are debating. I don't think it is fair to ask you to resolve every difference that we have on this. Obviously, a lot of that would take expert witnesses and an agency with expertise.

What I see is, the BPU is simply not taking a hard look at it. Even Mr. Parent from Atlantic Electric was saying that they have recently changed their own interpretation of their words in their 1981 order. So something is happening there, but it is not happening in an open, public forum, which is the way that the Public Utilities laws are set up to operate.

ASSEMBLYMAN ALBOHN: I'm sort of surprised that you say there is not enough public discussion because one of the things-- You know, as you say, originally the BPU was the watchdog over the utilities.

MR. POTTER: Yes.

ASSEMBLYMAN ALBOHN: And then, I don't remember which came first, the Public Advocate or the DOE, but then you began to watch the BPU watch the utilities. Then we had the other one created, and we had the watchbird watching the watchbird watching the watchbird. I'm not so sure that the Legislature is the group to resolve that, because you can be as idealistic as you want, but utilities don't vote. And what the Legislature does will be whatever is the most popular. I'm not so sure that for the good of the nation, or the good of the State, or even the good of the individual, that that is the best route to follow. You know, it would be very easy to pass a bill that would declare that everybody over 65 gets free electricity or something like that, but that would just be passing a burden on to somebody else.

That's what I mean. Popular issues are handled in the Legislature in that fashion. And if you want to put anything that has any severe onus on the utilities, it would be easy to get it through the Legislature, I'm sorry to say. That's why

I'm not so sure what the route of the Legislature is, what route it is that we should take. Sure, a letter to the BPU, that's fine. I'm sure Assemblywoman Ogden would be pleased to write such a letter, and we would probably get a response back that sort of copies the thing that they gave us today, saying, "Yep, we're doing all these things. We agree with you, and everything is hunky-dory."

MR. POTTER: Well, perhaps it is the lateness of the hour, or I'm more tongue-tied than I thought, but what we need-- There has been plenty of discussion, and this is very helpful discussion, but it is not taking place in a forum that will lead to a decision by those with the authority to act on it, namely, the BPU. They, by law, are the rate-making authority in New Jersey. I don't know how else to interpret their inaction, except as turning a deaf ear and blind eye to the master plan. By law, that is supposed to have certain legal consequences. One such consequence is that we create certain interim implementation measures as the act requires.

All we said is that the BPU has to act on these things; they will have the final decision. But they are not acting on them. I think that should be a matter of concern, just by way of legislative oversight.

ASSEMBLYMAN ALBOHN: They're not acting?

MR. POTTER: Excuse me?

ASSEMBLYMAN ALBOHN: They're not acting, or they're not giving you the answer you want?

MR. POTTER: They're not giving any answer. What we hear from Mr. Gable is essentially, "We're doing everything, except what we disagree with." Well, there are no hearings, they have made no decisions, there have been no rulings, there have been no dockets opened. Whatever is happening is a great mystery to society. don't think that is proper under the law, and I know it is in contravention of the master plan.

Presumably, the DOE can ask the Attorney General to take enforcement action against the BPU. All of that is possible, but I think the far less contentious thing is simply for the BPU to take some action on this. They said themselves, in 1981, "When there is more information available, we will hold more hearings." That was five years ago. Isn't it time to do something?

They'll be in front of you, or someone, for their budget. Wouldn't that be an appropriate time to say, "Do you need more resources to act on this?"

ASSEMBLYMAN ALBOHN: I don't know that any of us here are on the Appropriations Committee--

MR. POTTER: Well, I don't either.

ASSEMBLYMAN ALBOHN: --so we're not--

MR. POTTER: But, the Legislature might.

ASSEMBLYMAN ALBOHN: We're in charge of doling out advice, not money, and the advice isn't worth any more than the little or no money we have.

MR. POTTER: But you have certainly heard what I think is a plea from the industries here. The highest average electricity rates in the nation. It's front-page news that we have the highest liability in automobile insurance rates in the nation.

ASSEMBLYMAN ALBOHN: You know, they're totally different things. Each has its own cause and effect, and I think--

MR. POTTER: Absolutely, but certainly the Legislature is involving itself very intimately in auto insurance. I am merely suggesting that the minimum action might be something to stimulate some response from the BPU, I mean, other than just saying, "We're doing it to the extent that we agree with it," and then leaving. I don't think that is sufficient.

ASSEMBLYMAN ALBOHN: I don't know. Sometimes we are the victims of our own misdeeds--

MR. POTTER: Quite often.

ASSEMBLYMAN ALBOHN: --and as I indicated earlier in the day, you know, there seems to be a movement on the part of a cult of some sort in this country to do away with nuclear energy. They make it as difficult as possible for any nuclear plant to be built or to even operate. That is a continuing fight. Those fights cost money. As far as I am concerned, some of the precautions that are built in -- and the reason Shoreham still isn't operating -- are not because of rate structures or anything like that; they are because of ridiculous political pressures. I think they have increased the cost of that plant to numbers far beyond what anyone ever dreamed they would be. If it ever does go on-line, the rates are going to go up again, and everybody is going to scream some more against the utility.

You know, I think we probably have the same sort of situation down here. Every time one of the nuclear energy plants hiccups, why, there is a public uproar and front-page news. I think, you know, we have to get away from that kind of thinking. To me, the Department of Energy, perhaps, could help in that, too, by educating people a little bit so that we don't have this fantastic environmental uproar every time anything happens and, you know, then you start having an evacuation plan, maybe, for southern New Jersey, like you are going to have for Long Island. You know, we're only driving costs up. I see no effort at all to bring those down.

MR. POTTER: Well, on nuclear energy, we probably shouldn't debate that here and now, but I would say that New Jersey is getting its own Shoreham in Hope Creek. The costs of that plant are going up all the time, and there is no organized opposition against it. It's not like Governor Cuomo and the County Executive of Nassau, I think, trying to stop Shoreham from operating. Hope Creek has had basically green lights and yellow lights all the way, and still the costs are going up.

So, I think what is driving the cost factors is something other than any anti-nuclear movement, because we really have no organized anti-nuclear movement in New Jersey, not of any consequence. So, I quite disagree with you on that.

ASSEMBLYMAN ALBOHN: Well, you don't get the same mail I do.

MR. POTTER: No, I probably don't.

ASSEMBLYMAN ALBOHN: We each get our own brand of hate mail.

ASSEMBLYWOMAN OGDEN: Art, I think just one thing as we close. We shouldn't leave anyone with a sense that-- I guess maybe from what you're saying today, Art, maybe you aren't quite where I am, but in terms of being a proponent of cogeneration, it certainly is not anything that is against utilities. It's really just seeking another way by which to help industry and ratepayers, like Hoffmann-La Roche or Campbell Soup -- in terms of getting them to stay here, of getting them to enlarge their plants, or maybe bringing some other industries here, providing jobs, providing more diversification, and providing more predictable -- in many cases -- sources of power. So, the purpose of this hearing, as I say, was not to be against any utilities or to do anything in terms of harming them, but really just in terms of exploring what is the possibility of us, as legislators, doing something. Maybe we don't need to do anything. Maybe just a letter, as you were saying, Bill, would be the thing to do. I don't know; we'll have to think about that. Just really looking at the whole picture in terms of energy costs and availability for the State of New Jersey, and what we can do to improve it, has been the purpose of the hearing.

I thank you all for coming.

(HEARING CONCLUDED)

APPENDIX



Thomas H. Kean
Governor

NEW JERSEY DEPARTMENT OF ENERGY
101 Commerce Street
Newark, New Jersey 07102

Leonard S. Coleman, Jr.
Commissioner

MEMORANDUM

TO: The Honorable Maureen Ogden, Assemblywoman
Chairwoman, the Assembly Energy & Environment Committee

FROM: R. William Potter, Esq., Chief Counsel, the New Jersey
Department of Energy

DATE: March 31, 1986

RE: The State Energy Master Plan and Cogeneration: How to
save money, save energy, promote jobs and protect the
environment of New Jersey

RWP

I. Background: The Energy Master Plan

A. What is the Master Plan?: On December 11, 1985, the Department of Energy adopted a 10-year energy master plan which will govern State policy in all energy matters for the next three years or until a new master plan is adopted. The plan encompasses "the production, distribution, consumption and conservation of energy in this State...The plan shall include long-term objectives but shall provide for the interim implementation of measures consistent with said objectives." N.J.S.A. 52: 27F-14a.

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New Jersey Is An Equal Opportunity Employer

Energy Cost partial -
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1. What are the long-term objectives of the Master Plan?

a. promote the economy, energy security and environment of New Jersey;

b. create a "level playing field" in which all energy sources will compete fairly and openly for consumer approval

(1) substitute the marketplace for the judgments of regulators in setting energy prices and sources;

(2) promote "least cost energy planning" by the State's electric and natural gas utilities;

(3) promote utility investments in "saved energy" whenever it cost less than expenditures in power production; and

(4) promote cogeneration and other forms of independent power production as a source of competition and cooperation with electric utilities.

2. What are the interim objectives of the Master Plan?

These are almost entirely procedural. -

(to be reviewed 10/1/80)

*about ref to access cogeneration plants - don't need extra capacity and
value of service - but it's economic value of output - that
what we the input - 2 -
A Major divergence in long term rate. -*

10% → capital costs → [1981] - net value
ultimately would be determined in hearings ✓
feel less probable utility from
owning more than 15000 of cogeneration.

a. The BPU is directed to hold a series of hearings on issues critical to the future of cogeneration and power production in New Jersey. These include hearings on the following:

1. Setting new "buy-back" rates for utility purchases of electricity from cogenerators; hearings to begin by March 11, 1986 and conclude by September 11, 1986 (p. 109 of the Master Plan);

2. Setting interconnection requirements; BPU hearings within 30 days of any complaint filed by a cogenerator (p. 110);

3. Setting "uniform, statewide rates for transmission services" for cogenerators (i.e. "wheeling") (p. 110-111);

4. The BPU to require utilities by January 11, 1986 to submit proposed "standard offer contracts" between the utilities and cogenerators and to rule on the adequacy of these contracts, if cogenerators object, within 6 months of the protest (p. 111);

5. The BPU to require natural gas utilities to submit plans for supplying potential cogenerators with the natural gas they need to produce their own power (P. 112);

6. The DEP to set up an expedited process for resolving all permit problems associated with cogenerators (p. 112);

7. The BPU to rule on plans submitted by utilities for "achieving a realistic market for power competition between and among utility facilities and non-utility facilities," including the following elements: "The plan will describe methods for auctioning rights to sell power to the utility on a non-discriminatory basis. Utility facilities and [cogenerators] will have equal opportunity to compete for the opportunity to generate and market electricity in order to further the goals of a least-cost energy strategy for ratepayers." (p. 113);

8. The BPU to set up "an abbreviated process for the hearing of complaints, protests or petitions [regarding allegations of] bad faith activities" by utilities when negotiating contracts with cogenerators; BPU also to maintain a "current list of bad faith practices" which hinder contracting (p. 114);

9. The BPU to revise rates for "small power producers" so that they may sell their full output to the utility and then purchase from the company their own energy needs (p.115).

B. Implementation: How is the Plan put into action? Every department or agency of State government must comply with the master plan to the fullest possible extent: "It [is] the intention of the Legislature that the actions, decisions, determinations and rulings of the State Government with respect to energy shall to the maximum extent practicable and feasible conform with the energy master plan adopted by the department pursuant to [the Act]." (emphasis added) N.J.S.A. 52: 27F-15a.

1. Definition of conforming "to the maximum extent practicable and feasible:" See discussion in the Overview to the master plan --

"[Upon adoption] the plan has the force and effect of law to the extent provided in the legislation. Principally, the plan operates through other 'State instrumentalities' such as regulatory agencies...The plan guides these offices in the exercise of their duties to the extent that they affect energy or fall with the framework of this plan...

"To summarize, all other State agencies that regulate energy industries or issues must adhere to the provisions,

reasoning and policies of this Master Plan even as they discharge their independent statutory functions. Only where some substantial countervailing purpose, engrained in their legislation, prevents the agency from doing so on a case-by-case basis may the agency digress from the plan. The agency has the duty to conform with the plan except that if it finds that it would not be 'practicable and feasible' to do so, it must justify its actions through a convincing description of the reasons, evidence and findings that cause it to deviate."

II. Cogeneration: What is it and why is it so important to New Jersey?

A. Definition: Generally, it means equipment that will enable someone to use the same energy source twice -- once to produce heat (usually steam) and second to produce electricity. This electricity can then be used "on-site" in lieu of buying electricity from the utility or it can be sold to the utility. See, generally, Chapter 3 of the Master Plan, Recoverable Energy Sources: Cogeneration (p. 91).

B. The benefits of cogeneration:

1. Saving industries: Industries which cannot afford to buy electricity from utilities will survive in New Jersey -- thereby saving jobs, the tax base of local communities, and generally promoting a healthy economy.

2. Promoting economic growth: New Jersey will be able to compete more effectively with other states in promoting new businesses and job growth in the State. Cogeneration will help to compensate for the state's high electricity rates -- note, PSE&G's petition to increase base rates by \$910 million or 28% now pending before the BPU.

3. Promoting job-growth: Investments in cogeneration are more labor intensive than utility power plants: every 500 megawatts of cogeneration creates 17,000 to 20,000 jobs, compared to a small fraction of this for nuclear power plants.

4. Protecting air quality: Cogenerators will tend to burn natural gas (clean) and can replace the widespread use of coal-burning power plants in Pennsylvania (36 to 50% of total electricity supplied to the state);

4. More secure electricity system: Cogenerators have a systemwide 95% reliability factor, compared for 50-60% for a nuclear power plant. Cogenerators are close to "system load"; so less chance of "black-outs" due to interruptions in long-distance transmission systems.

5. Lower utility rates for everyone: Cogeneration will substitute for utility construction of costly new power plants, purchases of electricity from other utilities and the use of uneconomic facilities. Cogeneration creates competition for electric utilities; ends the "natural monopoly" myth of electricity and opens the way for a "level playing field" in utility regulation and electric power pricing.

C. Using solid waste productively: The master plan recognizes that solid waste can be a useful fuel for cogeneration. Some industries have used such waste products as sawdust, woodchips, corn husks, almond shells, and others are investigating the burning of coal "culm" and even auto-tires in a clean-burning pyrolysis chamber.

D. How much cogeneration can New Jersey produce? The statewide potential is estimated at between 1,400 and 4,000 megawatts at industrial facilities alone. Vast commercial potential not even estimated -- includes restaurants, hotels, casinos, shopping centers, offices and apartment houses. Vast institutional potential -- hospitals, schools, government buildings, especially "residential facilities" (e.g., prisons).

III. Arguments against cogeneration and responses

A. The PSE&G argument on "excess capacity": "Cogeneration is great in theory but we don't need any more power from other sources before the end of the century because we already have more than enough. And with Hope Creek coming 'on-line' we will have even more power."

1. There is no such thing as excess capacity so long as the new capacity lowers rates. Cogeneration can and should replace utility use of power plants that are more expensive to consumers than the cogenerated electricity.

2. Utility facilities which are too expensive by comparison to cogeneration should not be charged to ratepayers. They should be removed from the "rate base" as no longer "used and useful" due to their excessive costs.

3. Excess capacity which is excessively costly should not be charged to ratepayers; cogeneration can "compete" with this capacity and thereby help to lower everyone's electricity bills.

4. New Jersey utilities maintain a vast reserve of excess capacity which is excessively costly to consumers. Of the nearly 10,000 megawatts in peak demand recorded in New Jersey last year,

9,800 mws cost more to operate than what the utilities offer in "buy-back rates" to cogenerators at off-peak periods; and 6,000 mws cost more to operate than the buy-back rates offered at on-peak periods to cogenerators.

5. Hope Creek is likely to cost \$4.9 billion before it is put into commercial operation sometime in 1987. This leads to a cost per kilowatthour of 25¢ or more depending upon its capacity factor. This is more than twice as high as the existing average electricity rates. By way of comparison, the proposed buy-back rates in the Master Plan are about 8¢ per kwh for cogeneration -- which the utilities claim is "excessive."

6. Finally, Jersey Central Power & Light Co. and Atlantic Electric do not have excess capacity. Cogeneration can and should replace their currently high usage of out-of-state power, which may not be as dependable or environmentally sound as cogeneration.

B. The "obligation to serve" argument: "Cogeneration is inherently undependable because the producers have no statutory 'obligation to serve' that utilities do. Therefore, it is worth it for consumers to pay a little bit more for this added security."

1. What obligation to serve? The electric utilities are not required to provide any service for which they are not fully compensated.

2. Any assumed 'obligation' can be fully discharged by effective contractual arrangements with cogenerators and other sources of power.

3. Since cogeneration is inherently more efficient and reliable, then the overall system will be less susceptible to "outages" or "breakdowns."

4. Nuclear facilities are known for their unpredictable performance: over a year ago at the peak air-conditioning period, every single nuclear unit serving New Jersey was "down."

5. Adequate buy-back rates for cogenerated electricity will entice a continuing stream of new cogenerators into the market so that there will be a constant supply of replacement sources for any which go out of business.

6. More importantly, cogeneration will help to prevent many industries from going out of business.

C. The jurisdiction argument: "Any changes on the order of those found in the master plan require legislation."

1. The BPU has more than ample authority to adopt the changes found in the master plan under its broad authority to set "just and reasonable rates."

2. Some states are following this course already: Note, e.g., California, Texas, Mass., Maine, while others are proceeding through legislation, such as Kansas and Michigan.



State of New Jersey

DEPARTMENT OF ENERGY
BOARD OF PUBLIC UTILITIES
1100 RAYMOND BLVD.
NEWARK, NEW JERSEY 07102

LEGAL
10/14/81

IN THE MATTER OF THE CONSIDER-)
ATION AND DETERMINATION OF)
COGENERATION AND SMALL POWER)
PRODUCTION STANDARDS PURSUANT)
TO THE PUBLIC UTILITY REGULA-)
TORY POLICIES ACT OF 1978)

DECISION AND ORDER
Docket No. 8010-687

Service List Attached:

BY THE BOARD:

Section 210 (16 U.S.C.A. 824 a-3) of Title II of the Public Utility Regulatory Policies Act of 1978 (PURPA) (Public Law 95-617) is legislation designed to encourage cogeneration and small alternative power production.

On October 20, 1980, the Board of Public Utilities (Board) initiated a generic proceeding pursuant to Section 210. As set out in Order No. 69 of the Federal Energy Regulatory Commission (FERC), issued February 19, 1980, the Board was to establish standard rates for the purchase of power from a qualifying facility (QF) to an electric utility for those facilities with a designed capacity of 100 kilowatts (KW) or less. Section 292.304(c)(1). The Board was not, however, precluded from establishing standard rates for those facilities with a designed capacity of greater than 100 KW. Section 292.304 (c)(2). It was recommended that these standard rates be based on avoided costs. Pursuant to Section 292.302 (b) of Order No. 69, the Board ordered all electric utilities in the State of New Jersey to submit, on or before November 1, 1980, the avoided cost data as required by PURPA. A publicly noticed hearing before the Commissioners was held on Friday, October 31, 1980 at the offices of the Board to set up the mechanism for consideration of this Docket. Thereafter the electric utilities of the State of New Jersey were ordered to provide an initial compliance plan addressing the following issues:

1. Methodology for calculating avoided costs for buyback rates from QFs.
2. Standard tariff for purchases from QF facilities.
3. The policy for purchase rate from facilities of greater than 100 KW capacity.
4. Tariffs for sales of electricity to QFs.
5. Costs and charges for interconnection.
6. Interconnection safety.
7. Instances when the utility may refuse to purchase from QF.
8. Special consideration for residential alternative energy.

Payment for capacity of the QF shall be made on the basis of the average capacity provided by the QF during the utility's on-peak period.

The Board is cognizant that JCP&L has a technical difficulty in metering the QF energy on an hour by hour basis. The Board therefore will allow JCP&L to meter these customers on a time of day basis, until such time as the technical difficulties can be overcome.

QFs Capacity Less than 100 kilowatts

The Board believes that the avoided costs of QF sales of capacity of less than 100 KWs can best be tracked on a time of day basis. However, as pointed out by Atlantic City Electric Company and windmill intervenors, time of day pricing for energy may act as a deterrent to the development of alternative energy on the electric companies' systems. Moreover, ACE has noted that its experience with such meters is limited. It is therefore reasonable to allow this company to develop a stable rate that is a non-time of day rate. A 18-month interim period will be initially allowed for ACE to be followed by review until such time as technical difficulties in implementing time of day rates can be overcome. Should the PJM billing rate increase in magnitude greater than this stable rate, the company should reimburse the QF owner for the difference.

3. The Policy for Purchase Rates from QFs of Capacity Greater than One Megawatt

QFs of capacity greater than one megawatt shall negotiate with the electric utilities of the State of New Jersey to determine an appropriate payment for their delivered energy and capacity. The Board notes that such negotiations are subject to Board review and approval. Moreover, should the electric utility and the QF not be able to reach a satisfactory contract, the Board and its Staff will take part in such negotiations at the request of either party. The Board fully encourages the establishment of long term contracts. Such contracts will more likely satisfy the financing needs of the QF investor. Unless otherwise agreed to by the parties, those energy and capacity payments contracted for by the QF and the electric utility shall not be modified by subsequent levels of payments that may be approved by this Board.

4. Tariffs for Sales of Electricity to Qualifying Facilities

Section 292.305(a)(1)(ii) of FERC Order 69 states that the tariffs for the sale of electricity to qualifying facilities must not discriminate against any qualifying facility in comparison to rates for sales to "other customers with similar load or other cost related characteristics". The Board wants to insure that sales of electricity to QFs, whether for a planned or unplanned purchase, do not present an economic deterrent to the development of cogeneration and alternative power production in the State.

The Board's consideration in this regard falls into three areas: 1) electricity sale on a planned basis; 2) sales of stand-by service from the electric utility to the QF; and 3) electricity sales on an unplanned or forced outage basis. A QF will need to undertake certain maintenance of its generating facility on a periodic basis. In this situation the QF will purchase maintenance power from the electric utility. If this maintenance is planned in accordance with the electric utilities own system peak constraints, it is possible that the capacity purchased from the utilities will be of little or no value. Accordingly, the Board believes that when a qualifying facility schedules maintenance with electric utility notification and approval, that company shall provide maintenance power for which there will be no demand charge.

6. Interconnection Safety

On [REDACTED] 1981, the Division of Engineering of the Board of Public Utilities submitted a proposal regarding interconnection, protection and safety requirements for customer-owned generating devices and systems. The Board accepts such provisions in that they will protect the integrity of the utility and of the small power producer or cogenerator.

The following requirements and standards for connection of customer-owned generating facilities to the utility system shall be met to assure the integrity and safe operation of the utility system with no deterioration to the quality and reliability of service to other customers. The operation of the QF should be done in a competent manner. The ability of the operating personnel should be such that the utility system as a whole is protected.

1. All small power producers or cogenerators shall make application to the utility for approval to interconnect their facilities with the utility system.
2. The utility may require the following as part of the application:
 - A. Plans and specifications of the proposed installation.
 - B. Single line diagram and details of the proposed protection schemes.
 - C. Instruction manuals for all protective components.
 - D. Component specification and internal wiring diagrams of protective components if not provided in instruction manuals.
 - E. Generator data required to analyze fault contributions and load current flows including, but not limited to, equivalent impedances and time constants.
 - F. All protective equipments ratings if not provided in instruction manuals.
3. The utility shall within thirty (30) days from the receipt of all required data from the applicant either approve or reject in writing the application for connection to the utility system. Rejection of an application shall state with specificity the reasons for such rejection. Connection to the utility system will be permitted only upon obtaining the formal approval of the utility. The utility may require the execution of a formal application form and/or interconnection agreement by the customer.
4. The installation of the customer's facilities must be in compliance with the requirements of the National Electrical Code and all applicable local, state and federal codes or regulations. The installation shall be done in a workmanlike manner, and shall meet or exceed industry acceptance standards of good practice. The provisions of the National Electrical Safety Code and the standards of the Institute of Electrical and Electronics Engineers, National Electrical Manufacturers Association and the American National Standards Institute shall be observed to the extent that they are applicable. Prior to connection, the utility must be provided with evidence of the satisfactory electrical inspection by an authorized inspection agency.
5. The customer's facility shall have the following characteristics:
 - A. Output voltage shall be compatible and consistent with the utility system to which the customer's facility is to be connected.

9. The customer is solely responsible for providing adequate protection for the equipment located on the customer's side of the interconnection system. This protection shall include, but not be limited to, negative phase sequence voltage on three-phase systems.
 10. The customer shall provide a utility controlled disconnecting device on the utility side of the interconnection system. The utility may require that this device accept a utility provided padlock. The utility may also require manual operation of the device when required.
 11. The customer shall agree to grant access to the utility's authorized representative during any reasonable hours to install, inspect and maintain the utility's metering equipment.
 12. The customer must satisfy, and shall be subject to, all terms and conditions of the utility's tariff for electric service.
 13. No wind generator, tower structure or device shall be installed at a location where, in the event of failure, it can fall in such a manner as to contact, land upon, or interfere with any utility lines or equipment.
 14. The customer shall maintain the generator and its associated structures, wiring and devices in a safe and proper operating condition so that the installation continues to meet all the requirements contained herein.
 15. By installation and connection of a generator and/or appurtenant facilities, devices and equipment with the utility system, the customer agrees to indemnify and hold the utility harmless from any and all liability or claim therefore for damage to property, including property of the utility and injury or death to persons resulting from or caused by the presence, operation, maintenance or removal of such customer's installation.
 16. When and if any controversy arises as to the interpretation and application of these requirements and standards, the matter may be referred to the Board for determination.
- 7) Instances When the Utility May Refuse to Purchase from a QF

A utility may refuse to purchase from a QF if the facility does not comply with the terms and conditions of service. The utilities may refuse to interconnect with a QF which does not meet the specified safety criteria.

In addition, refusal to purchase may occur if:

- 1) The utility is unable to back down its own generation sufficiently to accept the energy from a QF without jeopardizing the integrity of the utility (or PJM) system. The utility will give up to 90 days notice of the potential for such refusal to purchase.
- 2) Distribution or transmission circuits are loaded to capacity and further energy would cause an overload. Such refusal to purchase may occur on an instantaneous basis.
- 3) An emergency occurs on that part of the utility system interconnected with the QF such that there would be no means of delivering the energy to the remainder of the utility system. Such refusal to purchase may occur on an instantaneous basis.

The utility will file a notice with the Board in all cases of refusal to purchase from or interconnect with a QF.

5. A Public Hearing proceeding be established to consider the issue of wheeling within the State of New Jersey

DATED: October 1, 1977
(SEAL)

BOARD OF PUBLIC UTILITIES
BY: (SIGNED)

GEORGE H. BARBOUR
PRESIDENT

EDWARD H. HYNES
COMMISSIONER

ATTEST:
(SIGNED)

BARBARA A. CURRAN
COMMISSIONER

GERALD A. CALABRESE
SECRETARY

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State of New Jersey

BOARD OF PUBLIC UTILITIES

LEGAL

1100 RAYMOND BLVD.
NEWARK, NEW JERSEY 07102

IN THE MATTER OF THE CONSIDERATION)
AND DETERMINATION OF COGENERATION)
AND SMALL POWER PRODUCTION)
STANDARDS PURSUANT TO THE PUBLIC)
UTILITY REGULATORY POLICIES)
ACT OF 1978)

ORDER OF CLARIFICATION

DOCKET NO. 8010-687

(Service List Attached)

BY THE BOARD:

On October 14, 1983, the Board issued its Decision and Order in the above matter with regard to its consideration of Section 210 (16 U.S.C.A. 824 a-3) of Title II of the Public Utility Regulatory Policies Act of 1978 (PURPA). The purpose of said legislation is to encourage cogeneration and small alternative power production.

As a result of our consideration of PURPA Section 210 and the pertinent orders issued by the Federal Energy Regulatory Commission (FERC), the Board, in its prior Decision and Order, set out the methodology by which to calculate avoided energy and capacity costs for buy-back rates. In setting the value of avoided energy costs at a figure of 10% above the PJM billing rate, the Board determined that such a rate "will help to adequately promote cogeneration and small power production in New Jersey and, at the same time, will yield long term benefits to utility ratepayers." (Decision and Order, Docket No. 8010-687, October 14, 1981, p.3).

The value of avoided capacity costs was set at the PJM capacity deficiency charge for Atlantic City Electric Company and Public Service Electric and Gas Company and at the levelized combustion turbine cost for Jersey Central Power and Light Company.

The Board further ordered that these avoided cost methodologies were to be incorporated within the terms of a standard tariff which would cover the purchase of energy and capacity from a qualifying facility (QF) to an electric utility for those facilities with a designed capacity of one megawatt or less. QFs of capacity greater than one megawatt were to negotiate with the electric utilities in order to determine an appropriate payment for their delivered energy and capacity.

In order that interested parties might be given the opportunity to present testimony as to the applicability of these avoided cost methodologies to QFs of capacity greater than one megawatt, a public hearing was held on August 1, 1983. The record reflects that witnesses were presented on behalf of the New Jersey Department of Energy, Kinsley's Landfill, Inc., Hoffman LaRoche, Inc., Public Service Electric and Gas Company and Jersey Central Power and Light Company. In addition, statements were made on behalf of the Department of the Public Advocate, the County of Essex and the Port Authority of New York and New Jersey.

Those appearing on behalf of QFs, or of potential QF investors in facilities of capacity in excess of one megawatt, were of the opinion that the electricity cogenerated in said facilities had more value to an electric utility because of the increased reliability factor when compared to QFs of capacity less than one megawatt. They indicated that, while it was understood that negotiations to enter into long term contracts were to take place, it had been the impression of operators of QFs of capacity greater than one megawatt that the full avoided costs, as set out by the Board in the Decision and Order dated October 14, 1981, would serve as a basis for said negotiations.

The utility witnesses expressed the view that the Board Order had called for two completely separate approaches. That is, those QFs of capacity of one megawatt or less would come under the provisions of the standard tariff while those QFs of capacity greater than one megawatt would negotiate long term contracts in which all terms would be open for discussion. It was their opinion that the application of the full avoided costs, as previously determined by the Board, to QFs of capacity greater than one megawatt would amount to a substantial portion of the cogenerators at the expense of utility ratepayers.

They expressed their belief that negotiation represents the best method of promoting cogeneration. It was their fear that, should the Board impose rules for negotiating contracts based upon the guidelines of the standard tariff pertaining to QFs of capacity of one megawatt and less, the latitude for such negotiations would be reduced. Rather, they felt that the Board should limit its involvement in the issue of negotiations to the role of a mediator.

As noted in our Decision and Order dated October 14, 1981, the Board, pursuant to FERC Order No. 69, was to establish standard rates for the purchase of power from a QF with a designed capacity of 100 kilowatts (KW) or less. 18 C.F.R. s 292.304 (c) (1). Since we were not precluded from establishing rates for those facilities with a capacity in excess of 100 KW, the Board chose to set a standard tariff for those QFs with a capacity of one megawatt or less, as one megawatt is the minimum measurement of energy recognized by the PJM power pool. 18 C.F.R. s 292.304 (c) (2). We are aware of nothing in the federal legislation, FERC orders and rules or this Board's Order that indicates that the avoided cost as determined by this Board is not applicable to QFs of capacity greater than one megawatt as it is to QFs of lesser capacity.

It is the belief of this Board that it is sound policy for a larger QF to negotiate the rates for the sale of its power to electric utilities. Through such negotiations, a contract may be developed which will address and meet the particular financing and technical needs of a QF investor. For example, a hydro-electric or a resource recovery investor may desire a contract which yields greater revenues during the initial years of the agreement. Conversely, a cogenerator utilizing natural gas may favor a contract rate which increases over time in order to keep pace with the cost of fossil fuels.

Although the buy-back rates for QFs of capacity over one megawatt should be subject to negotiation, 18 C.F.R. s 292.301 (b), the Board is of the opinion that there is a need for a basis upon which said negotiations may commence. Without this, the QF investor starts out essentially in the same disadvantaged position he would have been in had he negotiated prior to the passage of PURPA, a period in which it was recognized that electric utilities had been reluctant to sell power to or buy power from this type of facility. FERC v. Mississippi, 102 S. Ct. 2126, 2132 (1982).^{1/} We agree with the position of the Department of Energy that the absence of a basis for negotiations may well result in excessive uncertainty on the part of potential cogenerators, thereby inhibiting the growth of cogeneration. We find such a result to be totally unacceptable in light of our past endorsement of cogeneration and the potential benefits that it holds for the State of New Jersey. It is our firm belief, however, that the negotiation of long term contracts that are tailored to the specific characteristics of a particular QF will maximize benefits to the QF as well as to the affected utility and its ratepayers. We are further of the opinion that the use of a basis should not adversely affect the negotiation process.

Therefore, we reiterate that the full avoided energy and capacity costs, as set out by the Board in our Decision and Order of October 14, 1981, are reasonable and are necessary to promote cogeneration and small power production in the State of New Jersey. It should be noted that the reasonableness of these buy-back costs was not calculated based upon the capacity of a particular QF. Rather, these costs reflect an amount that is necessary to encourage cogeneration and small power production, but does not significantly affect the bills of electric utility customers. Therefore, we specifically find that these costs are as valid for QFs of capacity over one megawatt as they are for QFs of a lesser capacity. Accordingly, a QF of capacity greater than one megawatt is entitled to a contract at said full avoided cost in the absence of a specifically negotiated contract.

^{1/} The difference being that, pursuant to the Decision and Order of October 14, 1981, the Qf investor could subsequently request the participation of the Board and its Staff in contract negotiations.

We are of the further opinion that the effective date of this Order should be October 14, 1981, since the Order only clarifies our earlier Order. We repeat our intention stated in the October 14, 1981 Order, that "Within five years from the date of this Decision and Order, the Board will initiate a review of cogeneration and small power production in order to assess its effect in New Jersey."


In addition to the above, the Board will require that the affected electric utilities provide, on a yearly basis, certain projected cost information which will be of assistance to QF investors and the Board's Staff. This information shall consist of projected energy costs and levelized projected energy costs to be stated on a mills per kilowatt-hour basis. Said information shall cover peak and off-peak periods for each season of the current calendar year and each of the next twenty years. In support of these cost estimates, each utility shall provide the following:

- a. A brief description of the methodology used to estimate the energy costs;
- b. The projected fuel prices used to estimate the energy costs in cents per mmbtu, and the underlying fuel and general inflation rates;
- c. The annual projected load in megawatts and total energy demand in megawatt-hours for the twenty year period and a brief description of the forecast's methodology and key assumptions;
- d. The projected source and cost of electric energy supply for each year of the twenty year period by fuel type; for example, nuclear, coal, oil, steam, hydro, combustion turbines, net firm purchased power and net interchange;
- e. The electric utility's plan for the addition of plant by amount and type, purchases and sales of firm energy and capacity, and capacity retirements during the current calendar year and each of the next twenty years, including for each addition: the estimated total cost at completion; the amount currently expended; the projected life of the plant; the fixed and variable operations and maintenance cost, and the expected average energy cost and inflation rate.

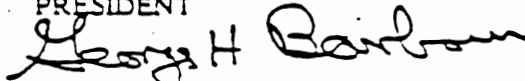
The electric utilities shall coordinate the submission of the foregoing information with the Board's Division of Electric.

DATED: December 7, 1983

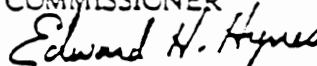
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ELIZABETHTOWN GAS COMPANY (ETG)
COGENERATION SERVICES
FACT SHEET

- *ETG currently has 5 cogenerators on-line which represents a total of 27 + MW

- *ETG has held 2 seminars for industrial customers on cogeneration

- *ETG has identified the potential for cogeneration in their service territory through market assessments completed by nationally recognized consultants

- *ETG has 23 identified prospects for cogeneration with a potential of 220 + MW

- *ETG performs computerized cogeneration screening and pre-feasibility studies for customers

- *ETG assists customers in cogeneration application

- *ETG obtains consultants to work with feasible cogenerators

- *ETG is currently working on natural gas rates for firm and interruptible cogenerators

- *ETG views cogeneration as a viable method for improving our load factor and, therefore, we will attempt to further identify and assist economically feasible cogenerators



BRIAN A. PARENT
SENIOR VICE PRESIDENT -
PLANNING & RATES

TESTIMONY OF BRIAN A. PARENT
BEFORE THE ASSEMBLY ENERGY AND NATURAL RESOURCES COMMITTEE
CONCERNING COGENERATION
APRIL 2, 1986

Atlantic Electric
1199 Black Horse Pike
Pleasantville, N.J. 08232
609-645-4417

TESTIMONY OF BRIAN A. PARENT

BEFORE THE ASSEMBLY ENERGY AND NATURAL RESOURCES COMMITTEE

CONCERNING COGENERATION

APRIL 2, 1986

Madam Chairman, and members of the Committee: my name is Brian A. Parent, Senior Vice President-Planning & Rates, Atlantic City Electric Company. Atlantic Electric, an investor owned public utility organized under the laws of New Jersey, provides for the generation, transmission, distribution and sale of electric energy to over 400,000 customers in Southern New Jersey. Atlantic Electric covers a 2,700 square mile service territory, representing the southern one-third of the State of New Jersey.

Atlantic City Electric Company is pleased to have the opportunity to offer comments on the topic of cogeneration. We support economic cogeneration and in fact, we have been involved with cogeneration since 1928. On two previous occasions we've had the opportunity to comment on cogeneration and other issues within the New Jersey Energy Master Plan and our comments are attached for your information. My comments today will supplement my previous comments and focus on the following:

- 1) If cogeneration is pursued in New Jersey under the guidelines contained in the State's Energy Master Plan it will result in major economic inefficiencies. In fact, the United States Department of Energy has identified a number of economic inefficiencies in the implementation of the Public Utility Regulatory Policy Act (PURPA) throughout the country and the promotion of cogeneration as proposed in New Jersey illustrates each one of the inefficiencies identified.
- 2) As a result of dual and overlapping regulation in New Jersey, caused by ambiguous legislation, both utilities and cogenerators alike are faced with impediments to developing cogeneration.
- 3) In addition to the above, cogeneration development in Southern New Jersey is impeded by the inability to transmit large volumes of natural gas on a year round basis.

Economic Inefficiencies and the New Jersey Energy Master Plan

On March 18, 1986 the U. S. Department of Energy released a report entitled "Emerging Policy Issues in PURPA Implementation". The report identifies the following eight (8) economic inefficiencies resulting from implementation efforts and which warrant corrective action:

- a) Requirements for utilities to purchase power from qualifying facility (QF) at rates which exceed the utilities full avoided costs.

- b) Requirements for utilities to include capacity payments in QF purchase rates even when the utility has excess capacity and no measurable savings result from such QF purchases.
- c) Failure to properly distinguish between "sunk costs" and "avoidable costs" in determining QF purchase rates.
- d) Failure to consider QF availability and reliability in determining QF purchase rates.
- e) Offering "incentive" payments to QF's which are not directly linked to the utility's avoided cost, but are viewed as necessary to encourage QF development.
- f) Establishing minimum or uniform statewide purchase rates for QF's which fail to correspond to the avoided costs of the purchasing utility.
- g) Mandating purchases from QF's which require utilities to deviate from what would otherwise be considered as the most efficient mode of system dispatch and operation in order to accommodate QF purchases.
- h) Restricting the ability of the utilities to competitively solicit needed capacity from QF's on a least-cost basis.

After analyzing the State Energy Master Plan, I firmly believe that all of the above examples of economic inefficiencies are contained in the final version issued in December, 1985. In addition, after personal discussions with representatives of the U. S. Department of Energy regarding both their report and their review of the New Jersey Energy Master Plan, I believe I can fairly represent that they concur with my assessment.

Implementation of cogeneration under the policies proposed in the State's Energy Master Plan will result in a great disservice to and hoax on consumers in New Jersey by raising electric utility rates to levels higher than they would otherwise be.

Dual and Overlapping Regulations

In addition to the cogeneration policies advocated by the New Jersey Department of Energy (NJDOE) there are different cogeneration policies advocated by the Board of Public Utilities (BPU). Each entity has claimed jurisdiction. Since just about all new baseload electrical generating capacity including cogeneration capacity has a total cost in excess of the average cost of existing facilities, the purchase of power from a cogenerator will require higher rate levels. In that the BPU is the only regulatory body authorized to determine and set utility rate levels, utilities will not enter contracts with cogenerators without the condition of BPU approval. While the words of the BPU cogeneration policy (110% of the PJM Billing Rate plus the PJM Capacity Deficiency Rate) have not changed since it was issued a few years ago, the BPU interpretation appears to me to be changing. Initially, the

general interpretation was that the policy represented a minimum basis for negotiation of the utility payment for cogeneration capacity and energy. Under this interpretation the policy would exhibit many of the economic inefficiencies noted above, but not as many as the existing NJDOE policies. Of recent date the BPU Staff has held the policy to mean that this is the maximum payment permitted for recovery in rates of a utilities payment for cogeneration capacity and energy. Under this interpretation the policy would exhibit no more than two or three of the economic inefficiencies previously noted.

The obvious result of the above confusion is an impediment to timely cogeneration development due to protracted contractual discussions on the levels of purchase power costs electric utilities are willing to pay. And it is small wonder that many cogeneration developers, who are using the NJDOE policies as their guideline, often feel that utilities are not supporting cogeneration initiatives.

The most appropriate solution is to base the purchase power costs to cogenerators on each utility's unique avoided costs, not on a proxy avoided cost calculation, and to clarify the existing legislation to eliminate the dual and overlapping regulations.

Natural Gas Impediments in Southern New Jersey

Southern New Jersey represents a very rural area relative to its surroundings in the Northeastern United States. We have a per capita density fully two-thirds lower than Central and Northern New Jersey. Within our service area natural gas is not uniformly available and in fact, serves only 30% of the geographic area and only 50% of the population. In addition, existing natural gas transmission systems are not currently capable of supplying natural gas requirements of potential cogeneration applications on a year round basis. This greatly affects the economics of potential cogeneration and will be a limiting factor in cogeneration development even if the previous problems are rectified.

Summary

We believe that the cogeneration policies in the State's Energy Master Plan will result in uneconomic cogeneration and will needlessly raise electric rates to consumers. Economic cogeneration in New Jersey would be assisted by the elimination of dual and overlapping regulation and by establishing the purchase price for cogenerated power to be equivalent to each utility's own avoided costs.

I would be glad to answer any questions you may have on my comments. Let me also say that I, and my staff are available to the committee for whatever information we can supply on energy related matters. Thank you for the opportunity to make these remarks.



BRIAN A. PARENT
SENIOR VICE PRESIDENT -
PLANNING & RATES

September 6, 1985

Mr. Leonard S. Coleman, Jr.
Commissioner
New Jersey Department of Energy
101 Commerce Street
Newark, New Jersey 07102

Dear Commissioner Coleman:

Re: Cogeneration

Atlantic City Electric is pleased to offer comments on the topic of cogeneration. Neither the concept nor its application is new to the Company as witnessed by our involvement with cogeneration activities for close to sixty years. We believe we have a positive philosophical stance with respect to cogeneration in that we are committed to meeting as much load growth as possible through the reliable and economic use of cogeneration, alternate energy and resource recovery applications.

Historical Involvement and Present Status

In 1928 we entered our first major cogeneration agreement. This facility, designed to meet the steam requirements of a DuPont Company operation in Pennsville, represents a total of 48 MW of cogenerated power from coal fired boilers. The plant and equipment associated with the facility has been upgraded and expanded over the years, however, the initial concept and application has remained essentially unchanged.

In 1951 we entered into a second cogeneration facilities agreement for a DuPont Company operation in Gibbstown. This operation represented 12.5 MW of cogenerated power but because of the deterioration of the underlying business economics supporting the facilities, the steam load decreased resulting in the closing down and retirement of the turbo generator in 1974 and the proposed shutdown and retirement of the steam producing boilers in 1986. While such terminations have not represented any additional cost to our utility system customers, they exemplify that the success of any particular cogeneration application is tied to underlying business and product life cycle changes and is not always uniformly successful.

Our annual long range load and capacity forecast, filed with the Department of Energy (DOE) and the Board of Public Utilities (BPU) earlier this year, includes the 48 MW of existing cogeneration as well as the development of an additional 51 MW of cogeneration and resource recovery facilities. Since the development of this forecast in late 1984 and early 1985 we have embarked on a number of activities that have the potential to help us realize the forecasted cogeneration impact and expand it. These activities are as follows:

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Mr. Leonard S. Coleman, Jr.
Page 2
September 6, 1985

- a) We have retained the services of a respected New Jersey consulting engineering firm to examine in excess of 20 specific customer installations representing 6 generic customer processes in our service area with respect to the technical and economic feasibility of cogeneration application. The results of each analysis will be shared with the customer for their review of the cogeneration potential and we will be working toward implementing those systems that are technically and economically feasible. Our initial estimates indicate the potential for 20 MW of displaced load with little or no sale of excess energy to the Company. This represents approximately one year's load growth in our present 15 year forecast.
- b) We are working with a major industrial customer with respect to potential cogeneration at their facility. We are jointly evaluating various options which include up to a 130 MW facility with approximately 90 MW of capacity above the needs of the industrial operation. The primary fuel would be a waste gas product. It should be noted that this customer and the Company have been making various potential cogeneration studies over the years and our surveys in the late 1970's indicated that additional cogeneration was not available at this facility. Initial indications are that the present BPU authorized buyback rate may be an acceptable price.
- c) Since the latter part of 1984 we have been exploring the technical and economic feasibility of district heating within the City of Atlantic City. We are jointly funding the feasibility studies with Cogeneration Development Corporation and a major construction company. As presently envisioned, the project would provide central heating and hot water to large municipal, state and private facilities from a net 42 MW combined cycle gas turbine/steam turbogenerator that would use natural gas and No. 2 oil as backup. In this particular operation, initial indications are that the electrical energy buyback rate would need to be significantly higher than the existing BPU authorized rate in the initial years for the project to proceed.
- d) The Company is continuing to work with a number of counties within our service area in the examination of the potential for resource recovery either in mass burning type facilities or using the application of Refuse Derived Fuel (RDF). We have supplied a position paper on RDF and are cooperating with several counties in further examination of RDF use at our B. L. England facility.

We estimate that our annual long range load and capacity forecast currently under development will include a substantial increase in forecasted cogeneration and will defer our planned capacity additions in 1995 and 1999 of two 60 MW combustion turbines.

Mr. Leonard S. Coleman, Jr.
Page 3
September 6, 1985

Company's Comments On Cogeneration

As we stated in our comments on the Draft Energy Master Plan, economic cogeneration can benefit both our ratepayers and the customers who install it. We recognize the societal benefits of bringing cogeneration on line to mitigate future capacity additions, however, we believe that it must be recognized that untimely cogeneration will increase customer cost and involve the potential of many years passing before an economic benefit for the customer is achieved.

Each project must be used and useful and specifically evaluated from an economic standpoint so that the goal of societal benefits can be realized. Projects that can be economically justified using existing BPU authorized buyback rates are cost effective today. However, since we have no planned capacity additions until the mid-1990 time frame, cogeneration applications coming in that time frame exhibit better economics to our customers. We assess our plans annually and recognize that changes occur. Thus, we are willing to negotiate with respect to cogeneration facilities with an earlier implementation date as long as there is a reasonable expectation that there will be a net economic benefit over the life of the contract and that our customers will incur no net economic penalties.

As stated in our testimony on the Draft Energy Master Plan, we believe the Department of Energy's proposed buyback rates are inappropriate. Combining the full avoided capacity costs at the present value of base load capacity and the avoided energy costs at the non-related level of oil/gas generation expense is equivalent to mixing apples and oranges and will result in uneconomic cogeneration applications and needless cost increases to our customers.

It should be noted that the economics for cogenerators are not the same as that of a public utility because cogenerators have a guaranteed market. In addition, public utilities have an obligation to serve while cogenerators have no such obligation. They can and do make unregulated business decisions and if financial performance is unsatisfactory they go out of business. Also, we feel there should be a review of a cogenerators profit margin if the cost of encouraging cogeneration would cause short term cost increases to our customers. Excess profits should not be made at the expense of our ratepayers. In order to assure appropriate purchase contracts, we believe a BPU public review of these contracts is necessary, just as there is for utility rate proceedings and certificate of need applications for utility capacity expansions. We feel the Office of the Public Advocate should have a voice in this public review of projects requiring in excess of the BPU authorized buyback rates. This is assured in our rate cases, it is a fact of life in our State and should not be short cutted in this vital area.

Mr. Leonard S. Coleman, Jr.
Page 4
September 6, 1985

Concerning regulatory issues, we believe standard contracts are counterproductive. The issue has been raised that standard contracts are needed so that cogenerators have the proper information available. Cogeneration developers need and can get this information now (the Company annually files with the BPU a 15 year forecast of avoided costs and provides actual avoided costs quarterly) and we do not believe they've been hindered. In addition, contract terms are affected by start dates, levelizing of rates, risk sharing and expected capacity. No standard contract can satisfy all these concerns. We believe the BPU's position on long term contracts is positive and believe their latest Order with respect to American Re-fuel Corporation is a positive step in BPU policy.

We believe a definite overlap of regulation currently exists. We believe the BPU has, through the PURPA hearings, developed an adequate cogeneration policy and position. We do not believe the proposed policy in the Energy Master Plan is appropriate. We recommend the DOE adopt the BPU's present cogeneration position.

With respect to wheeling cogenerated power, we believe the following five factors describe the appropriate criteria:

- 1) Our franchise is to serve our customers in the most economical fashion.
- 2) Our transmission system was built for and paid for by our franchise customers and they must have first priority for its use.
- 3) Atlantic Electric has joined with other utilities to build high voltage transmission lines and they are operated for the maximum transmission use of Atlantic Electric and the other co-owning utility systems. The existing system is already loaded at 98% of its capacity on a year round basis.
- 4) We will wheel short term energy for cogenerators and others if the transmission capacity is currently available and is not needed for our franchise customers. The rate should be calculated based on its true cost. Our position is that our franchise customers must always come first or be made dollar neutral.
- 5) Where additional transmission facilities are required, the true cost of those facilities must be recovered from the requesting cogenerator.

Our policy is to provide safe and adequate service. Cogeneration has the potential to increase dispatch problems in that the electrical generation of the cogenerator's facilities normally follow a business need rather than an electrical need. The process is normally dependent upon hot water or steam needs, not electrical energy needs.

Mr. Leonard S. Coleman, Jr.
Page 5
September 6, 1985

The electric utility is obligated to serve and this includes back standing responsibilities. The cogenerator on the other hand has no such obligation. We believe that the diversity of cogenerators may increase short term reliability, however, long term capacity safe guards do not exist. Cogenerators have no obligation to serve electrical customers. In scenarios where a cogeneration facility has been paid off and the underlying business supporting the process is marginal there is the possibility of the cogenerator going out of business, an option an electric utility does not have. Electric utilities must serve regardless of business or financial risks. In order to address these areas, and insure the societal benefits, we believe there must be contract protection. This can take the form of the utility having the right to take over the generating capacity if the cogenerator goes out of business. It can also include governmental agencies back standing the non electrical process, as with the Trenton District Heating Project.

Localized electrical operating problems can exist and safety must always be a consideration. In order to assure proper interconnection design, utilities must be involved and the cogenerator must be prepared to pay the full cost.

Conclusion

Atlantic Electric has been in favor of cogeneration where economical and appropriate. We have taken joint venture responsibilities for projects in the past and will continue to examine and develop cogeneration potential in the future. We stand ready to address any questions, both technical or economical that any cogenerator developer requests. We have focused and coordinated our cogeneration activities at our Company and have in place the proper tools to address economics. We recognize the societal benefits of cogeneration and are willing to accept the proper risks related to short term economics versus the long term benefits of our customers. We believe that the BPU has set up the proper policies and has acted in a proper manner in their past decisions in order to make cogeneration a reality.

Very truly yours,

BAP:ejk



BRIAN A. PARENT
SENIOR VICE PRESIDENT -
PLANNING & RATES

May 15, 1985

Mr. Edward J. Linky, Chief
Office of Regulatory Affairs
Department of Energy
101 Commerce Street
Newark, New Jersey 07102

Dear Mr. Linky:

Re: DRAFT MASTER ENERGY PLAN

Atlantic City Electric Company is pleased to offer comments on the draft New Jersey Energy Master Plan dated March 6, 1985. We complement the Department of Energy and its staff for the vast amount of effort put forth in developing the draft in such a comprehensive manner. As we said when the first Master Plan was issued in 1978, we support the goals of the Department of Energy which we believe are entirely consistent with our corporate mission.

The following comments are intended to address our serious concerns with the substantive issues and will be the basis of our remarks at the public hearing to be held on May 20, 1985 in Newark, N.J.

I. Atlantic City Electric Company Forecasting and Construction Plans.

The Company is submitting as an attachment to our comments, pages 73 through 82 marked to show corrected and updated data with respect to our forecasted capacity, peak load, sales, net system requirements and reserve margin.

This data, which is filed annually, reflects the Company's 1984 fall load forecast which was submitted to the New Jersey Department of Energy and the New Jersey Board of Public Utilities on April 23, 1985.

Rather than just correct the data errors contained in the draft Energy Master Plan, (data used by DOE did not include all of the Company's capacity and thus made incorrect conclusions about forecasted reserve margins) we feel our most current data should be included.

This annual submittal of data includes, for all major sectors, the potential peak load and energy savings from conservation activities, cogeneration, recoverable and renewable energy sources and load management programs. It

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Mr. Edward J. Linky
May 15, 1985
Page 2

indicates reserve margins between 23% currently to 11% in the mid-1990's with system load factor reaching 60% near the end of the century.

II. Electric Space Heating and Building Code Revision

The proposed standard for improving the thermal efficiency of new dwellings through increased insulation levels is commendable and the concept is consistent with changes we have been recommending to the building code since 1978.

However, we believe, as currently drafted within the Energy Master Plan, the code is unreasonable in its provisions covering space conditioning systems. Our belief is based upon the following factors:

- a) Our studies indicate that no technical or economic evidence exists which justifies restrictions on electric heating systems. Electric heating is an economic and competitive system in terms of installed cost, total annual cost, and overall life cycle costs in our service area.

Of special interest in our service area are seasonally occupied dwellings that exhibit an even stronger preference for initial cost, life cycle cost and convenience.

- b) Southern New Jersey represents a very rural area relative to its surroundings in the Northeastern United States. It has a per capita density fully two-thirds lower than Central and Northern New Jersey. Within the Company's service territory natural gas is not uniformly available and in fact, serves only 30% of the geographic area. In 1984, natural gas was unavailable to 66% of the dwellings installing electric resistance heat. A ban of a competitive and economic heating system such as electric heat will force many dwellings in Southern New Jersey to the use of oil for heating, which is contrary to the Energy Master Plans stated goals and uneconomic for, and undesired by many of the residents of Southern New Jersey.
- c) Minimum EER/SEER requirements for air-conditioning proposed within the Energy Master Plan are too stringent. Only 6% of the available models of heat pumps and 9% of the available models of central air-conditioners have an EER/SEER of 10 or more. The

Mr. Edward J. Linky
May 15, 1985
Page 3

effect of the DOE proposal would ban more than 90% of the equipment on the market today without providing any technical or economic justification.

- d) Atlantic City Electric Company has developed a Residential Thermal Efficiency Standard (RTES) and has been urging adoption and incorporation within our terms and conditions for service of this standard for two years. This standard places all electric heating technologies on economic parity with fossil fueled systems for space heating. Since the NJDOE is now proposing a standard essentially equivalent to the RTES we fail to understand the logic of prohibiting this valuable and cost-effective product in the New Jersey economy.

III. Energy Conservation Plans and Home Energy Rating System

The Company's position and comments on Energy Conservation Planning and Program Development Evaluation were submitted by letter dated January 17, 1985, and in testimony presented at a public hearing on January 24, 1985. Our position and comments were, and continue to be, a recommendation not to adopt the regulations for the following reasons:

- a) The regulations are duplicative of the existing Conservation, Cogeneration and Load Management programs approved by the NJBPU with full knowledge of the NJDOE;
- b) The regulations ignore the uniform statewide cost/benefit analysis currently being undertaken by the Conservation Analysis Team;
- c) The regulations impose arbitrary expanded program targets and additional costs, administrative and otherwise, without providing a supportive cost/benefit analysis;
- d) The regulations will jeopardize existing and ongoing conservation programs within the state;
- e) The regulations are premature, at best.

We do not believe the proposed regulations address any new conservation areas not already being performed by the Company, but calls for substantial program expansion at a cost that we believe cannot be justified without some quantifiable knowledge of the benefits to be gained. We do not believe

Mr. Edward J. Linky
May 15, 1985
Page 4

this to be in the best interest of our customers. In addition, we do not believe the concept of load management in the residential sector has received sufficient consideration within the proposed programs offered by the NJDOE based on the potential benefits to be gained. Atlantic Electric is in the process of conducting a pilot study of the application of residential load management within our service area.

We have no disagreement with the intent of the Home Energy Rating System (HERS) program. However, we do question the practical benefits based on our survey of the results of this type of program attempted in other geographic areas within the United States. This survey indicated that without coordinated statewide efforts the potential benefits of a HERS program are not achieved and the expenditures associated with establishing the program are a cost rather than a benefit to society.

IV. Energy Facility Siting

The Certificate of Need Act requires the NJDOE to determine the need for new electric generating units on the basis of, among other criteria, "whether existing sources of supply will be adequate to meet future levels of demand". Our concern is the lack of breadth in the criteria to permit development of additional sources of supply based on economics as an alternative to need. The Act makes no provision for a condition where additional supply is economic because it would currently replace high cost generation and eventually is needed for peak demand purposes. In such circumstances, we feel that the Certificate of Need should permit a decision to proceed based on economics rather than just need alone.

In addition, it is clear that the NJDOE intends to apply the need standard to all electric generating facilities regardless of size. Atlantic City Electric takes exception to this proposed arbitrary policy which is beyond the intent of the Certificate of Need Act and the promulgated regulations.

V. Coal and Coal by Wire

Atlantic City Electric Company has in the past and will continue to support the increased use of coal for electrical generation wherever it is technically feasible, environmentally sound and economic to do so. Due to coal conversions already accomplished by the Company, 60% of our customers electrical energy requirements were supplied by

Mr. Edward J. Linky
May 15, 1985
Page 5

coal in 1984 and only 20% came from oil-fired units, with the balance supplied by nuclear and natural gas.

We believe that it is not technically feasible, nor economic to convert the remaining oil-fired units on our system to coal. However, we have supplemented our own coal generation by purchasing "coal by wire" from non New Jersey generating stations. This "coal by wire" is composed of these forms -- jointly owned units outside of New Jersey, interchanged power through the PJM interconnection, and purchased power from coal fired units owned by Midwestern utilities. The Company supports the concept of "coal by wire" whenever it is technically feasible, and economic to do so as an alternative to burning oil. The application of this concept resulted in savings to our customers of \$35 million in 1984. To discourage this concept even when it has proven to be economic, in favor of uneconomic or infeasible coal conversion, is not in the best interests of the citizens of New Jersey. There is no documented evidence to support the theory that out of state coal plants are responsible for many of our state air pollution problems and NJDOE should support the concept of providing electrical energy by the most economical means.

VI. Pennsylvania - New Jersey - Maryland Interconnection (PJM)

We believe that the portion of the Energy Master Plan which contains a discussion of the PJM contains a number of mis-statements of fact and inappropriate conclusions.

The PJM is a contractual arrangement between eight major utilities whose service areas cover much of Pennsylvania, most of New Jersey, the state of Delaware, a portion of the states of Maryland and Virginia, and all of Washington, D. C. Municipal systems such as Vineland Electric are interconnected with PJM member companies and have no contractual participation with PJM. An interconnected system such as PJM cannot totally prevent localized outages within the systems of its member companies. Interconnection does make it possible for some level of back-up capacity in case of capacity problems within a given member's system but requires each member to install sufficient capacity to handle its own system load plus a required reserve.

While the pricing system within PJM is not subject to state regulatory control, this does not mean that no regulation exists. The Federal Energy Regulatory Commission by law requires both the filing and justification of all of PJM

Mr. Edward J. Linky
May 15, 1985
Page 6

pricing mechanisms and must accept or approve those pricing mechanisms before they may be implemented. Within the PJM, each member company is responsible for providing enough capacity to meet its peak load plus a required operating reserve. The justification of the type of capacity installed by each member is based upon each member's own system characteristics, environmental regulations and by the regulating entities affecting the utility. Thus, the sale or purchase of energy as a result of the PJM operations is appropriately a by-product benefit rather than a determinative factor in choosing units to be installed on any member's system and the analogies contained in the Energy Master Plan are inappropriate.

VII. Natural Gas the Fuel of Choice

Within the Energy Master Plan is the concept that natural gas should be recognized as the sole fuel of choice for buildings and processes within New Jersey. We have serious concerns with this message within the plan for the following reasons:

- a) We do not see a benefit of adopting a policy favoring a single fuel source whose future supply is uncertain. Sound planning requires a diversification of fuel sources.
- b) Currently there exists uncertainty regarding future production and recoverable resources of natural gas in the United States.
- c) Aggregate econometric data suggests that both real and nominal natural gas prices will rise at a faster rate than the price for electric energy.
- d) As recently as the 1970's natural gas was a commodity in short supply and rapidly increasing in cost in New Jersey. In 1977 the Governor of New Jersey issued an Executive Order curtailing all non-essential uses of natural gas.
- e) Approximately two-thirds of the geographic area of Southern New Jersey has no gas available.

This concept combined with the restrictions proposed for electric heating would require an increase of almost 7 trillion BTU of natural gas between 1986 and 1998 (a value equal to 60% of 1983 gas consumption in Southern New Jersey) and 2.4 million barrels of oil (12% of New Jersey's current

Mr. Edward J. Linky
May 15, 1985
Page 7

consumption) in Southern New Jersey over the same time period. The result would be a reversal of recent consumption trends and increase the dependence on these fuel supplies.

Based on the above, and our analysis regarding the comparative economics of other sources with natural gas, we believe the concept within the Master Plan to be short sighted and not in the best interests of the citizens of Southern New Jersey.

VIII. Cogeneration and Avoided Cost

Atlantic City Electric Company has a positive philosophical stance with respect to cogeneration as witnessed by our association with the concept and its application in our service area.

Our forecast mentioned earlier in these comments includes the potential of 20 megawatts of resource recovery facilities and an additional 31 megawatts of customer supplied generation (cogeneration and photovoltaics).

We recognize the need to provide published rates for potential owners of cogeneration and in qualifying facility (QF) developments and currently embrace the rates mandated by the NJBPU for small power producers of 1 megawatt or less and the negotiation process for facilities over 1 megawatt.

Our concern with the implications in the Energy Master Plan regarding cogeneration and qualifying facilities is four fold and is detailed as follows:

a) Data and computation of avoided cost

When does the commitment of future capacity dictate the value of avoided cost?

b) Reliability

In order to receive full capacity benefits we believe that QF capacity must meet the same PJM standards of availability and control that apply to utilities.

Mr. Edward J. Linky
May 15, 1985
Page 8

c) Uncertainty of future operation

Without a guarantee of service life and performance standards, the QF has no obligation to stay in business and the utility must then replace this capacity on short notice and therefore higher cost.

d) Equity for the Company's customers

No QF can claim to displace both base load capacity costs and peaking unit energy costs. Payments from a utility to a QF in excess of its true avoided cost is a societal penalty to all the utilities customers.

Currently, the Company is not capacity deficient. Subsequent to 1986 our capacity plans do not indicate additional capacity needs until the mid-1990's when a combustion turbine unit is added. Thus, based on our current situation and planning, we have no avoided capacity costs in the near term. The Energy Master Plan arbitrarily and incorrectly proposed an avoided cost methodology which measures the full avoided capacity costs at the present value of base load capacity and the avoided energy cost at the non-related level of oil/gas generation expense. This is clearly a mismatch that is uneconomic from the Company's and our customer's perspective.

In an effort to balance the concept of promoting cogeneration for future societal benefit versus incurring costs to QF facilities that are above true avoided cost we propose the following program. Though we currently have no avoided capacity costs, we propose to offer with NJBPU approval capacity payments on a first come, first served basis for additional cogeneration within a limit of an increase in our existing reserve margins of 5% but in no case resulting in a reserve margin above 25%. These capacity payments would be based upon the PJM capacity deficiency payment rate and the avoided energy costs would be the PJM billing rate. While this would be higher than our existing costs and will create economic dislocations for our customers, increased costs will be controlled by the proposed reserve margin limits and should provide enough incentive to test the cogeneration potential.

If the state of New Jersey would wish to promote cogeneration by paying in excess of the true avoided cost and in excess of our proposal above we respectfully suggest that appropriate state funding be used rather than by imposing an indirect hidden tax on electric utility customers.

Mr. Edward J. Linky
May 15, 1985
Page 9

IX. New Jersey Utility Association (NJUA) Comments

The Company is fully aware of the comments made by the NJUA in response to the Energy Master Plan and is in agreement with those comments.

Conclusion

The Company believes that the energy policies for this state need to be based on the three objectives of energy stability, energy security and energy strength which will result in an adequate supply of energy at reasonable cost. We respectfully request the NJDOE to reconsider many of the proposals contained in the draft Energy Master Plan because in our opinion the Plan as currently drafted cannot accomplish the above objectives.

Very truly yours,



BAP:ejk

changing PJM running rate as the basis for cogeneration contracts, very little cogeneration has been developed in New Jersey as a result of the BPU's order.

To sum up, the Department believes that it is time to subject the PJM system to a searching inquiry in order to assure New Jerseyans that they are receiving the fullest possible benefits at the lowest cost. It is also time to re-examine the State's cogeneration policies if we are ever to realize the benefits of this old energy source which is now coming into its own again.

Forecasting and Construction Plans

This discussion of New Jersey utilities and their relationship to the PJM system leads us into a detailed examination of the load growth forecasts of the utilities and the construction programs they have developed to meet projected future demand. In reviewing this section, the reader should keep in mind that the data and proposals put forth are those of the utilities themselves. The publication of this material in this Master Plan should not be construed in any way as an affirmation or endorsement of either the data or the construction proposals by the Department. Rather, the material is presented here for informational purposes and with the direct intent of stimulating public discussion on the issues involved.

This survey is structured to examine the capacity, peak, sales and net system requirements of the State's three largest electric utilities (in alphabetical order, ACE, JCP&L and PSE&G), as well as the State as a whole.

The word "margin," as used in this section, is defined as the difference between a utility's total plant capacity and its peak load (both measured in megawatt hours). PJM requires each member utility to maintain an individual margin based on the operating history of that utility's units. On a percentage basis, the margin can vary from as little as six percent (for a utility with small, reliable generating plants) to as much as 28 percent (for a utility with large, unreliable units).

Atlantic City Electric Company

1594 Capacity: The capacity plans for ACE are shown on Table E-1. The firm
capacity as of January 1, 1984 was ~~1,532~~ MW. The company has several
1661 purchases of energy and capacity additions planned to meet its customers'
needs as inexpensively as possible. At the beginning of 1988, the capacity
will be ~~1,597~~ MW based on the end of the Indian River 4 purchase, the
startup of Hope Creek 1, and the purchase of capacity and energy associated
be 1672 with Susquehanna No. 2. In 1993, the firm capacity will ~~remain at 1,597~~ MW
as the Susquehanna purchases are replaced by purchases from PP&L (coal).
and customer generation for resale is included.

(1995)

one The addition of ~~two~~ new peaking units raises the 1998 firm capacity to
1738 ~~1,777~~ MW. The 2003 capacity will be ~~1,867~~ MW as a result of adding another 1889
peaking unit in 1999 and the placement into service of Cumberland No. 1 by
the end of 2001. These additions will offset the retirements of Deepwater
No. 3 and No. 4 ~~in 2000~~, as well as the termination of the PP&L (coal)
purchase.

1390 Peak: The projected peak for 1988 will be ~~1,399~~ MW which, based on the
1661 firm capacity of ~~1,597~~ MW at the beginning of that year, would give the
19.5 company a ~~14.2~~ percent margin (Table E-2). In 1993, with a projected peak
1510 of ~~1,524~~ MW and a capacity of ~~1,597~~ MW, the margin would be ~~4.8~~ percent. 1672
1593 By 1998, the projected peak of ~~1,629~~ MW and planned capacity of ~~1,777~~ MW 1738
9.1 provides a margin of ~~5.4~~ percent. In the year 2003, a peak of ~~1,769~~ MW and 1669
1889 capacity of ~~1,867~~ MW provides a ~~5.5~~ percent margin. 13.2

N.A. Since these margins are below the industry standard, a strong
conservation and load management program is essential. A comparison of the
company's capacity plans with the projected peak indicates that ACE will
not have adequate capacity through the year 2003 based on the industry
standard. Substantial cogeneration potential exists in the Atlantic City
casinos; this must be developed to assure adequate electricity in the
future.

Although ACE's plan to build peaking capacity is not covered by the
State's Needs Determination Law, which applies only to plants above 100 MW,
a thorough study of this construction must be made anyway.

Sales The forecast of sales for ACE on Table E-3 indicates continued
growth in all sectors. Residential and commercial sectors continue to
dominate net system requirements.

The historical data shown on Table E-4 for sales from 1970 to 1983
provide an insight into the use of electricity by the residential,
commercial and industrial sectors upon which the forecast is based. For
ACE the residential sector has been predominant, although the commercial
sector has shown the fastest growth.

Net System Requirements: ACE met its net system requirements primarily
by generation (as shown in Table E-5), using the plants shown in Table
E-6. In 1983, the level of generation was 85 percent, which can be broken
down to 47 percent coal, 21 percent oil, 15 percent nuclear, and two
percent natural gas. The remainder of the net system requirements was
purchases and interchange amounting to 15 percent.

TABLE E-1
Planned Capacity Changes

		Capacity MW				
		Fuel Type	ACE	JCP&L	PSE&G	Total
Firm Capacity (1/1/84)			1532 1594	3891*	8999	14422
Date	Capacity Change					
5/84	Western Purchases	--	x	220	x	
5/84	PE Purchase	--	x	(471)	x	
2/85 11/84	Susquehanna No. 2	--	63	x	x	
1/85			1595 1594	3640	8999	14234
1/85	TMI-1	UR	x	194	x	
5/85	PL/AEC Transaction	--	x	1	x	
5/85	Purchases	--	x	(8)	x	
5/85	Indian River #4 (Purch)	--	(51)	x	x	
1/86	Customer Generation		1544 1606	3827	8999	14370
1/86	Hope Creek #1	UR	53	x	1014	
1/87	Customer Generation		1597 1659	3827	10013	15437
1/87				2.0		
1/88	Customer Generation		1597 1661	3827	10013	15437
1/88				1.0		
1/89	Customer Generation		1597 1662	3827	10013	15437
1/89	Customer Generation			4.5		

*Excludes capacity of TMI Nos. 1 & 2

TABLE E-1 (Con't)

Date	Fuel Type	Capacity (MW)				
		ACE	JCP&L	PSE&G	Total	
1/89		1597	1662	3827	10013	15437
1/89	Customer Generation		4.5			
5/89	PL/AEC Transaction	--	x	1	x	
12/89	Change in Purchases	--	x	220	x	
1/90		1597	1667	4048	10013	15658
1/90	Customer Generation		1.2			
1/91		1597	1668	4048	10013	15658
1/91	Customer Generation		1.2			
9/91	Susquehanna No. 1	--	(62)	x	x	
9/91	Susquehanna No. 2	--	(63)	x	x	
10/91	PP&L	--	125	x	x	
1/92		1597	1669	4048	10013	15658
1/92	Customer Generation		1.2			
12/92	Purchases	--	x	(44)	x	
1/93		1597	1670	4004	10013	15614
1/93	Customer Generation		1.2			
5/93	Coal #1	COAL	x	375	x	
12/93	Purchases	--	x	(44)	x	
1/94		1597	1672	4335	10013	15945
1/94	Customer Generation		1.2			
5/94	Unassigned CT	--	60	x	x	
12/94	Purchases	--	x	(44)	x	
1/95		1657	1673	4291	10013	15981
1/95	Customer Generation		1.2			
5/95	Unassigned CT		60.0			
12/95	Purchases	--	x	(204)	x	
1/96		1657	1734	4087	10013	15757

TABLE E-1 (Con't)

		Capacity (MW)			
<u>Date</u>	<u>Fuel Type</u>	<u>ACE</u>	<u>JCP&L</u>	<u>PSE&G</u>	<u>Total</u>
1/96	Customer Generation	1657 1734	4087	10013	15757
5/96	Unassigned CT	--	x	x	
12/96	Purchases	--	(204)	x	
1/97	Customer Generation	1717 1735	3883	10013	15713
5/97	Coal #2	COAL	563	x	
12/97	Purchases	--	(204)	x	
1/98	Customer Generation	1717 1736	4242	10013	15972
1/98	Sewaren No. 1 & 2	--	x	(215)	
12/98	Purchases	--	(204)	x	
1/99	Customer Generation	1717 1738	4038	9798	15553
5/99	Unassigned CT	--	60	x	
5/99	Coal #3	COAL	563	x	
12/99	Purchases	--	(204)	x	
1/2000		1777 1799	4397	9798	15972
9/2000	PP&L	--	(125)	x	
5/2001	Deepwater No. 3 & 4	--	(75)	x	
5/2001	Cumberland No. 1	COAL	290	x	
12/2000	Purchases	--	x	(44)	
1/2001		1867 1674	4353	9798	16018
5/2001	Coal #4	COAL	438	x	
12/2001	Purchases	--	(44)	x	
1/2002		1867 1889	4747	9798	16412
1/2003		1867 1889	4747	9798	16412

TABLE E-2
Utility Forecast

<u>Year</u>	<u>ACE</u>	<u>JCP&L</u>	<u>PSE&G</u>	<u>Total</u>
<u>Net System Requirements (GWH)</u>				
1983 ²	6,491	14,558	33,392	54,441
1988	7071 6,833	13,970	36,324	57,127
1993	7886 7,529	14,807	38,693	61,029
1998	8392 8,134	15,716	40,737	64,587
2003	9083 8,788³	16,655	42,537	67,980
<u>Planning Peak (MW)⁴</u>				
1983 ²	1,347	3,017	7,244	11,608
1988	1390 1,399	3,100	7,610	12,109
1993	1510 1,524	3,200	7,920	12,644
1998	1593 1,629	3,350	8,170	13,149
2003	1669 1,769	3,500	8,380	13,649
<u>Planning Load Factor (%)</u>				
1983 ²	55.0	55.1	52.0	53.5
1988	57.9 55.8	51.4	54.5	53.9
1993	59.6 56.4	52.8	55.8	55.1
1998	60.1 57.0	53.6	56.9	56.1
2003	62.1 57.1	54.3	57.9	56.9

- 1 Forecast data are weather-adjusted
- 2 Historical actual
- 3 Extrapolated
- 4 Coincident peaks assumed.

TABLE E-3

Forecast of Electric Sales (GWH)¹ by SectorAtlantic City Electric Company

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Other</u>	<u>Total</u>
1983 ²	2545	2019	1226	61	5851 5852
1988	2753 2717	2340 2166	1294 1287	56 59	6443 6223
1993	3084 3025	2686 2472	1363 1365	55 58	7188 6858
1998	3317 3285	2892 2635	1390 1432	53 57	7652 7409
2003	3576 3599	3220 2908	1463 1519	53 57	8312 8083

Jersey Central Power & Light Company

1983 ²	5302	3964	3555	388	13209
1988	5412	4364	3820	374	13970
1993	5555	4846	4007	399	14807
1998	5770	5344	4178	424	15716
2003	6057	5827	4322	449	16655

Public Service Electric & Gas Company

1983 ²	8416	11767	10154	477	30814
1988	8611	13397	11147	350	33505
1993	9101	14300	11926	353	35680
1998	9586	15081	12536	369	37572
2003	9967	15814	13073	378	39232

New Jersey Composite

1983 ²	16263	17750	14935	926	49875
1988	16734	19927	16254	783	53698
1993	17679	21558	17361	810	57408
1998	18641	23060	18146	850	60697
2003	19623	24549	18914	884	63970

← should be redone
with all corrections

1 Forecast data are weather adjusted.

2 Historical, actual.

TABLE E-4

Atlantic City Electric Company
Electricity Sales (GWH)* by Sector

<u>Year</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Other</u>	<u>Total</u>
1970	1,521	977	954	102	3,554
1971	1,625	1,059	990	89 90	3,764
1972	1,742	1,184	1,062	65 64	4,052
1973	1,899	1,352	1,119	58 59	4,429
1974	1,882 1883	1,299	1,137	57	4,376
1975	1,939	1,346	1,037	56	4,378
1976	2,070 2071	1,392	1,143	58	4,664
1977	2,221	1,479	1,220	59	4,979
1978	2,377	1,586	1,251	61	5,275
1979	2,412	1,580	1,255	61	5,308
1980	2,515	1,769	1,286	64	5,634
1981	2,535 2480	1,795 1850	1,280	66 65	5,675
1982	2,415	1,895	1,219	64 63	5,592
1983	2,545	2,019	1,226	103 61	5,894 5851

*NJEDS Data Set #27

TABLE E-5

Atlantic City Electric Company
Net System Requirements (GWH)
and Percent (%) by Type of Fuel/Energy Source

<u>Year</u>	<u>Coal</u>	<u>Oil</u>	<u>Natural Gas</u>	<u>Nuclear</u>	<u>Hydro</u>	<u>Net Gen</u>	<u>Purch & Interch</u>	<u>Net System Rec</u>
1980	2273	1494	480	1287	-	5534	635	6169
%	36.8	24.2	7.8	20.9	-	89.7	10.3	100.0
1981	2103	1255	272	1399	-	5029	1218	6247
%	33.7	20.1	4.4	22.4	-	80.5	19.5	100.0
1982	2172	1206	207	1881	-	5466	677	6143
%	35.4	19.6	3.4	30.6	-	89.0	11.0	100.0
1983	3054	1327	135	960	-	5476	970	6446
%	47.4	20.6	2.1	14.9	-	85.0	15.0	100.0

TABLE E-6

Atlantic City Electric Company (Existing Plants)¹

Base Load Plants Name/Location & Unit #	Plant Type	Summer Cap (MW)	Prim. Fuel	Alt. Fuel	Date	\$/kw ²	¢/kwh ²
Conemaugh W. Wheatfield, PA	1 Steam	32	Bit.	x	1970	154	2.5
	2 Steam	33	Bit.	x	1971	154	2.5
Deepwater Deepwater, NJ	1 Steam	83	#6	Bit.	1958	309	6.0
	6 Steam	80	Bit./	N G	1954	309	6.0
B.L. England Beesley's Pt., NJ	1 Steam	8 129	Bit.	#6	1962	313	3.3
	2 Steam	160	Bit.	#6	1964	313	3.3
	3 Steam	160	#6	x	1974	313	3.3
Keystone Plum Creek, PA	1 Steam	21	Bit.	x	1967	124	1.5
	2 Steam	21	Bit.	x	1968	124	1.5
Peach Bottom Peach Bottom, PA	2 Nucl/BWR	79	Ur.	x	1974	416	1.2
	3 Nucl/BWR	78	Ur.	x	1974	416	1.2
Salem Salem Lower Alloways Creek, NJ	1 Nucl/PWR	80	Ur.	x	1977	805	2.0
	2 Nucl/PWR	82	Ur.	x	1981	805	2.0
Carlls' Corner Bridgeton, NJ	1 G T	36	N G	Ker.	1973	28	20.8
	2 G T	37	N G	Ker.	1973	28	20.8
Cedar Manahawkin, NJ	1 G T	46	Ker.	x	1972	9	20.7
	2 G T	22	Ker.	x	1972	9	20.7
Conemaugh W. Wheatfield, PA	A,B,C,D I.C./D	0.4	#2	x	1970	--	--

TABLE E-6 (Cont'd)

Peak Load Plants Name/Location & Unit #	Plant Type	Summer Cap (MW)	Prim. Fuel	Alt. Fuel	Date	\$/KW ²	¢/kwh ²
Deepwater A	G T	19	N G	Ker.	1969 1967	103	8.2
Deepwater, NJ 3	Steam	21	#6	x	1950 1930	309	6.0
4	Steam	54	#6	x	1950 1930	309	6.0
B.L. England Beesley's Pt., NJ	I.C./D	8	#2	x	1962 1961	--	--
Keystone Plum Creek, PA	I.C./D	0.3	#2	x	1967 1968	--	--
Mickleton E. Greenwich, NJ	G T	59	N G	Ker.	1974	--	9.2
Middle 1	G T	20	Ker.	x	1970	82	21.0
Cape May, NJ 2	G T	20	Ker.	x	1970	82	21.0
3	G T	37	Ker.	x	1973 1971	82	21.0
Missouri Ave B	G T	20	Ker.	x	1969	121	17.8
Atlantic City, NJ C	G T	20	Ker.	x	1969	121	17.8
D	G T	20	Ker.	x	1969	121	17.8
Salem 3	G.T	3	#2	x	1977 1971	--	--
Lower Alloways Creek, NJ							

TOTAL INSTALLED CAPACITY

1480.7

1 MAAC, Regional Reliability Council Coordinated Bulk Power Supply Program, April 1, 1984

2 FERC Form No. 1, 1982
Jersey Central Power & Light Company

plus Indian River #4 51.5
Susquehanna #1 62.0

1594.2

total firm capacity
as of 1/1/84

Cogeneration Coalition Of America, Inc.

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March 28, 1986

Members of the General Assembly
Energy and Natural Resources Committee
State House Annex
Room 350
125 West State Street
Trenton, N.J. 08625

Re: Cogeneration and the New Jersey
Energy Master Plan

To the Honorable Members:

The Cogeneration Coalition of America, Inc. appreciates the opportunity to offer this written statement on implementation of the New Jersey Energy Master Plan and the important contribution which cogeneration can make toward achieving the goals articulated in the Master Plan.

The Cogeneration Coalition of America, Inc. The Cogeneration Coalition, a non-profit organization formed in 1980, is comprised of member companies drawn from the industrial user, equipment manufacturing, engineering, consulting and gas utility communities who share a common interest in support of cogeneration development nationwide. Several of our member companies have their principal place of business in the State of New Jersey or are engaged in the review and evaluation of several project opportunities within the State.

The Cogeneration Coalition was pleased to have the opportunity to provide comments on the third proposed New Jersey Energy Master Plan in July and September of 1985. The Cogeneration Coalition commended the New Jersey Department of Energy's comprehensive and detailed draft Energy Master Plan which would encourage the development of cogeneration within the State of New Jersey.

Implementation of the Master Plan. As a result of Governor Kean's recent address on the 1986 budget for the State of New Jersey, it has become apparent that the New Jersey Department of Energy (DOE) may be eliminated as a separate agency and its functions transferred to other existing State agencies. Although the Cogeneration Coalition of America, Inc. understands that specific legislation has not yet been introduced to implement this reorganization, the Cogeneration Coalition urges you to ensure that the important initiatives and goals for the development of cogeneration and recoverable energy sources, as set forth in Chapter 3 of

the Energy Master Plan recently adopted by the New Jersey DOE, be preserved throughout any future reorganization.

The Cogeneration Coalition submits that cogeneration can make important contributions to the economic and environmental well-being of the State of New Jersey. The initiatives embodied in the Master Plan greatly facilitate the realization of the tremendous potential offered by cogeneration to improve the State's economy and energy reliability, raise energy efficiency, reduce energy costs, lower pollution, convert solid waste for fuel, and retain and attract jobs and industry within the State. Any unnecessary delay in implementing the Master Plan occasioned by the proposed reorganization of DOE at this time would be counterproductive to these initiatives and goals. Accordingly, the Cogeneration Coalition urges that you take appropriate action to ensure the continuity and implementation of the energy policies and specific initiatives adopted in the Master Plan during any reorganization of the New Jersey DOE.

New Jersey's Energy Needs. As noted in the Master Plan, the State of New Jersey does not have any reserves of oil, natural gas, coal or any other traditional energy source. Accordingly, New Jersey's residents are more dependent on oil than the national average, a factor which has not changed even though relative consumption levels have diminished greatly in recent years. In addition, New Jersey is far more dependent than other states on electricity imported from out of State, consuming about 36 percent of its electric power from non-New Jersey, utility-owned power plants. Very little cogeneration and small power production has appeared in the State, despite its great potential for lowering consumer bills, increasing energy efficiency and self-reliance, and reducing pollution.

The Benefits of Cogeneration. New Jersey can improve its economy, enhance energy reliability, raise energy efficiency, reduce energy costs, lower pollution, convert solid waste to fuel and promote and retain jobs by encouraging the growth of an alternative source of electric power: cogeneration and small-power production by non-utility energy entrepreneurs. In addition to lowering energy costs of businesses and industries in New Jersey, encouraging the development of cogenerated power would unlock a huge market for cogeneration equipment and services within the State. According to the New Jersey Department of Labor's Division of Planning and Research, constructing 500 megawatts of cogeneration would create 7,500 to 10,000 jobs for masons, engineers, electricians, plumbers, carpenters, and planners as well as 9,700 to 10,000 indirect jobs in trucking, manufacturing, and other support services, for a total of 17,000 to 20,000 jobs.

Cogeneration in New Jersey will also increase the yearly consumption of natural gas, which will benefit all gas customers by spreading the fixed costs of pipelines and gas companies over greater sales volumes. Electric consumers, too, will benefit as cogenerated power sold to local electric companies helps to offset the need for large new central power plants and the importation of power from out of State.

Cogeneration is a proven and feasible technology which can be readily employed in New Jersey just as it has in California, Texas and other states where independent energy producers have flourished alongside healthy electric utility systems. One of the primary reasons for promoting cogeneration is that energy costs have become a critical factor in the ability of states to sustain existing industries and attract new ones. In New Jersey, high cost power is an economic concern of the highest priority. Indeed, there appears to be a strong correlation between the level of energy prices in a state and that state's competitive status within the industrial market. The 1983 Alexander Grant Study on General Manufacturing Business Climates of the Forty-Eight Contiguous States of America noted that energy costs in New Jersey remained "unacceptably high," despite the fact that New Jersey rose from 47th place to 30th place in terms of overall business climate.

The Potential For Cogeneration in New Jersey. There is a tremendous potential for the use of cogeneration by the industrial and commercial sectors in New Jersey. A recent study conducted by Dun & Bradstreet and TRW under a U.S. Department of Energy Contract concluded that in New Jersey there are 213 potential sites for cogeneration plants representing a total potential power generation of 1418 megawatts. Industrial Cogeneration Potential (1980-2000) for Application of Four Commercially Available Prime Movers at the Plant Site; Final Report, August 1984 (DOE/CS40403-1). The great majority of potential plant sites and power generation in New Jersey identified by the Dun & Bradstreet/TRW study, would serve the following major industrial sectors: chemicals, food, pulp and paper, petroleum and coal, textile mill products, stone/clay/glass and primary metals industries. The energy savings to both utilities and these industrial manufacturing sectors of New Jersey's economy would be substantial.

In addition to industrial applications, smaller scale cogeneration facilities can be successfully employed in New Jersey, as they have in other States, by restaurants, hotels, universities, hospitals, nursing homes and similar commercial, municipal, and institutional energy users to produce energy cleanly, efficiently and economically. A forecast by Frost & Sullivan, which takes into account recent declines in energy prices, estimates that the combined industrial and commercial cogeneration systems and services market could grow to \$26 billion between 1985 and 2000 nationwide. In addition, a separate smaller-scale "packaged" cogeneration systems market of \$10 billion with subcontracting opportunities of an additional \$2 billion is expected for the same period. Installations of these packaged cogeneration systems at small business and institutional sites have increased at an impressive rate each year since 1981. As noted in the Cogeneration Coalition's Comments filed with the New Jersey DOE in July, 1985, up to 40,000 such systems could be installed by the end of the century, including, 9,000 in hospitals and nursing homes, 1,000 in car dealerships, 5,000 in apartment buildings, 4,000 in stores and offices and 2,500 on farms.

The Energy Master Plan. The Master Plan's critical features affecting cogeneration project development are necessary and appropriate at this time to encourage cogeneration development in the State of New Jersey. In our

comments before DOE, the Cogeneration Coalition emphasized the importance of cogeneration to the State's overall economic development. In addition, we suggested that DOE focus on several specific areas and issues necessary to provide the long-term stable environment necessary to achieve the development goals for the State of New Jersey as articulated in Master Plan. New Jersey's efforts could be guided by the experience of states such as California and Texas where cogeneration is currently contributing to those states' economic development plans, as well as by actions being taken in Massachusetts, Connecticut, Florida and Michigan among other states, to encourage cogeneration development. The Cogeneration Coalition noted that such an approach would ensure better penetration of cogeneration development consistent with New Jersey's long-term planning goals and objectives, of creating an attractive environment for the industrial and services companies within the State and an appropriate mix of additional power sources for use to the benefit of electric utilities, their customers and consumers.

The New Jersey Energy Master Plan, adopted on December 12, 1985, goes a long way toward achieving the important goals referenced herein. Among the main solutions proposed by DOE in the Master Plan is the promotion of full state-wide development of non-utility electric power through cogeneration and small power production. New Jersey took a step in this direction when the BPU adopted certain cogeneration orders in the Fall of 1981, requiring electric utilities to buy cogenerated power at rates equal to the avoided cost of buying power from the surrounding electricity grid (the "PJM grid") plus a capacity payment based upon the grid system. The BPU also added on a 10 percent premium to the price of cogenerated energy ("PJM Plus 10") in light of the extensive societal benefits of cogeneration, including its capacity of burning solid waste and reducing other environmental problems such as acid rain.

Through the adoption of the Master Plan, New Jersey has gone a step further to promote cogeneration so that it can take its place on an equal basis with other, more traditional, methods of power production in the State. In the Master Plan, the DOE identified problems and set out policies in areas that affect the development of cogeneration such as buy-back rates, back-up power rates and access to back-up power, wheeling rates and access to utility transmission lines, unequal bargaining power and the standard offer contract, access to natural gas, environmental permit procedures, and planning to avoid a glut of power.

The Need For Action. As noted by DOE, the Master Plan provides much-needed guidance for the future of cogeneration in New Jersey. The Master Plan is intended to show other departments and agencies in the State with jurisdiction over cogeneration how to use their power to promote its widespread use without sacrificing other public concerns. How the agencies respond to this plan is, therefore, critical to the success of cogeneration. The Department of Energy Act authorizes the department to adopt a State Energy Master Plan which agencies must implement to the "maximum extent practicable and feasible" (N.J.S.A. 52:27f-15b). To assist each instrumentality in complying, the DOE may prepare "such guidelines as the Department determines to be relevant" and helpful (Id.).

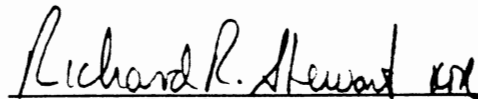
The Commissioner of DOE determined that the cogeneration policies and the textual explanations in the Master Plan are sufficiently precise that no additional guidelines are needed at this time.

The development of cogeneration and small power production facilities in New Jersey can make a significant contribution toward achieving New Jersey's energy and overall economic goals. All that is needed to bring this opportunity to fruition in New Jersey is the timely implementation of the Master Plan. Any unnecessary delay in implementing the Master Plan occasioned by the proposed reorganization of DOE would be counterproductive to the goals of the Master Plan and the interests of the State of New Jersey. The uncertainty created within the industry by such delay could have a serious chilling effect upon the development of cogeneration in New Jersey as industries and developers look elsewhere for potential cogeneration sites. In this respect, we note that the Master Plan directs the Board of Public Utilities (BPU) to commence a proceeding to establish new rates for cogenerated power within ninety days of adoption of the Master Plan (i.e. by March 11, 1986). The Cogeneration Coalition, therefore, urges you to actively monitor the proceedings before the BPU mandated by the Master Plan and urges that you take such other action as you deem appropriate to ensure that implementation of the Master Plan is not delayed in the coming months.

Thank you for the opportunity to provide this statement. We would be happy to provide additional information or assistance to you and your Staff in the future.

Respectfully submitted,

THE COGENERATION COALITION
OF AMERICA, INC.



Richard R. Stewart
Chairman

