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**PART 3, VOLUME I
NATIONAL ENERGY ACT**

**HEARINGS
BEFORE THE
SUBCOMMITTEE ON ENERGY AND POWER
OF THE
COMMITTEE ON
INTERSTATE AND FOREIGN COMMERCE
HOUSE OF REPRESENTATIVES**

NINETY-FIFTH CONGRESS

FIRST SESSION

ON

**H.R. 6831, H.R. 687, H.R. 1562, H.R. 2088,
H.R. 2818, H.R. 3317, H.R. 3664, H.R.
6660, and all similar and identical bills**

**BILLS TO ESTABLISH A COMPREHENSIVE NATIONAL
ENERGY POLICY**

MAY 19, 20, 23, AND 24, 1977

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1 the desired degree of reliability) as he determines is
2 appropriate; and
3 (4) provide on a formal or informal basis such
4 appropriate technical assistance as is requested by a
5 State regulatory authority, electric utility, or nonregu-
6 lated utility.

[The text of H.R. 6831 appears in part 1 of these hearings.]

Mr. OTTINGER. We are very pleased to have with us this morning another man who has been deeply involved in this subject, as the Environmental Commissioner for the State of New Jersey, and now the Deputy Administrator of the Federal Energy Administration in Washington, the Honorable David Bardin.

David, if you would introduce the two gentlemen you have with you, one of whom looks quite familiar, we would be pleased to have your statement.

**STATEMENT OF DAVID J. BARDIN, DEPUTY ADMINISTRATOR,
FEDERAL ENERGY ADMINISTRATION, ACCOMPANIED BY ROB-
ERT F. HEMPHILL, ASSISTANT ASSOCIATE ADMINISTRATOR
FOR CONSERVATION POLICY; AND ROBERT NORDHAUS, OFFICE
OF ENERGY POLICY AND PLANNING, EXECUTIVE OFFICE OF
THE PRESIDENT**

Mr. BARDIN. Mr. Chairman, the stranger at my right, your left, is Robert Nordhaus, member of the energy policy staff in the White House. At my left, your right, is Mr. Robert Hemphill, the Associate Assistant Administrator for Conservation Policy at the Federal Energy Administration. They and other members of the staff who are with me here in the room today have the expertise to supplement as need be the remarks and information I am able to supply, and answer to the committee's questions.

It is indeed a pleasure to appear before this subcommittee and you, Mr. Ottinger, because we appreciate the leadership that Chairman Dingell, the members of the subcommittee and you, have exercised over the years in pointing out the problems we are discussing today. Helping to find the way to new directions, to new solutions, to growing, serious problems.

The electric utility industry, specifically the natural gas industry, other utilities more generally, have problems today in the changing economic climate which simply have to be addressed. The legislation we are dealing with is perhaps more than most geared to enable the utility industry, and those who regulate the utility industry at the State level, to perform at their best in solving the problems by removing impediments.

I will have a detailed statement covering the entire subject matter of these hearings that the subcommittee has scheduled which I will submit for the record at the appropriate time.

Mr. OTTINGER. Without objection, that will be included in the record.

Mr. BARDIN. Today, I would like to provide an overview of those aspects of the national energy plan that President Carter has submitted which are directed at improving both the energy and economic efficiency of the natural gas and electric utilities of the Nation.

I will not reiterate the need for a comprehensive national energy program or the rationale for those specific proposals which are not directly relevant to today's hearings. But, let me emphasize that the proposals you have under consideration today are part and parcel of and should be viewed in the context of the entire national energy plan which President Carter has proposed.

For example, efforts to encourage increased energy efficiency and coal conversion through tax credits and through selected regulatory measures must be coupled with appropriate energy pricing and rate structure reforms, which are those under discussion today, in order to be fully effective.

Similarly, the insulation incentives which arise in other portions of President Carter's proposed legislation will work together with the measures we are discussing today to help reduce the peak loads that the electric utilities experience. Particularly the peak load in the summer air-conditioning period.

So, the relationship among these proposals that President Carter has made should always be taken into account.

The utility industry is our country's largest, measured in terms of capital investment. Historically, utilities have also been one of the most rapidly growing industries and until very recently one of the most stable industries in the United States.

It is worth thinking back. One hundred years ago there was no electric utility industry, in this country. There was a gas utility industry which was entirely different from what we have now. It was a gas lighting industry.

Over a series of decades a group of pioneers, geniuses, Thomas Edison, and others, built up an industry from scratch. They built it up through a combination of engineering and technological genius, represented by Thomas Edison, and by acute financial acumen, represented by his secretary, Samuel Insuli. They learned the tricks, the techniques of how to market electricity. In doing it, particularly around the turn of the century, they developed the institutions of utility rate design which have been with us almost to this day.

These institutions were a set of promotional rate devices which were suitable to encourage greater use of electricity at a time when expanding the usage base meant a chance to build more generation on a larger scale, and a lower unit cost.

This kind of promotional expansion in the early days of the utility industry was a successful effort to achieve economies, both from the point of view of the profitability of the corporations involved and either through competition or regulation, ultimately regulation, for the benefit of the consuming public.

For several decades in this century steady and, in much of the century, declining real prices for electricity and natural gas combined with convenience and cleanliness of use, as well as the general economic growth of our economy, spurred increasing demands for these electric and gas energy sources.

The share of the total national energy demand accounted for by electricity and gas increased from 31 percent in 1950 to about 52 percent in 1975.

The conditions which prevailed until the start of this decade, and which supported these historical growth trends, no longer prevail. So, utilities are providing service in a changed economic environment. The country must move quickly to adapt to these changes if we are to avoid dislocations and error by the inertia of continuing to do business too long under outmoded methods.

The most important of the realities are these. Abundant domestic supplies of low cost natural gas are a thing of the past, and no longer available. Limitations of domestic production have forced extensive curtailments during the winter months when demand is high. Winter is the peak, the highest peak of the year for many utility systems, for all the natural gas systems. It is a significant peak even for those electrical systems which have their highest peak in the summer.

The cost of imported oil has risen dramatically, and the risk of supply interruption now concerns us. Some of our utilities have already become dependent on imported oil sources.

Rising fuel costs have seriously affected electric utilities. This has brought into sharp focus the way in which imbalances or inequity of the rate structures impact upon electric consumers. Our constituents are aware as never before in recent memory, and they raise questions and have doubts about the electric rate structure.

The costs of added base load generating capacity have more than doubled in the past decade. It is no longer generally true that utilities can lower their overall costs by building large, new powerplants.

This is simply a fact, that the engineering profession has apparently squeezed out the economies that can be squeezed out in the per kilowatt per unit of capacity design of powerplants. We are now at a point where each new unit of capacity, each new increment of capacity, is costing more, and raising the average cost rather than costing less per unit as it has historically from Thomas Edison's time up to the very recent past.

Finally, peak loads have risen faster than total consumption, stimulating the need for new powerplants and prompting rate increases. The average load factor, the ratio of average load experienced by utilities to peak load, has declined in the most recent years. The history of the electric utility business ever since Samuel Insull identified high load factor shows the key to high profitability has been to raise load factors.

For many years there had been success. Then the air-conditioning revolution overtook this country. With it came a shift to a much faster rise in peak loads.

Interestingly, in the early period, when air conditioning first came in, it brought an increase in load factors because it offset the

winter peak by creating a second peak. This led to better utilization systemwide and, therefore, increases in the economic profitability of utility systems.

Now as this summer peak has overtaken the winter peak in system after system, we have had a steady decline in load factor. For example, in New Jersey utilities load factor has declined for quite a few years—nationally, this is true for the most recent years.

To meet this peak demand, utilities have had to use less energy efficient generators, which rely largely on natural gas and oil, including the gas turbine peak generator, and simply the use of older, less efficient oil burning plants.

Let me emphasize that these conditions are not temporary problems that can easily be overcome. Rather, they reflect a fundamental change which has overtaken the economics of the utility industry. This change is affecting every consumer of electric energy in the country. Successful adaptation seems critical therefore to the Nation's energy future, and our economic well being. It will require adjustments, extensive adjustments, in regulatory policies and practices governing the industry and, more important, in the operation of the industry itself.

Forward looking State regulatory commissions have recognized these problems. They have moved aggressively towards some of the same solutions which we seek by the legislation before you today. Thus, actions of New York, Wisconsin and California seem particularly noteworthy. Moreover, certain utility corporations have been in the forefront of experimenting with new rate forms.

Both the Los Angeles Department of Water and Power and the Public Service Gas and Electric Company of New Jersey have participated in rate reform demonstrations sponsored by the Federal Energy Administration.

The Wisconsin Public Service Company has moved on its own toward time-of-use pricing. So-called peak load pricing encourages the consumer to purchase more of his power needs off peak, by offering him a rate incentive, and a choice. A choice which more and more utilities have offered, at least to some of their customers, a choice which we suggest ought to be offered across the board.

I would like to illustrate with just two demonstration materials that we brought with us.

In the chart on the easel, we have graph data from two Connecticut sample groups, these are customers of Connecticut Light and Power Company who are testing in their own home residential applications—this is not fancy commercial or industrial situations, but just in-home use—they are testing the concept of using more of their electric appliances off peak.

The hours are shown on the bottom as running from 1 to 24; that is, from midnight to midnight. The system peak would be in the middle hours, around 10, 11, noon and going on to 3 and 4.

The black line—that is to say, the upper line on the bar graph—represents the control group. The control group has no opportunity to save money by charging the time it uses electricity. It is being charged the same price per kilowatt hour morning, noon and night. The lower line is the test group; that is the red line. They have the opportunity to pay less if they use more of their power needs off

peak, if they run the dishwasher, the clothing unit, if they shift their air conditioning use a little bit, so they run more of their appliances off peak.

You will see there is a substantial gap in the use. An actual shift in load has taken place in the test group. The load is the kilowatt—not kilowatt hours, not total energy—but the kilowatts. They are now imposing demands on the generating facilities of the utility, at different times of the day. The control group was buying under ordinary circumstances, and are imposing their demands throughout the late afternoon and evening hours. The test group are imposing much less demand in those periods.

This makes space available, as it were, for the commercial customers of that same utility to use electric power during the daytime business hours, with a better overall load factor, a more efficient utilization of the electric generating plant of that utility, Connecticut Light and Power.

Now, you can ask, why don't we do it everywhere. Let me just show you something that to me illustrates why.

Here is a meter, a standard electric meter that has been sold for years and years all over the country. It is mass manufactured by one of the biggest companies in the business. You can see afterwards its name on the name plate. It costs about \$40. It has in it a single set of metering devices which go 24 hours a day.

Here is an article of commerce which is available in small numbers, but commercially available—you can get a price quoted—for insertion in that same kind of meter, as a substitute for the measuring device. You will see that the little insert has both red and black meters. It is exactly the same technology for metering that you use, except you alternatively meter on peak, which is red, or off peak, which is black. It is attached to some kind of timing device. It could be the little clock timer which people use to turn lights on and off in their homes automatically, or any other timing device.

Now, this little insert today is quoted by the manufacturer at a price of \$75, almost twice what the total meter costs. What is the reason? It is very simple. We are not yet at the point where we are manufacturing this little insert. Much less, are we at the point where we are applying our technological capacity and know-how to design a time of day metering system which is a better mousetrap.

After all, this mousetrap simply takes the old thing and divides it into two pieces with a switch back and forth. When we apply our technological genius, we will undoubtedly come up with something which is entirely better.

Now, in my judgment, gentlemen, the legislation which is before you today reflecting the efforts of this subcommittee and its chairman over many months, and the proposal of President Carter April 20, is simply enabling legislation, which will send the signal out to America that we want that change made, we want it made innovatively, imaginatively, creatively.

Let's apply our technology across the country to do it in a cost effective and efficient way. If you in the Congress send that signal out, I truly believe that American technology, American utilities, American state regulatory commissions, will follow through—each

a little bit differently—but will follow through to translate that general signal into a cost effective action to make better use of our electric utility plant.

The bill before you would stimulate consistent progress across the Nation in the direction of need shown by the States and the individual utilities that have gone ahead.

What would the bill do? It would require electric utilities to abandon declining block rate structures. These discounts for the largest use were initially instituted to encourage greater electricity consumption during a period when expanding production actually reduced overall costs.

These declining block rate structures made very good sense at one time. Most students of the industry now realize that the changing economic conditions of the industry, which I have described, mean that costs do not decline with increasing consumption.

The bill would require that over a period of time all utilities adopt rates which take account of costs that differ by time of use, and that the rate structures thus generally reflect the actual costs of service. Most major utilities have adopted some form of rates which charge more during those times of the year when demand for electricity is highest.

In New Jersey, for example, one utility as early as 3 years ago offered this kind of feature at least for some of the big customers in the industrial and commercial class. The utilities that have made these reforms already have rate structures which better reflect the actual costs of service. Time-of-use rates, which reflect the changing costs of providing electricity on a daily basis, are potentially even more equitable than the ones that simply reflect the seasonal differences, summer versus fall, winter versus spring.

When demand is highest, usually from late morning to early evening—although that may vary with the utility and the region of the country, geographic and economic particularities, but when the demand is highest—customers would be charged a higher rate to reflect the added costs of the peaking capacity required only to serve demands during this period.

Similarly, those who used electricity from late evening until early morning, when demand is less, would be charged a substantially lower rate.

Another feature of the bill would direct utilities to make available time-of-use rates or load management devices, actual control equipment, to all customers on a voluntary basis.

Time-of-use rates can be combined with a variety of techniques to control or lower a customer's use of electricity during times of peak demand. Time-of-use rates, a peak load pricing technique, together with selected load management practices, not only would more equitably distribute the costs of electricity among all customers, but would also reduce overall utility costs by lowering peak demand and reduce the need for generating capacity.

Now, let me emphasize that there are factors at work on the utility industry as a whole which are tending to raise their overall costs, and forcing increases in rates. But, more efficient use of that electric utility plant will slow down the increase in rates, will tend to check the increase in rates, will make a better economic use of

what we as a country have in the way of investment in the utility plant.

Further, the bill would provide general comprehensive authority for the Federal Power Commission to order interconnection, wheeling, and power pooling. These authorities are necessary to insure competition, and economic efficiency in the bulk power market. They would enable interconnection of those few systems not now interconnected, providing access to bulk power for purchasers not directly tied to sellers, and stimulating the use of centrally dispatched electricity on a regular basis—a mode which already covers close to 40 percent of the electricity in the country, and could be extended.

Centrally dispatched systems have the advantage of being able to make the most economically efficient use of all the generating capacity available within a given system, group of utilities in the power pooled area.

The bill further would provide authority for the Administrator of FEA to insure that utilities buy and sell electricity at nondiscriminatory rates to industries that could generate electricity and provide authority to the Federal Power Commission to order utilities to allow such industries to interconnect with the utility system, and to wheel their excess power to other utilities when necessary.

Cogeneration—that is to say, generation of both industrially processed steam and electricity in the same facility, rather than in two separate facilities—can double the efficiency of separately generating industrial process steam and electricity. The use of cogeneration has been hindered by economic, institutional and regulatory barriers which the proposed new authorities would overcome.

The bill would direct that natural gas utilities replace their declining block rate structures, their discounts to large volume users, with other rates which more accurately reflect total cost. The discount imbedded in declining block rate design was instituted during a period when natural gas supplies were plentiful and there was a need to spur demand to justify the high initial investment costs of bringing natural gas to consumers. But, that period has passed, as last winter so graphically demonstrated.

Now, these are truly significant and far-reaching reforms, Mr. Chairman, and I believe that we share a widespread belief, both as to the need for such reforms and the general direction they should take. The question remains, should there be national legislation to prod and stimulate towards those reforms.

In our judgment, national legislation is necessary, for several interrelated reasons.

The individual State endeavoring to adopt these reforms is likely to be subject to intense pressure from those benefiting from the current system. Many State regulatory commissions are deterred from implementing rate structure reforms because of concerns that the State will be thereby placed at a comparative economic disadvantage in relationship to industry attraction by other States.

If all States are required to move in an essentially consistent fashion, that concern will diminish.

Thank you very much. I would welcome any questions that the committee has.

[Mr. Bardin's prepared statement follows:]

STATEMENT OF DAVID J. BARDIN, DEPUTY ADMINISTRATOR,
FEDERAL ENERGY ADMINISTRATION

Mr. Chairman and members of the Subcommittee, it is a pleasure to once again appear before you to discuss components of the President's proposed National Energy Act. Today I would like to provide an overview of those aspects of the national energy plan that are directed at improving both the energy and economic efficiency of the Nation's natural gas and electric utilities.

I would like to emphasize that the proposals you have under consideration today should be viewed in the context of the entire national energy plan as proposed by the President. For example, efforts to encourage increased energy efficiency and coal conversion through tax credits and selected regulatory measures must be coupled with appropriate energy pricing and rate structure reforms. There is an important relationship among the proposals the President has made in this regard which should always be taken into account.

Prior to discussing the specifics of Title I, Part E of the National Energy Act, which is the subject of today's hearing, I would like to provide a brief perspective on the utility industry.

average cost of electricity generated from new plants is higher than the average cost of electricity generated from existing plants. Thus, rates that promote the increased consumption of electricity, particularly during periods of peak demand, will raise the average cost of electricity and cannot be cost justified. One significant benefit of the conservation aspects of this and other parts of the National Energy Act is that reductions in electricity consumption reduce the need for new capacity which result in a reduction of the average cost of electricity below what it would have been without the conservation measures.

During the course of a day, the demand a utility is called on to meet varies considerably. The utility meets the load by using essentially three different types of generating equipment: peaking, cycling and baseload. As the name implies, peaking equipment is operated over the short intervals of time when the utility's load is the highest. Because this generating equipment is only used a small fraction of the time, utilities tend to purchase peaking capacity that has the lowest capital costs even though it is least energy efficient and is generally fueled by oil or gas.

In 1976, all fossil fuel plants that operated approximately 25 percent of the time or less consumed an average of 22 percent more fuel for each kilowatt hour they generated than plants operating 50 percent or more of the time.

Further, 76 percent of the kilowatt hours generated from these plants were derived from oil or gas.

Because the generators that satisfy peak are less efficient and use higher priced fuels than baseload generators and must amortize their capital cost only over the limited time they operate, the cost of generating electricity is higher during peak hours than during the off-peak hours. For the most part, present utility rate structures are not time differentiated, resulting in off-peak users subsidizing on-peak users.

By charging higher prices at the peak when the costs of generating are the highest, several important goals are achieved. First, economic efficiency is increased by eliminating the implicit subsidy for peak users in today's rates. Second, some demand will be shifted from the less efficient oil-fired peak generators to the more energy efficient predominately coal and nuclear fueled baseload generators. This yields a savings in total energy and even more savings in oil and gas consumption. Third, the utility can better utilize its capacity and, therefore, would require less capacity to generate a given amount of kilowatt hours of electricity and, to the extent that the electricity is generated with coal or nuclear, the fuel costs would also be lower. All of these factors combine to lower the average cost of electricity.

by-product. That byproduct heat generally goes to waste, since in almost every case the latent energy in the spent steam exhausting from the turbines is not now productively exploited. Because steam lines are expensive, this latent energy usually cannot be economically used unless the place where the electricity is generated and the place where the spent steam can be used are in close proximity. Further, maximum economies can only be realized if the time demand for the steam and the electricity can be matched. The ideal situation rarely exists within a given industrial plant. Therefore, cogeneration is most economically attractive when the industry can sell its excess electricity and buy additional electricity when it is required. The energy efficiencies of cogenerating process steam and electricity can double the efficiency of separate generation.

Industrial cogeneration of electricity and useful thermal energy is not a new concept. It is rather a concept that, because of changed energy economics, is ready for a revitalization. In 1950, 15 percent of the electrical energy was generated in conjunction with industrial processes, but currently this figure is only 4 percent. Low fuel costs of the past allowed utilities to aggressively promote rates designed to lure industrial customers away from self-generation.

STATEMENT OF ROBERT W. FRI, ACTING ADMINISTRATOR
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to share with you some thoughts on the future use of electricity in this country.

Because it is so convenient and has so many applications, the use of electricity in the U.S. has expanded dramatically throughout most of this century. The American utility system has responded to growing demand by supplying services unexcelled anywhere in the world. And, until the last few years, it has done so at a declining real price. The combination of convenience, excellent service, and modest cost to the consumer has had impressive results, for electricity has grown at about twice the rate of total energy.

But now the winds are shifting. Even though electricity is clearly convenient from the users' point of view and is efficient in most end-use devices, its generation encompasses an inherent inefficiency. When a single unit of energy is consumed, for example as electricity in a stove, a light, or a motor, three units of energy must be burned in an electric generating plant. Thus, for every Btu of electricity saved at the using end, three Btu's of primary fuel are saved back at the power plant. It is thus apparent that the conservation of electricity can be an impressive multiplier for the conservation of primary fuels.

Now it turns out that two such fuels, oil and natural gas, produce some 35 percent of the electricity in this country. Since a major objective of the National Energy Plan is to reduce their consumption, savings at the power plant become particularly important.

More specifically, oil and natural gas are the principal fuels used in generating peaking power to meet short duration load demand. Peaking power generators are less efficient than base load generators. Because the capital cost should ideally be amortized over the limited time they operate, the cost of generating electricity is higher during peak hours than during off-peak hours. But most electricity utility rates are not time-dependent, meaning that peak-load electricity consumers pay the same as those who rely on off-peak or base load power.

This situation is at the heart of the economic efficiency problem faced by utility operations. For one thing, managers have no means of coercing their customers to take energy conservation measure and thus avoid the requirement for additional generating capacity. Moreover, customers lack the incentive to reduce peak demands because they are not required to pay the real cost of the production of the electricity to meet them. The President has addressed this problem in the National Energy Plan by proposing the enactment of comprehensive utility reform legislation requiring the phase-out of promotional declining block and other utility rates that do not reflect costs. Under the plan, electric utilities would be required to offer daily off-peak rates. Differential off-peak and high peak rates would consequently provide a strong incentive for customers to shift from peak to off-peak usage. The President's proposal would shift demand from less efficient oil and gas fired peak generators to more efficient coal and nuclear base-load generators.

Not only would energy as a whole be saved, but more importantly, the use of oil and natural gas would decline. The result of this would be a flattening of utility load curves. The flatter these curves are, the more efficiently utilities can operate and the less capacity they require to generate a given amount of electrical power.

Another option for reducing peak demand is load management. The ERDA Load Management Program addresses both near and long term systems efficiency. This can only be accomplished by analyzing the impact of and combining the best features of direct and indirect control, customer storage, utility storage, and improved system interconnections.

ERDA is now working on the following projects within the load Management Plan:

- o Two demonstrations of two-way communications systems vital to load management and system automation.
- o Analysis of direct load control for non-generating (usually rural) utilities.
- o Impact of dispersed generation and storage on the electrical delivery system.
- o Creating a RF model of the power distribution lines to study communication alternatives using electric conductors.
- o Noise analysis of the power lines to determine frequency spectrum of existing noise.
- o Analysis of the European experience on load management, identifying original motivation, economics, effects, etc.

Actions that reduce peak demand and encourage the cogeneration of electricity and process heat in industry will serve to reduce the future growth rate of electricity. It is estimated that the growth rate of electricity can be reduced from the historic 7% to about 4 to 5% per year between now and 1985. In the period from 1985 to 2030, the growth rate of electricity is anticipated to decline even more, to something between 3% and 4% per year.

Such declining growth rates arise in part from prediction that the use of electricity will saturate more and more applications in the years ahead. As this happens, demand growth for electricity must eventually approach that of total energy. We have always known this was going to happen sometime, and it behooves us to recognize that this is happening and we should account for it in our planning. In view of this likely decline in growth rate, we think it particularly important to expand the role of utility industry, as proposed by the President, into additional energy areas such as becoming a focal point for the localized introduction of conservation technologies. Indeed many utilities have already begun programs in this area. Already, we are beginning to see a fundamental change in the growth of electricity as we set about to altering our total energy use patterns.

Mr. Roger LeGassie, Assistant Administrator for Planning, Analysis and Evaluation and I will be glad to answer any questions.

Mr. DINGELL. Thank you.
Mr. Costle?

STATEMENT OF HON. DOUGLAS M. COSTLE

Mr. COSTLE. I will make just very brief remarks, Mr. Chairman. We strongly support at EPA the National Energy Plan, and particularly are pleased with the fuel emphasis of energy conservation, to accompany increased coal production.

One of the basic tenets of the plan is the increased utilization of domestic fuels must be accompanied by strong efforts to both conserve energy and by stringent endorsement of environmental controls.

In addition to decreasing dependence on foreign sources of energy, the conservation elements of the plan clearly imply more efficient use of the resources that we will need to use, and just inherent in that will be less waste, and, therefore, less environmental damage.

I think I arrived early enough to hear a great part of Mr. Bardin's testimony this morning, and he covered a lot of the points that I would also make.

I think load management is one of the real opportunities for reform in this area, and while recognizing it is a difficult and complex issue, it is well worth pursuing all the way to an end result.

I think with that, Mr. Chairman, with your permission, I will submit the formal remarks for the record.

Mr. DINGELL. I think that would be entirely appropriate.
[Mr. Costle's prepared statement follows:]

TESTIMONY OF DOUGLAS M. COSTLE, ADMINISTRATOR
OF THE U. S. ENVIRONMENTAL PROTECTION AGENCY
TO THE SUBCOMMITTEE ON ENERGY AND POWER
HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
MAY 19, 1977

Mr. Chairman and members of the Subcommittee:

I am Douglas Costle, Administrator of the U.S. Environmental Protection Agency. I am accompanied today by James M. Speyer, Director of EPA's Energy Policy Staff. I am grateful for the opportunity to appear before this Subcommittee during its consideration of the proposed National Energy Act, an important piece of legislation from the standpoint of environmental protection.

In my testimony today I will discuss Part E of the Act, the section containing proposed changes in regulatory policies affecting electric and natural gas utilities. The changes in regulatory policies suggested by this section are extensive and would affect utility rate structures, energy use patterns, and the amount of fuel and generation capacity that will be required in the future. The proposed measures are designed to encourage conservation and to improve the efficiency of energy use.

The U.S. Environmental Protection Agency strongly supports the National Energy Plan, with its dual emphasis on conservation and increased coal production. One of its basic tenets is that

increased utilization of domestic fuels must be accompanied by strong efforts to conserve energy and by stringent enforcement of environmental controls. We are therefore quite pleased with the conservation-inducing features contained in Part E of this Act.

In addition to decreasing dependence on foreign sources of energy, conservation implies more efficient use of our resources and means that we will suffer less environmental damage. Reduced energy use allows us to do less strip-mining, subsurface mining, and oil drilling, with their attendant negative consequences -- soil erosion, siltation, subsidence, and the generation of solid waste. Less mining activity means there will be less acreage to be reclaimed and fewer waterways to be cleaned up. Less mining and drilling activity also means that there will be fewer tons of energy raw materials to transport. Thus, there will be fewer oil spills and less opportunity for diversion of nuclear material.

By restraining the growth of energy demand, there would be other direct benefits for environmental quality. Less sulfur dioxide, nitrogen oxide, and particulates would be emitted into the atmosphere. Due to decreased chemical and thermal pollution, fewer rivers would be spoiled for wildlife, recreation, and other purposes. The environmental benefits from reduced energy use are very important because, even with the best available controls, nearly all modes of producing, transporting, and using energy can cause some environmental damage.

Part E of the National Energy Act would promote the efficient use of electricity and natural gas through utility rate reform. Conventional utility pricing policies discourage conservation by providing preferential rates to the largest consumers of energy. Practices such as declining block rates are incentives to wasteful patterns of energy use. The smallest users end up paying the highest unit rates, while the largest pay lower and lower rates as they purchase more energy. The result is a rate structure that does not reflect the true costs imposed on society by each category of users--residential, commercial, and industrial. Some consumers clearly pay less than the true costs of generation, particularly during times of peak energy use. This system results in incentives to use more rather than less energy. It leads to unnecessary environmental degradation and should be discouraged.

The proposed legislation would require the phasing out of promotional rates. It would lead to the establishment of rate structures based on actual costs, reflecting differences in the cost of service to different categories of users. Rates would also differ based on the time of day and seasonal patterns of demand. The cost of an additional kilowatt-hour of electricity would be the same for large and small users. Thus, the largest and smallest consumers in a given category would have equivalent economic incentives to minimize their use of energy.

The bill would also require that master-metering -- the use of a single meter for a multi-unit building -- be generally prohibited on new

structures. Individual metering, which would be provided instead, might be expected to lead to increased conservation, in some cases by as much as 30 percent, as consumers would more directly bear the costs of their energy use. This is another measure that we hope will be adopted.

The proposed legislation contains several additional features that are designed to reduce energy waste and inefficiency. Utilities would be required either to offer daily off-peak rates to each customer who is willing to pay the extra metering costs or to provide a direct load management system. Such a system would enable users to draw energy during off-peak hours for use in peak times. Off-peak rates would also encourage industrial and, to a lesser extent, residential users to shift their energy use to periods of lower energy demand.

The proposed legislation contains three additional measures that would encourage better load management. First, electric utilities would be required to offer lower rates to customers who are willing to have their power interrupted during periods of peak demand. This measure would have effects similar to off-peak pricing -- it would enable a utility to perform satisfactorily with a lower level of peak capacity than is now required and would encourage users to shift their energy use to periods when capacity is under-utilized.

Second, it would authorize the Federal Power Commission to order individual utilities to establish interconnections and power pools with other utility systems. This would allow utilities to take advantage

of situations where some systems face peak demand during the summer months while others face it during the winter. Greater use of interconnection and power pools would also make the systems more reliable, thereby reducing the need for back-up or reserve capacity. The net effect would be to reduce the new capacity that these utility systems would have to build in order to provide their customers with an adequate and reliable supply of electricity.

The third measure that would encourage better load management is increased reliance on cogeneration. Under the Plan, the FPC would be granted rule-making authority to provide institutional mechanisms for increased use of waste heat. It is estimated that such measures could enable the United States to increase substantially the amount of total energy from cogeneration. In the United States, only 4 percent of the total supply of electricity is the result of co-generation by industry, whereas in West Germany approximately 14 percent of electrical generation is due to cogeneration with industrial facilities.

The changes in regulatory practices contained in Part E, combined with the other conservation measures in the Plan, would be very beneficial from an environmental point of view. Reduced energy

response to our Order 383-4, tends to support that conclusion. Upon publication we will submit the report to the committee.

Although projections of rate of increase of electricity usage show a significant decline for the period 1977-86 from the rate of increase experienced in earlier decades, projections of generating capacity construction also show a decline.

The report concluded that additions to the bulk power supply system planned by the Nation's utilities will be adequate to meet demand through 1985 only if electricity usage does not exceed the reduced levels now projected, if the projected level of generating capacity construction is attained, if fuel requirements are met, and if no more than the normal contingencies are experienced.

However, we are not confident that the growth rate of electricity demand can be contained within the next 4 or 5 years; we are not confident that the problems of fuel supply can all be solved, and we have good reason to doubt that generating capacity will be completed as needed.

This report, as I pointed out, was submitted and prepared finally in January of 1977. So it precedes, of course, the President's proposal for a comprehensive energy plan, and it has to be viewed in that context. Quite obviously, the proposals the President has made reflect recognition of that total overall problem, and has specific proposals in an attempt to get a handle on it.

Although it is assumed that the national appetite for electricity will be curbed by legislation now under consideration by Congress, there are no data available to predict whether usage will indeed decrease. There is no way to predict the magnitude of the reduction in the growth rate of electricity use, if any.

Fuel supply sufficient for all existing and projected generating plants is by no means assured. Hydroelectric facilities, which currently constitute 12.8 percent of the Nation's generating capacity, are subject to vagaries of the weather.

The drought condition existing in the Western States illustrates the reduction in generating capacity that can occur with respect to hydro plants. The phasing out of natural gas as a fuel for steam-electric plants not only reduces the fuel available for future generating units, but curtails the operation of existing plants that were not designed for the use of fuels other than natural gas.

In addition to delays in generating unit construction caused by "fossil" fuel problems, there looms the shadow of nuclear plant curtailment.

Mr. Case already referred to the changes in regard to delays or cancellation of nuclear plants that have occurred in the last year, and there have been some additional reductions since the report I referred to was prepared, which causes a greater problem or may cause a greater problem.

The utilization of raw reserve capacity data is somewhat misleading because it fails to take into account the unavailability of reserves at time of peak for scheduled maintenance, forced outages and other "unavailable" situations. Our figures indicate the fact that total "usable" reserves during the winter 1976-1977 were substantially less than the indicated installed reserve.

In my experience, this reserve margin is a misunderstood statistic which a lot of us have used. One of the difficulties we have is that

the reserve margin figures used are usually nationwide figures. That does not mean that any particular regional situation may not be operating at close to 100 percent. In fact, last winter, in the period January, February, and March where we had critical energy supply problems, because of the publicity given to the natural gas shortage situation, it was less evident, I believe, to the public, the very severe strain that was put on our electric supply system, and particularly in the Northern, Midwestern parts of the country.

In fact, the Southeastern area was using well over 100 percent of their capacity, there was no reserve. Electricity was transmitted from the Northeast power pool, which was in relative surplus at that time and there were, in fact, voltage reductions in many of the cities throughout the country.

I think that is a point overlooked when we use terms such as there is a "reserve margin" of 30 percent or 25 percent, or some other fact like that. It does not take into account that these reserves are not always available because of outages, down times for maintenance and various other factors of peak demand caused by either the weather or other factors.

The legislation before you proposes remedies by increasing the efficiency of energy resource use in the generation and transmission of electric power, and the reliability of electric service, through greater use of interconnection, wheeling, economic dispatch and cogeneration.

These remedies will be helpful in assuring effective use of resources on a regional and interregional basis, but by themselves they will be inadequate to assure sufficient, continued, reliable power supplies.

Carefully planned transmission arrangements within individual systems, interconnections between systems and interconnections between regions are certainly of great value for the economic utilization of all generating capacity, for utilization of load diversity and for transfer of power in emergencies.

However, an increase in transmission facilities cannot make up a long-term large-magnitude capacity deficiency and our view is that such deficiency could well come about.

While it is important not to overlook any sources for additional supply of electric energy, the magnitude of capacity that could be made available at the present time from cogeneration sources is small.

This is not to say this is not an important element, because each ingredient of additional supply that can be made available through increased efficiency, through cogeneration, through many other relatively small supplies, is important and very important at the margin. They are not in themselves the total answer.

As another remedy to the potential electric energy supply and demand problem, both the National Energy Act and the Electric Utility Act of 1977 seek to promote conservation of electric energy and improved system load factors by prescribing minimum standards and national policies with respect to electric rate designs.

Both bills require consideration of marginal costing in cost determination methods for setting utility rates. Such rate design standards if successful may reduce the peak load demand and improve

system load factors and should be encouraged, but much more evaluation of data is necessary in order to quantify just how much we can count on dampening peak demands through rate design.

However, to the extent that changes in rate design can assist in cutting peak demand growth, it is a potential tool in our ability to meet our future electric growth in the most economical way possible.

As a solution to any overall supply and demand inadequacies, the proposed legislation appears in the main directed towards reduction of electric power use, encouragement of transmission facility construction and the use of cogeneration as methods of meeting the need for reliable power supply.

These approaches are certainly useful, but they may not give sufficient attention to the major problem, a potential lack of sufficient generating capacity.

Thank you. That concludes my remarks.

[Mr. Dunham's prepared statement follows.]

STATEMENT OF
RICHARD L. DUNHAM, CHAIRMAN
FEDERAL POWER COMMISSION
HEARING BEFORE THE
SUBCOMMITTEE ON ENERGY AND POWER
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
UNITED STATES HOUSE OF REPRESENTATIVES

May 19, 1977

Mr. Chairman and Members of the Committee, the purpose of this morning's testimony is to provide an overview of energy supply and demand and the proposed energy legislation before your Committee.

In April of 1976 I directed the Commission's Bureau of Power to make a comprehensive study of the projected adequacy of electric power supply for the United States in the period 1980-85. The most important conclusion of that report was that regional shortages of generating capacity and electric energy were distinctly possible in the 1979-1985 period. 1/

Although projections of rate of increase of electricity usage show a significant decline for the period 1977-86

1/ A nearly completed report which will be published shortly, based on information filed with the Commission on April 1, 1977, in response to our Order 383-4, tends to support that conclusion. Upon publication we will submit the report to the Committee.

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from the rate of increase experienced in earlier decades, projections of generating capacity construction also show a decline. The report concluded that additions to the bulk power supply system planned by the Nation's utilities will be adequate to meet demand through 1985 only if electricity usage does not exceed the reduced levels now projected, if the projected level of generating capacity construction is attained, if fuel requirements are met, and if no more than the normal contingencies are experienced. However, we are not confident that the growth rate of electricity demand can be contained within the next four or five years, we are not confident that the problems of fuel supply can all be solved, and we have good reason to doubt that generating capacity will be completed as needed.

Although it is assumed that the national appetite for electricity will be curbed by legislation now under consideration by Congress, there are no data available to predict whether usage will indeed decrease. There is no way to predict the magnitude of the reduction in the growth rate of electricity use, if any.

- 3 -

Fuel supply sufficient for all existing and projected generating plants is by no means assured. Hydroelectric facilities, which currently constitute 12.8 percent of the Nation's generating capacity, are subject to vagaries of the weather. The drought condition existing in the western states illustrates the reduction in generating capacity that can occur with respect to hydro plants. 2/ The phasing out of natural gas as a fuel for steam-electric plants not only reduces the fuel available for future generating units, but curtails the operation of existing plants that were not designed for the use of fuels other than natural gas.

From the viewpoint of national interest, the continued large scale use of oil to produce electricity is questionable.

2/ The continuing drought in the West has reduced the capability of systems with a large proportion of hydroelectric facilities. Although there is enough equipment installed, without water for operating hydro units, the effect is insufficient generating capacity.

To meet the crisis, interruptible loads have been largely curtailed (creating some unemployment), voluntary conservation programs have been attempted, and thermal generating capacity has been operated in excess of normal use. Because there is some doubt that these measures will be sufficient, a "Northwest Electric Task Force" has been established by the Governors of Oregon, Washington, Idaho, and Montana. The Task Force has proposed a program having two stages of voluntary coordination and three stages of mandatory conservation.

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For 1980, it is projected that some 800 million barrels of oil will be needed to produce about 18% of our national electric energy requirements. The high cost of this liquid fuel, our dependence on foreign sources for much of it, and competing industrial uses indicate that its use for electricity generation may be constricted as time goes on. Coal is the fuel that provides the largest single component of electric power supply, and is our most abundant fuel source. However, environmental opposition to the use of coal, and even to the mining of it in some circumstances, imposes restrictions on the planning and construction of generating capacity. The time lag between initial planning of a mine and the attainment of full production, and transportation difficulties, also operate to frustrate rapid completion of coal-fired generating units.

In addition to delays in generating unit construction caused by "fossil" fuel problems, there looms the shadow of nuclear plant curtailment. Adequacy of power supply in the decade 1977-86, even given the reduced load growth of about 5.8% now projected, is contingent upon annual increases in capacity at the rate of about 5%. This rate would result

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in a net increase of generating capacity, from 1977 through 1986, of some 283,000 megawatts. Nuclear units, as projected by the Regional Electric Reliability Councils, should comprise about 128,000 megawatts of the total to be added. However, data published by the Nuclear Regulatory Commission indicates that we may reasonably expect only some 84,000 megawatts of nuclear units to be completed by 1986. The possibility of a 44,000 megawatt shortfall is disturbing, as it would reduce the 1986 summer reserve margin to 14.5 percent, a value below that which is considered needed for reliable national power supply.

The utilization of raw reserve capacity data is somewhat misleading because it fails to take into account the unavailability of reserves at time of peak for scheduled maintenance, forced outages and other "unavailable" situations. The following table illustrates the fact that total "usable" reserves during the winter 1976-1977 were substantially less than the indicated installed reserve.

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UTILIZATION OF RESERVESWINTER 1976-1977CONTIGUOUS UNITED STATES

	<u>Megawatts</u>
Installed Capacity, December 31, 1976	529,620
Winter Peak Demand, January 1977	<u>345,782</u>
Installed Reserve	<u>183,838</u>
	53.2%
 <u>Use of Reserves</u>	
Full Forced Outage	42,928
Scheduled Maintenance	42,018
Other Unavailable */	<u>24,171</u>
Total Unavailable	<u>109,117</u>
Usable Reserve	<u>74,721</u> = 21.62 of peak
Total "Reserve"	<u>183,838</u>

*/ Includes partial derating; capacity unusable because of fuel burning restrictions; low water in hydro systems; frozen coal in some areas; capacity unusable because of transmission facility outages.

The legislation before you proposes remedies by increasing the efficiency of energy resource use in the generation and transmission of electric power, and the reliability of electric service, through greater use of interconnection, wheeling, economic dispatch and cogeneration. These remedies will be helpful in assuring effective use of resources on a regional and inter-regional basis, but by themselves they will be inadequate to assure sufficient, continued, reliable power supplies. Carefully planned transmission arrangements within individual systems, interconnections between systems and interconnections between regions are certainly of great value for the economic utilization of all generating capacity, for utilization of load diversity and for transfer of power in emergencies. However, an increase in transmission facilities cannot make up a long-term large-magnitude capacity deficiency and our view is that such deficiency could well come about.

While it is important not to overlook any sources for additional supply of electric energy, the magnitude of

capacity that could be made available at the present time from cogeneration sources is small. ^{3/}

As another remedy to the potential electric energy supply and demand problem, both the National Energy Act and the Electric Utility Act of 1977 seek to promote conservation of electric energy and improved system load factors by prescribing minimum standards and national policies with respect to electric rate designs. Both bills require consideration of marginal costing in cost determination methods for setting utility rates. Such rate design standards if successful may reduce the peak load demand and improve system load factors and should be encouraged, but much more evaluation of data is necessary in order to quantify just how much we can count on dampening peak demands through rate design. However, to the extent that changes in rate design can assist in cutting peak demand growth, it is a potential tool in our ability to meet our

^{3/} A preliminary study of the 14 western states indicates that as of today the total utility capacity therein (owned by the Federal Government, the privately-owned sector, state and local government agencies and by cooperatives) might be augmented by about 1% if all existing industrial generating units in those states were to be operated on a cogenerational basis.

future electric growth in the most economical way possible. 4/

As a solution to any overall supply and demand inadequacies, the proposed legislation appears in the main directed towards reduction of electric power use, encouragement of transmission facility construction and the use of cogeneration as methods of meeting the need for reliable power supply.

These approaches are certainly useful, but they may not give sufficient attention to the major problem, a potential lack of sufficient generating capacity.

4/ In this regard it should be noted that such rate design standards and policies should not be looked at as an answer to customer complaints as to the high cost of electricity. If such pricing is successful, then it may help keep system costs below what they would otherwise be but such pricing will not return costs below the levels we are experiencing today and in fact, costs can be expected to continue to rise. It should also be noted that large numbers of individuals within customer groups may well experience even higher electric bills under rates designed consistent with the national standards due to such customers' particular use patterns. This does not mean that such changes are undesirable, it is just a word of caution that the proposals should not be looked at as the answer to the higher cost of electricity we have recently experienced. Although in recent years the rate of increase in residential electric bills has been somewhat greater than the rate of inflation, namely, 165.6% versus 133.8% (using 1972 as a base of 100%), the percentage increase in the cost of electricity since 1934 has been only 50% whereas the rate of inflation since that time has been 383%.

Mr. WIRTH. Thank you very much.

Mr. Stockman?

Mr. STOCKMAN. Thank you, Mr. Chairman.

Mr. Bardin, in your statement I think you made the important point that there has been a differing growth rate between base load capacity and peak load capacity over the last decade and a half or so.

Mr. MATTHEWS. The present amount of installed generating capacity in the United States is higher than is necessary or than was planned, but this excess exists because of the small increases in peak load demands in the last three years as the Nation has suffered a rather severe recession. New generating units which were near completion were brought into commercial operation which in turn permitted a significantly more efficient operation because the older and less-efficient generating units did not need to be operated as frequently.

The basic problem that faces the electric utility industry is the continually increasing lead times required to bring new generating capacity into operation. While conditions vary in different areas of the United States, in the recent past it has required about 10 years for nuclear plants to go through the licensing and construction process. Now it seems clear that to undertake and complete a new powerplant, even a coal-burning powerplant, the lead time could stretch out to 13 years. About 8 of these 13 years are devoted to preconstruction requirements.

Clearly, this Nation must revise the licensing process, including the environmental investigation procedures and decisions, to drastically reduce the lead times required to complete new generating units. The growing overlap between and among Federal and State agencies involved in siting, regulatory, licensing, and environmental decisions creates uncertainties which inhibit the industry from executing the most efficient construction programs.

While it is quite often difficult to arouse interest in a problem likely to be 4 years hence, the matter of such importance as an adequate and reliable electric power supply for this highly industrialized Nation requires immediate attention because of the long lead times involved. In this case, the future is now.

It is urgent that all possible effort be devoted to the solution of these problems to protect the health and welfare of this Nation and even its security.

That concludes our statement. Mr. Dingell, we will be very happy to answer any questions if the panel has any later on.

Mr. DINGELL. Our next panel member.

STATEMENT OF JOHN J. KEARNEY

Mr. KEARNEY. My name is John J. Kearney. I am a senior vice president of the Edison Electric Institute, the principal national association of investor-owned electric utility companies. The member companies of EEI serve some 99 percent of all customers of the investor-owned segment of the electric utility industry, and 77 percent of the Nation's electricity users. We appreciate this opportunity to present our views on the electricity supply and demand aspects of H.R. 6831 and H.R. 6660.

My prepared paper provides forecast figures for electric generating capability and peak load demand for 1980, 1985, and 1990. Suffice to say that the Institute expects peak load demands to increase between now and 1990 at an annual rate of approximately 5 1/2 percent.

Conservation efforts can indeed dampen the Nation's need for electric energy although their impact cannot be fully known until the new programs are put into effect and consumer response is determined. On the other hand, there are many other factors which will tend to increase the use of electricity. Among the more important considerations is the use of electricity in support of jobs and in improving the standard of living for an expanding population; environmental improvement; stimulated interest in electric vehicles and the possible substitution of electricity for natural gas and oil. In addition, efforts to substitute the use of domestic fuel resources, coal and nuclear, to decrease our dependence on potentially unreliable foreign fuel resources should lead to the greater use of electricity.

As Mr. Matthews has pointed out, the ability to finance the construction of necessary facilities to meet increased electricity demand is of paramount importance. This, in turn, requires prompt and adequate rate relief. Actions and inactions on the part of government, at both the Federal and State levels have a significant impact on the scheduling of needed generating capacity.

Lastly, the availability of a reliable and adequate fuel supply at a reasonable price also has a significant impact on electricity supply.

Part F of H.R. 6831 mandates the use of coal in both new and existing electric generating plants which are capable of burning coal. It does not expand electricity supply and in the case of existing plants, the requirements of the act can actually decrease available electric generating capacity during the period of plant conversion.

Both H.R. 6831 and H.R. 6660 include provisions regarding time-of-day pricing and load management programs which if successfully applied could impact on both peak load demands and energy requirements. These bills also foster cogeneration which could result in more efficient use of fuel provided, of course, electrical and heat processing load characteristics are compatible and equitable arrangements between the utility and a cogenerating industrial company are possible. Lastly, H.R. 6831 promotes an energy conservation program for existing residential buildings.

Electricity supply would be affected by title II and section 105 of H.R. 6660. Title II prescribes a mandatory method to plan area bulk electric power supply systems which is duplicative of current electric system efforts through area electric reliability councils and the National Electric Reliability Council and which takes away from electric utility systems the basic responsibility for planning—an action which is not warranted in view of the performance of utility management.

The preconstruction antitrust review mandated by section 105 of H.R. 6831 is not required since there are ample legal opportunities to challenge any anticompetitive actions of a utility under existing law and also experience with a similar provision of the Atomic Energy Act of 1954 demonstrates that this procedure can result in unnecessary delays.

Neither bill does enough to encourage electric energy production which the Institute believes will be necessary in view of increasing electricity requirements. H.R. 6831 recognizes the need to emphasize the use of coal, our most plentiful domestic fossil fuel resource,

The Dow Chemical Company - Gerald L. Decker

Written Response to Questions on Cogeneration
 Submitted Before the
 Subcommittee on Energy and Power
 of the
 Committee on Interstate and Foreign Commerce

3.1(a)&(b) - The wording of HR 6831, Section 522 (a) states that the Administration may issue rules exempting qualifying cogenerators from the Federal Power Act, the Public Utility Holding Company Act, and from various state laws and regulations. In the meantime, punitive user's taxes on gas and oil will force rapid replacement of existing industrial gas and oil burning facilities with coal fired units. Cogeneration must be installed as a unit. If cogeneration is ever to take place, industrials must be assured immediately of exemption from the burdensome regulations currently imposed on public utilities, or they will merely go ahead with their replacement schedule and irretrievably forego the cogeneration opportunity. While HR 6660, Section 107 (e) specifically exempts cogenerators from the Federal Power Act, it does not address the Public Utility Holding Company Act or any existing state regulations which would tend to inhibit a privately owned company from attempting to sell electricity. The existing regulations which tend to prohibit electricity sales by private industrials are so complex that positive and specific exemptions from utility regulations are necessary to entice an industrial firm to even attempt an electric power sale. In this connection it would be highly desirable to amend HR 6660, Section 3 (4) and HR 6831, Section 502(a) (4) to read as follows:

The term "electric utility" means any person, State agency, or Federal agency, which sells electric energy, except that this term shall not apply to a cogeneration

facility which is owned or controlled by a person not primarily engaged in the generation or sale of electric energy.

The sale of steam by a utility to an industrial firm is desirable. However, in practice, such sales are unlikely to occur. Steam can generally not be transported more than five miles. Thus, a utility must be close to a potential industrial customer and must also be prepared to supply steam on a continuing, round-the-clock, non-seasonal basis. Such opportunities are relatively rare.

Section 522 (b) (2) (B) of HR 6831 and Section 107 (b) (2) (B) of HR 6660 both require the owner or operator of a qualified cogeneration facility to offer the connected utility the opportunity to construct and operate the facility. While there may be cases where such construction and operation by the utility is mutually desirable, a mandate to an industrial firm to offer the opportunity will in many cases be reason enough for industrials to not consider cogeneration. I strongly recommend that this provision be removed from the definition of a "qualifying cogeneration facility," so that the term simply "means a cogeneration facility which the Administrator determines meets such requirements (including requirements respecting minimum size and fuel efficiency) as the Administrator, by rule, prescribes."

There is some measure of implication in both HR 6660 and HR 6831 (especially the former) that the benefits from cogeneration are associated with the sale of electric energy to an electric utility by an industrial cogenerator. This is true only to a minor extent. Most of the benefits, in terms of energy conservation from greater fuel efficiencies, will result from industrial plants generating.

electric energy for consumption internally--electric energy which they now purchase from an electric utility. **This will also free up some electric utility generating capacity to help meet increasing utility loads and postpone or eliminate impending generating capacity shortages.** In order to minimize the possibility that HR 6660 could discourage this desirable result, I recommend that HR 6660, Section 107(a) be amended to read as follows:

Sec. 107. (a) COGENERATION RULES.-

Not later than 1 year after the date of enactment of this Act, the Commission shall, after consultation with representatives of State regulatory authorities, and after a reasonable opportunity for other interested persons to submit oral as well as written data, views, and arguments, prescribe rules requiring electric utilities to offer to sell electric energy to the owner or operator of a qualifying cogeneration facility and to offer to purchase electric energy from such owner or operator. Such rules shall insure that rates for such sales and purchases are just, reasonable, in the public interest, and provide incentives to encourage cogeneration. Such rules shall include--

(1) rules which specify the reliability of emergency electric energy service available to the qualifying cogeneration facilities;

--and, in those cases in which a qualifying cogeneration facility has contracted to sell electric energy to an electric utility, such rules shall also include--

(2) rules for allocating costs of a qualifying cogeneration facility between those incurred in generating electric energy and those incurred in generating other forms of energy;

(3) rules respecting the interconnection of a qualifying cogeneration facility to the distribution system of any electric utility or to a centrally dispatched power pool as defined in section 202(b)(3)(B) of the Federal Power Act;

(4) rules respecting the responsibility of the owner or operator of a qualifying cogeneration facility during periods of electric shortage;

(5) rules respecting the minimum reliability standards for the qualifying cogeneration facility.

Section 522 (c) of HR 6831 and Section 107 (c) of HR 6660 calls for enforcement of the cogeneration provisions as rules under the Federal Power Act. Since the desirability of cogeneration is more in the area of energy savings and efficiencies as opposed to a method of, per se, producing more electricity, cogeneration would be better treated as a conservation method and administered by an organization responsible for such activities and aware of the special problems inherent in cogeneration, whether in the FEA or within some other arm of the proposed Department of Energy.

3.2-The FPC should continue its function as a collector and disseminator of electricity data. However, to entice industrials to consider selling by-product electricity, such industrials must be assured that they are not to be burdened with the regulations and reporting requirements currently imposed on the utilities. Few industrials are at this point in time very receptive to the prospect of more government intervention and regulation of their business, and in the case of cogeneration, even the possibility of being treated like a utility could cause industrials to forego the opportunity.

factor of the utility which has been supplying electric energy to the industry. It also depends very much upon the extent to which the utility has taken cogeneration into account in its construction planning, and upon the future impact on load distribution of peak load pricing, interruptible power rates, and similar measures. A categorical answer is not possible, therefore. It seems likely, however, that there could be numerous situations in which industrial cogeneration might result in a slightly lower load factor for a utility. Nevertheless, if electric rates are truly based on cost of service, this slight lowering of load factor would not raise rates to non-industrial customers of the utility. Also, the over-all load factor (utility plus industrial cogenerator) would not be lowered.

(b) - Yes.

(c) - Yes.

3.8 - An additional investment tax credit is an obvious enticement for proceeding with cogeneration. However, the punitive use taxes currently proposed for industrial oil/gas users but not imposed on utilities far exceeds any benefit from the ITC.

3.9 - All of the institutional and legal barriers to cogeneration involving a sale of power by industry to utilities or other industry are not covered. See discussion under 3.1.

3.10 - See study - Energy Industrial Center Study

Mr. SHARP. If I might just interrupt at this point, it is our impression that the way the administration's bill is written you as a cogenerator would not face the tax until the schedule of the utility—you fall into the definition—I am talking about the fuel that goes into your cogeneration now. The fuel tax would be on the schedule for that purpose as it would be for the utility, and not on the schedule that it would be for a major user.

Mr. DECKER. I talked to Rich about this at lunch a little bit. If that is the interpretation, which was different from the way our people interpreted that, I think that would correct that point.

Mr. ROCA. This is on page 218, lines 18 through 22.

Mr. SHARP. It is in the definition of who counts as an electric utility.

Mr. DINGELL. I would ask at this time our panelist, in the light of the comment just made by the Chair, have an opportunity to review that and give his thoughts and suggestions; and also not only the gentleman who made the comment, but his associates on the panel, to have an opportunity to give us their suggestions, with perhaps regard to language which might correct or adjust the problems referred to.

Mr. SHARP. Thank you.

Mr. Williams?

STATEMENT OF ROBERT H. WILLIAMS

Mr. WILLIAMS. Mr. Chairman, I am pleased to have the opportunity to participate in this panel on industrial cogeneration. My name is Robert Williams. I am from the Center for Environmental Studies at Princeton University.

I wish to focus my comments on the problems of phasing in new cogeneration capacity in the face of two constraining factors: A large electric utility excess reserve margin that is likely to remain with us for some time and the stated U.S. policy of shifting industrial boiler fuel from oil or gas to coal.

The pioneering studies on cogeneration conducted by Dow Chemical Company and Thermo Electron Corporation have shown that, depending mainly on the technology used, the overall economical potential for electricity production via cogeneration in the United States in 1985 could range from 10 percent to 75 percent of the level of 1975 electricity production. It is unlikely that a high fraction of the economical potential will be developed in the course of the next 10 years, however.

Demand for new cogeneration capacity will probably not develop on a large scale in this timeframe simply because of a serious problem of excess central station generating capacity at the national level. I don't mean to refer here to the situation in every region because in some areas there won't be an excess reserve generating capacity.

In 1975 the average utility reserve margin was 35 percent. Because so many new central station plants are already under construction, the excess reserve margin has been projected by the electric utility industry to drop to the 15 to 20 percent range which utilities prefer no earlier than the mid-1980s, if electricity demand grows at the average rate of 5.8 percent per year in this period. [See table 1.]

Because of the recent reversal of the long-term trend of rapidly falling electricity prices [see figure 1] and the expectation that real prices will be increasing for a good number of years, I believe that electrical load growth will probably average considerably less than 5.8 percent per year over the next decade.

In particular, the administration is now projecting a load growth averaging of about 4.5 percent per year over the next decade. Thus, the excess reserve margin problem may well be even more serious

than the industry forecasts suggest. With the same installation rate for new generating capacity, the excess reserve margin would be over 30 percent in 1985, with 5 percent annual growth in peak demand, and it would be about 45 percent if the peak load growth averaged 4 percent per year.

Under these circumstances, I think it would be difficult in the near term to obtain utility cooperation on cogeneration projects in many parts of the country.

A related concern I have is that the national policy to shift industrial boilers to coal from oil and gas may result in the loss of a considerable fraction of the potential savings from cogeneration, if the shift is made too rapidly.

If forced to shift to coal before advanced coal technologies are commercially available and while we have a national excess reserve margin problem, many firms, unable to work out satisfactory agreements with utilities for the sale of excess power generated on site or for the purchase of back-up power, may either install low pressure coal fired boilers—that can't be converted later for cogeneration—or they may install steam turbine cogeneration systems. In the former case, the cogeneration potential would be entirely locked up for many years.

In the latter case, where coal is used in steam turbine cogeneration systems, the potential fuel savings from the displacement of new central station power generation would be only a fraction of what it could be with technology now being developed. This situation arises from inherent differences between gas turbine and steam turbine based cogeneration.

The technological and economic advantages of gas turbine technology over steam turbine technology are considerable. For a given industrial process steam load the overall fuel savings potential is typically about three times as large with gas as with steam turbines. Also capital costs are markedly lower for gas turbine systems. The fact that only 8 to 15 percent of the total fuel consumed in a steam turbine based cogeneration system is converted to electricity, compared to more than 25 percent in a gas turbine waste heat boiler system, in itself is a good indicator of the technological superiority of gas turbine systems.

Of course, gas turbines today require liquid or gaseous fuels, while steam turbine systems can be coal fired. However, this constraint could well be relaxed within a decade if coal fired gas turbines used with fluidized bed combustors are commercialized in this timeframe.

It seems to me that the appropriate course for public policy in light of the utility reserve margin problem and the Nation's coal conversion policy is to steer a flexible enough course so as to maximize the long run gain.

Over the next 10 years the focus of public policy should be (1) to work out the myriad of institutional problems associated with cogeneration in a large number of institutional demonstration projects carried out wherever there is a true need for new electric generating capacity and where there are substantial steam loads; (2) to speed up R and D on advanced technologies for coal fired cogeneration; and (3) to maintain enough flexibility in our coal

conversion policy to ensure that the "cogeneration resource base" is preserved.

In regard to this last point I am heartened by a very important provision in "The National Energy Plan" that

Industrial firms and utilities which invest in cogeneration equipment could be exempted from the requirement to convert from oil and gas in cases where an exemption is necessary for cogeneration.

I would argue for an even stronger exemption because cogeneration is a very efficient use of oil and gas and because with gas turbine cogeneration systems the full range of institutional issues would arise in "institutional demonstration projects." This arises because in the case of gas turbine technology more electricity would often be produced than could be consumed on site at a given industrial site.

In contrast the problems associated with the sale of excess power often do not arise with steam turbine based technology. An emphasis on gas turbine technology in institutional demonstration projects should not result in a large surge in demand for gaseous and liquid fuels in this timeframe, simply because the excess reserve margin problem will limit the growth in cogeneration capacity over the next 10 years.

In conclusion, I feel that if the Nation could steer an appropriate course through these constraining influences over the near term, cogeneration could become the major source of new electric generating capacity during the last 15 years of this century.

[The information referred to follows:]

Mr. SHARP. Thank you very much, Mr. Williams.
Mr. Hatsopoulos?

STATEMENT OF GEORGE N. HATSOPOULOS, PH.D.

Mr. HATSOPOULOS. Mr. Chairman, I appreciate this opportunity to testify at these hearings on the administration's energy proposals. My name is George Hatsopoulos. I am president of Thermo Electron Corporation. Our company has been conducting studies on energy conservation, particularly as regards U.S. industry, and we have as part of that done quite a bit of work on the one prospect for conservation which has to do with cogeneration.

I have submitted a written statement today, as well as two supporting reports that summarize some of the findings we have made.¹ I just want at this point to make some key points taken from my statement.

First, I would like to say that, as many on this panel know, and members of this committee as well, electricity may be produced by cogeneration at an incremental fuel rate which is about half of that required to produce electricity through central power stations. So, it is definitely a very attractive device for conserving fuel.

Second, I would like to state that the capital costs for cogeneration capacity, including investments in fuel supply facilities, are about 60 percent of the corresponding capital costs of central power stations, plus the corresponding fuel supply facility, which means that not only cogeneration saves fuel, but it is cost effective.

The third point I want to make is the projection of what can be achieved realistically in this country with regard to cogeneration in a timeframe, say, about 10 years from now.

Our studies have indicated that what can be accomplished in practice could range anywhere from a minimum of about 7,000 megawatts installed capacity to all the way up to about 10 times as much, 70,000 megawatts. This is a big range. I would like to address the point of where are we going to end up within that range, depending on what is provided by legislation because this I think is the key issue.

There are two major difficulties that would prevent cogeneration from accomplishing its potential in the next 10 years. One is economic considerations, and the other one is institutional considerations.

The situation as far as economic considerations essentially boils down to this: The cost of capital, as we know it now, available for cogeneration in industry is much greater than the cost of capital that is available for central power stations. This is a distortion of our economic system which slows down the potential for cogeneration.

There are three components that cause that distortion. First, it is a matter that has been discussed rather extensively in the previous panel, the difference between average price of electricity and the marginal incremental cost for new supply. The second component

¹ The reports referred to may be found in the subcommittee files.

which has to do with shortage of capital at reasonable rates of return to industry causes a payback requirement by industry for discretionary investments which is much greater than the payback requirement or return on investments for investments that relate directly to the primary or mainstream business of any given industry.

Basically, this stems from the fact that industry has only a limited amount of capital available at reasonable cost, and beyond a certain point the capital cost increases tremendously. It goes up to probably over 30 or 40 percent. So that anything that is discretionary, such as cogeneration in an industry that makes aluminum, or that makes something else, is judged based on the higher price of cost of capital rather than the immediate capital available.

The third point has to do with the fact that industry, because it runs in a competitive environment and assumes much larger risks, has to require a higher rate of return on investment than regulated monopolies such as utilities. This also causes a distortion.

Unless we address these issues quantitatively, through either tax incentives or taxes or pricing regulation of the cost of electricity, and we do it in a way that will be commensurate to the distortion that exists, we are not going to get much cogeneration capacity above the minimum I described.

In this point, I fully agree with Mr. Decker, that what is the proposed investment tax credit by the administration of an additional 10 percent—our calculations, which by the way are outlined in the reports I gave you, show that the effect will be minimal, and will yield only a small fraction of the total potential.

I just want in closing to say something about the two bills that you are considering, H.R. 6831 and H.R. 6660. These two bills are similar in many respects. They tend to address quite well the institutional barriers, which is the other side of the difficulties that cogeneration would face.

We tend to favor H.R. 6660, simply because it has more of a reference to efficiency incentives as well as regional planning, which I think will be quite useful in implementing the desire of the program.

In this connection, we believe that considering efficiency quantitatively, rather than considering qualitatively certain desirable practices is something essential for all of the conservation program, and I am afraid the administration's bill does not address the question of efficiency in a quantitative way which we feel is essential if we are going to meet any fraction, reasonable fraction of the potential.

These are some of the key points that I wanted to make.

Thank you very much.

Mr. SHARP. Thank you. We appreciate having that information.

Mr. DeLoss, welcome back.

[Mr. Hatsopoulos' prepared statement follows:]

Because a large number of energy saving measures will involve cogeneration, and because such measures can be adequately evaluated by using the efficiency index discussed earlier, we recommend the enactment of a program of additional tax credits that are scaled to the efficiency index for the particular process or equipment being considered. Such tax credits should vary from zero to as much as 30 percent for the most efficient cogeneration installations.

In addition to tax credits, the proposal to restructure electricity rates should be implemented. In his energy message to the Nation on April 18, President Carter established the principle that "Prices should generally reflect the true replacement cost of energy. We are only cheating ourselves if we make energy artificially cheap and use more than we can really afford."

We are in total support of this principle and feel that it must be applied to all forms of energy. This change involves the elimination of promotional, declining, and other rates for electricity that do not reflect cost incidence. Unless this problem is eliminated, the tax on petroleum and the higher gas prices will precipitate a disastrous shift toward electricity use in industry. Excessive growth in electricity demand from central stations must be avoided if we are to prevent an enormous waste of both energy and capital.

* * * * *

STATEMENT OF GARRY DeLOSS

Mr. DeLoss. Thank you, sir. It is nice to be here again. I will try to summarize my statement.

The surprising news about cogeneration is not that it can save energy and money and provide environmental benefits, but that cogeneration of electricity has been increasingly displaced in recent years by less energy efficient and less economically efficient central powerplants. The declining use of cogeneration by industry in this country can be traced directly to the antagonism of the electric utility companies. They have virtually strangled cogeneration by offering artificially low discount rates to large industrial users of electricity, by charging discriminatory backup rates to customers who cogenerate, and by either refusing to buy excess electricity from cogenerators or offering an unfairly low rate.

The history of the substitution of central powerplants for cogeneration in this country is a classic case of private interests encouraging energy waste and economic waste because they benefit from guiding investment into central powerplants, while larger public interests in energy efficiency and economic efficiency suffer.

What is good for electric utility companies is not what is good for the country. Clearly, the anti-efficiency policies of the electric utility companies must be offset by government intervention to

guide investment into cogeneration facilities instead of central powerplants.

The National Energy Act is a step in the right direction. My major objection to the act involves its definition of a "qualifying cogeneration facility." The act would require a cogenerator to offer an electric utility to which the cogeneration facility "is, or will be, directly connected an opportunity to operate such facility terms which are agreed upon by the parties." There is simply too much deference to utility company interests built into this language. Access to the incentives for cogeneration in the act should not be conditioned on utility company involvement.

The qualifying language "on terms which are agreed upon by the parties" may permit a cogenerator to qualify for the Federal incentives after refusing a utility company offer to operate the cogeneration facility, but the mere existence of the requirement that utilities be offered a chance to operate the cogeneration facility creates ambiguity.

Can utility companies whose offers have been rejected challenge the access of would be cogenerators to Federal incentives on the ground that they have rejected fair offers by the utility companies? This issue should be clarified, perhaps by dropping subsection (B) entirely.

Another way to promote cogeneration is to encourage public ownership of cogeneration facilities. In its study of the potential for cogeneration in New Jersey, the New Jersey Public Interest Research Group has suggested that municipal, regional or State cogeneration authorities be permitted to finance cogeneration facilities through the sales of tax-exempt bonds. The Internal Revenue Code presently permits such use of tax-exempt bonds by municipal authorities only under limited circumstances and makes no provision for such a use of tax-exempt bonds by regional or State authorities.

While amendments to the Internal Revenue Code to encourage cogeneration are beyond the jurisdiction of this committee, members who are interested in cogeneration incentives might want to investigate this option further. In the words of the New Jersey report, "the reluctance of utilities or industries to propose such projects might...be circumvented by creation of public cogeneration authorities."

I might add another possible suggested policy change here in light of the comments of Mr. Williams on excess capacity providing a barrier to cogeneration. Perhaps in the utility regulation section of the National Energy Act there should be some provision that penalizes utilities in some way for promoting the construction of excess capacity. Obviously if it is in their interest to create barriers to the use of cogeneration, one way to do it is going to be construct excess capacity.

In summary, consumers and the national interest in energy efficiency and economic efficiency have been injured by the successful opposition of electric utilities to cogeneration. The National Energy Act's provisions to encourage cogeneration are a step in the right direction, but they should be strengthened in several respects.

Thank you.

**PUBLIC UTILITY RATE PROPOSALS OF
PRESIDENT CARTER'S ENERGY PROGRAM
(PART E OF S. 1469)**

**HEARINGS
BEFORE THE
SUBCOMMITTEE ON
ENERGY CONSERVATION AND REGULATION
OF THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
NINETY-FIFTH CONGRESS**

FIRST SESSION

ON

S. 122

**A BILL TO REFORM ELECTRIC UTILITY RATE REGULATION, TO
STRENGTHEN STATE ELECTRIC UTILITY REGULATORY AGENCIES,
AND FOR OTHER PURPOSES**

S. 1300

**A BILL TO REFORM ELECTRIC UTILITY RATE REGULATION, TO
STRENGTHEN STATE ELECTRIC UTILITY REGULATORY AGENCIES,
AND FOR OTHER PURPOSES**

S. 1363

**A BILL TO PROMOTE THE RECOVERY OF WASTE HEAT ENERGY RE-
SOURCES AND THE EXPEDITED DEVELOPMENT AND COMMERCIAL
APPLICATION OF DUAL-PURPOSE POWERPLANTS, AND FOR OTHER
PURPOSES**

S. 1364

**A BILL TO PROVIDE FOR THE SUBSISTENCE ELECTRICAL NEEDS
OF ELDERLY RESIDENTIAL CONSUMERS, PROMOTE EQUITY IN
ELECTRICAL COSTING THROUGH REFORM OF CURRENT ELECTRIC
RATE STRUCTURES, AND FOR OTHER PURPOSES**

S. 1469 (Part E)

**A BILL TO ESTABLISH A COMPREHENSIVE NATIONAL ENERGY
POLICY**

JULY 27, 28, AND SEPTEMBER 7, 1977

Publication No. 95-120

PART 1

**Printed for the use of the
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Senator JOHNSTON. Senator Jackson.

**STATEMENT OF HON. HENRY M. JACKSON, A U.S. SENATOR
FROM THE STATE OF WASHINGTON**

The CHAIRMAN. Mr. Chairman, I want to commend you for the hard work you've done in preparing the energy conservation provisions of the President's bill for markup by the full committee. We should report those provisions this week. Senator Johnston has played a very important role in connection with our energy hearings this year and I want to commend him most highly.

The matter that is before us is very complex and obviously the impact on the economy could be very great. It is the function of these hearings and those which will follow after the August recess to delineate this impact.

We will be engaged in an educational exercise of substantial proportions for our jurisdiction over these issues is new. Members of the Committee on Energy and Natural Resources have not had extensive experience with this policy area. We are, however, a committee which knows how to move legislation.

We will report a bill addressing the issue of utility rate reform in September in time for consideration of the issue by the Senate well in advance of the scheduled October recess. We intend to be responsive to the President in his request for a national policy, but we also intend that those who are to be affected by this legislation have adequate opportunity to have their views heard and discussed.

Senator JOHNSTON. Thank you, Senator Jackson.

This morning we have—Senator Hart, I see is in the back of the room. We are very glad to have the distinguished Senator from Colorado.

The CHAIRMAN. You arrived just in time. You got here 1 minute ahead of us.

Senator HART. Is Senator Brooke here?

Senator JOHNSTON. Senator Brooke is not here. He will be here a little later.

**STATEMENT OF HON. GARY HART, A U.S. SENATOR FROM THE
STATE OF COLORADO**

Senator HART. Mr. Chairman, today you are considering legislation pertaining to the regulation of electric utilities. Energy in the United States has been so inexpensive until recently that our wasteful use of energy was not considered a problem.

Industries found it cheaper to let waste heat escape unused than to recover and recycle it. Instead, the heat wasted by industry could have been used to generate electricity, and the heat wasted by electrical generators could have been used to heat businesses, homes and farm operations.

Over the years, our institutions have become so accustomed to wasting energy that neither public utilities nor private firms work together to use heat energy wasted by the other. These attitudes can and must be modernized.

I want to compliment this subcommittee for undertaking this task. The legislation before you today is designed to encourage both industries and utilities to work together to make economic use of waste heat. This use of energy, which takes a byproduct of one process to perform useful work in another process, is called cogeneration. And I am offering a legislative proposal, S. 1363, as a substitute for the administration's cogeneration provisions in S. 1469, section 522.

I will briefly summarize the most important similarities and differences between my bill and the administration's provisions.

Both S. 1363, which is my bill, and the administration's provisions have a similar economic incentive for industry to purchase cogeneration equipment. This is a 10 percent investment tax credit.

The important difference lies in their respective approaches for getting firms and utilities together so that cogeneration is economically practical. My approach is to give economic incentives and disincentives to firms and utilities.

Firms will get tax credits, public utility regulators will get grants to study ways of changing regulations to foster cogeneration, and utilities will lose tax credits only if they unreasonably refuse to purchase electrical power generated as a byproduct by private firms. No parties are required to do anything. I feel that regulatory requirements may be counterproductive, as I will explain later.

The administration's provisions contain regulatory requirements which may cause firms to avoid cogeneration. For example, a firm must offer the utility company the opportunity to operate the firm's cogeneration equipment.

Also, the administration's provisions would require utilities to connect with industrial cogenerators, and the Federal Government could set rates in advance. These sorts of provisions could take local control away from the firms, the utility companies, and the public utility regulators.

Because of this, I fear that these provisions could cause the affected parties to shy away from cogeneration, rather than be attracted to it.

My bill and the administration's provisions are similar. They each attempt to remove the economic and institutional barriers to cogeneration. My proposal differs substantially from the administration's in that it is specifically designed to replace institutional barriers with cooperation between industry and electric utilities.

There is a great need for legislation to promote the use of waste heat. We waste, as I am sure the subcommittee knows, the equivalent of 8 million barrels of oil every day, more than we import. We can save much of that amount by cogeneration.

Both my proposal and the administration bill are aimed at achieving the enormous benefits of waste heat recovery. The Library of Congress states that within 10 years, the bill that I have introduced will stimulate enough cogeneration to: first, substitute for the capacity of 10 to 14 large nuclear powerplants, cutting projected plants by 13 to 20 percent; second, reduce the country's total fuel consumption by 5 to 10 percent; third, cut oil imports by 18 to 37 percent; and, fourth, reduce electric utility bills by about 10 percent.

One of the reasons we are not achieving these cogeneration savings today is because our artificially low energy prices distort the real

value of conservation. This problem eventually will be solved. Meanwhile, we have to use other measures to ensure that the benefits of cogeneration are reflected on corporate balance sheets. Industry should be provided either incentives for conserving or penalties for not conserving.

Both the administration bill and my proposal offer financial incentives for industry to cogenerate. Both would provide an additional tax credit of 10 percent to industries for the purchase of cogeneration equipment and facilities.

To be eligible for the tax credit in the administration's proposal, however, private industry must offer the utility company the opportunity to operate the firm's cogeneration equipment. If I were the president of a firm, Mr. Chairman, I would not necessarily enjoy the idea of turning over control of part of my plant to a utility company.

S. 1363, on the other hand, provides an investment tax credit with no strings attached. All firms need to do is cogenerate. In fact, S. 1363's tax credit is also refundable, meaning that a firm would receive a payment if the tax credit exceeded its tax liability.

The most immediate and inhibiting barriers to cogeneration are institutional. State and local regulatory authorities discourage cogeneration and waste heat recovery. Many private utility companies, fearing change, unreasonably refuse to purchase cogenerated power at fair rates.

In the administration's bill the Federal Government would require utilities to connect with industrial cogenerators, and would fix rates. I am concerned that these provisions will discourage cogeneration because they take autonomy away from industry and utilities.

My bill substitutes a financial incentive for the administration's requirement that utility companies connect their electrical grid to cogenerators. A utility company would lose its standard investment tax credit if it unreasonably refused to purchase power from a cogenerator.

It also provides for grants to State utility commissions to assist them in modernizing their regulations and procedures to encourage waste heat recovery. This aid would encourage the three parties to negotiate a cogeneration strategy without fear that the purchase of equipment means a future loss of autonomy.

Further, the administration's proposal would give the Federal Energy Administration the authority to set new policy before we know just which new policies are needed. At this time, the Federal Government does not have the knowledge to prescribe a single set of regulations to deal fairly with the generation of electric power by private industry.

The fundamental regulatory problems raised by cogeneration and waste heat recovery should be resolved carefully by Congress and after study, as S. 1363 allows, rather than by the Federal Energy Administrator, as the administration's proposal would mandate.

For this reason, my bill calls for a series of studies to recommend specific actions to eliminate barriers to cogeneration at the national level. The goal of these studies is to design several approaches to a national waste heat recovery policy—different actions and approaches

from which Congress and the President can choose in 2 or 3 years. Consequently, Mr. Chairman, S. 1363's interim economic incentives automatically terminate within 3 years. This would be at a time when the Congress can then resolve which of the several approaches suggested by the study should be adopted.

The Energy Research and Development Administration currently has money to develop new fuel-burning technologies for improved environmental protection and efficiency, but not for achieving the unique opportunities presented by waste heat recovery.

Consequently, S. 1363 provides specific statutory direction for an applied research program to improve ways to recover and use waste heat energy. The state of the art already allows us to achieve the substantial savings I have already described. But industrial engineers predict that this research will develop new ways to recover waste heat with quadrupled savings in 4 to 7 years.

For these reasons, Mr. Chairman, I would strongly urge the subcommittee to substitute the provisions of S. 1363 for the relevant sections of the Administration bill.

At this point in the record, Mr. Chairman, I would like to submit several statements that support this proposal to substitute the Cogeneration and Waste Heat Utilization Act for section 522 of the Administration's proposal.

The first is written testimony by Senator Sasser. In that testimony he notes that the area of energy consumption addressed by S. 1363 is roughly 15 percent of all the energy consumed by the entire planet, and that the Cogeneration and Waste Heat Utilization Act offers a coherent and comprehensive approach to industrial energy conservation, one which will result in far greater savings than section 522 of the Administration's bill.

Second, the written testimony of the National Rural Electric Cooperative Association. The rural electricians excellently serve the electric needs of most of our Nation's rural areas. They conclude that the mandatory requirements imposed on electric utilities by the Administration's provisions to purchase cogenerated power are unworkable.

On the other hand, they state that my proposal, S. 1363, is a prudent legislative approach which will permit the purchase of cogenerated power in an economic and efficient manner after a careful evaluation and balancing of all adverse and beneficial impacts.

Third, Mr. Chairman, is a letter from the Governor of Tennessee, Ray Blanton. Governor Blanton states that he fully supports this bill, S. 1363, and urges the Energy Committee to do all in its power to see that it is properly addressed and expeditiously enacted into law.

And fourth, a statement by Drs. Beno Sternlicht and Donald Colosimo, brilliantly explaining the crying need for the specific statutory authority and direction which S. 1363 provides for developing better ways to recover and use our Nation's waste heat energy resources.

And, finally, Mr. Chairman, a study of the predicted effect of this bill on cogeneration by the Congressional Research Service. The study concludes that by 1987, S. 1363 will encourage enough cogenerated power to replace the need for up to 20 percent of the nuclear powerplants presently projected.

STATEMENT
OF
DAVID J. BARDIN
DEPUTY ADMINISTRATOR
FEDERAL ENERGY ADMINISTRATION
ON THE
NATIONAL ENERGY ACT (S. 1469), TITLE I, PART E
PUBLIC UTILITY REGULATORY POLICIES
BEFORE THE
SUBCOMMITTEE ON ENERGY CONSERVATION AND REGULATION
OF THE
COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

JULY 27, 1977

ATTACHMENT 1

This attachment is a compilation of the most frequently asked questions, with answers, relating to the provisions of Title I, Part E of S. 1469. The questions and answers have been divided into sections.

1. Ratemaking
2. Bulk Supply of Electrical Power
3. Cogeneration
4. Supply and Demand of Electricity
5. Gas Utilities

3.0 COGENERATION

- 3.1(a)(b) Q. Please comment on the cogeneration provisions of S1469.
- A. (a) o S1469 places responsibilities in connection with cogeneration in the FEA.
- o S1469 exempts qualifying cogenerators from the Public Utility Holding Company Act, to State laws and regulations respecting public utilities.
- o S1469 defines a "cogeneration facility" as one that will be owned by a person not primarily engaged in generation or sale of electric power.
- o S1469 does not permit the use of declining block rates in the sale of electricity by utilities.
- 3.2(a) A. The bill exempts certain types of cogeneration from certain State and Federal utility laws and regulations. To what extent do you think this is necessary to encourage cogeneration?
- A. Cogeneration will probably not develop as an important source of electrical and other energy unless cogeneration facilities are exempted from certain State and Federal utility laws and regulations. Therefore, it is vital that some method of exemption from such laws and regulations be included in Federal cogeneration legislation.

both the tax credit and the industrial elimination of declining block rates, FEA estimates that industrial expenditures of approximately \$4.5 billion for cogeneration would result. The additional tax credit would, it is estimated, result in a decrease in Federal tax revenues of about \$570 million. This includes revenue decreases resulting from those companies adopting cogeneration because of the additional credit and those that would have installed cogenerating equipment even if the additional credit were not allowed.

It is estimated that cogeneration energy savings resulting from the legislation would reach about 200,000 barrels per day of oil equivalent by 1985.

3.8 Q. Are all the institutional and legal barriers to cogeneration addressed by either of the two bills? If not, what additional provisions are needed?

A. S1469 addresses the major legal barrier which we believe, on the basis of our present knowledge, to be significant.

3.9 (a)Q. What is the potential effect of cogeneration on the energy and capital resources required to provide electric service?

A. It is estimated that industrial cogeneration capacity added as a result of this legislation would be equal to less than 2 percent of total electric utility capacity in 1985. The energy savings would be the equivalent of approximately 200,000 bbls/day.

3.9 (b)Q. How much of this potential can reasonably be expected to occur and in what time frame?

A. It is reasonable to expect that our estimates will be attained by 1985.

master-metered apartments are converted to individually metered apartments, the building be brought up to an energy conservation building standard such as the ASHRAE 90-75.

Those are my main points concerning the overall philosophy of this approach and, as I mentioned, many of the specifics are in my written testimony. We would be pleased to help the committee in any way and answer questions and work with the committee over the next month as you deal with this issue.

Senator HANSEN [presiding.] Thank you very much, Mr. Levy.
[The prepared statement of Mr. Levy follows:]

STATEMENT OF PAUL F. LEVY, DEPUTY DIRECTOR, MASSACHUSETTS ENERGY POLICY OFFICE

Mr. Chairman, I thank you for this opportunity to testify in favor of President Carter's electric and natural gas rate reform proposals. As we have said before other Congressional committees, we in Massachusetts have a few changes to suggest in the President's energy plan, but we have absolutely no quarrel with the philosophy and goals of his proposal.

Unlike others who may have appeared before you on this issue of utility rate reform, I am addressing this topic from the point of view of a policy-maker and not a state regulatory official. In many utility-related matters, regulatory decisions can have significant energy policy implications. It is primarily to these matters that I will direct my comments.

The philosophy behind this testimony is that Massachusetts advocates more efficient use of energy wherever economically feasible. A key factor in promoting energy efficiency is to establish price structures for the various energy forms—whether they be electricity, natural gas, oil, or coal—in a fashion that reflects the true cost to society of producing and distributing these resources. It is clear that the commonly used methods of pricing electricity and natural gas do not satisfy this criterion. The legislation you are considering goes a long way towards ensuring that such pricing schemes become national policy.

ELECTRIC RATE DESIGN POLICIES

Massachusetts supports the provisions of the bill that would require state regulatory authorities to prescribe methods for determining costs of service and that require those methods to reflect differences in cost-incurrence attributable to daily and seasonal time of use. We are concerned, however, that Parts (b) (1), (2), and (3) of Section 512 will be construed to mean that regulatory authorities must adopt long-run incremental cost (LRIC) pricing. While LRIC may be a useful concept in some cases, there are many situations in which it is not warranted. I do not think it is necessary to make a change in the language of the bill, but it would be appropriate if the legislative history of the bill showed that it was not intended that the LRIC method be mandatory.

We strongly support the provision prohibiting declining block or other promotional rate structures. I understand that in the House version this was amended to include an exception something on the order of "except where demonstrated to be based on cost of service". We would oppose such an exception. While this might seem somewhat contradictory to my earlier remarks concerning cost-based rates, we feel it should be a matter of policy that promotional discounts be prohibited.

We also support Part 2(A) of Section 513 requiring utilities to offer time-of-day rates and load management systems if the customer is willing to pay for metering costs. We would not want this to be interpreted to mean, however, that only customers who want time-of-day rates will get them. Regulatory authorities clearly should have the authority to mandate time-of-day rates for certain customer classes and to place the associated costs in the rate base. We understand that this section is included so that small users may take advantage of time-of-day rates.

We support the provision prohibiting master metering in new construction. We have evidence that master metering results in wasteful use of electricity. An internal Boston Edison study, for example, compared the use of air conditioning in individually metered versus master metered apartments. During

a typical summer hot spell, air conditioners were left on during the day in 87% of the unoccupied master metered apartments. In individually metered units, only 10% of the air conditioners were left on while the residents were out for the day. Boston Edison estimates that over 29,000 kilowatts of electricity is being wasted during the period of critical peak demand. This results in excess costs to the utility—and to all the ratepayers—of over \$3 million.

Another study by the Midwest Research Institute estimated that consumption by master metered tenants can be predicted to be 21% higher than for individually metered tenants.

We would recommend adding another provision to this section. This would state that if existing apartments are converted from master metered to individually metered apartments, the apartment units must be brought up to comply with an energy efficiency standard, such as the ASHRAE Standard 90-75. We are beginning to find indications that some landlords are converting units to reduce the utility costs associated with poorly built structures. These costs are in turn borne by the tenants. While we support the idea of individual metering, we feel that it should take place within efficient structures, so that tenants are not faced with extraordinarily high utility bills.

BULK POWER SUPPLY

We support the provisions of Subpart 3 of this bill, and are especially pleased to see incentives given for cogeneration facilities. We feel that this type of facility has great potential for improving the energy efficiency of the country, and we think that these provisions will help to remove some of the institutional barriers to their construction.

NATURAL GAS RATE DESIGN POLICIES

As in the case of electricity rates, we support the provisions of this section, although we would make some changes. We would add a part (3) to Section 544(b) stating that such proposal shall be accompanied by an analysis of the effect, if any, on revenue stability and financial health of the gas utilities. I believe that Mr. Edward Berlin, of the New York State Public Service Commission, addressed this point during his testimony before this Committee and so I shall not go into detail on this matter.

We have some concerns with the schedule put forth in this Subpart of the bill. Section 548(2)(A) calls for the state regulatory authority to report within two years on progress towards the policies and rules set forth by the Administrator. Yet, according to Section 545, these rules are not to be established before two years have passed. In short, the state must satisfy rules during the same period in which the rules are being written. If this approach of having a federal oversight is adopted, the reporting and review schedule should be made consistent.

This point raises a larger question, however. This is whether the federal government should be involved in the oversight of the provisions put forth in this bill, both in the natural gas and the electricity sections. Alternative methods have been proposed for ensuring that the rate policies adopted in this legislation are carried out, but without creating the need for an extensive federal review process. The House version of this bill, as well as the Brooke and Durkin bills before this Committee, provide for the right of individuals and state agencies to intervene in state regulatory proceedings concerned with these issues. It is our opinion that this form of self-enforcement is preferable and we would recommend its inclusion in the bill.

§. 1300

Turning now to Senator Durkin's bill, §. 1300, some of the provisions are similar to the President's bill, but I would like to mention some of the others.

Section 203(A)(5)(C), requiring a comparison of current consumption with consumption during the same billing period the previous year, would be a very effective stimulus to energy conservation. We recommend that this provision be included in the Committee's report.

We also support Part 6 of the same section, prohibiting promotional, political, and institutional advertising. These are clearly inappropriate costs to be charged to customers. While utilities have a constitutional right to expression,



United States
of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 95th CONGRESS, FIRST SESSION

SENATE—Monday, August 1, 1977

(Legislative day of Tuesday, July 19, 1977)

The Senate met at 3 p.m., on the expiration of the recess, and was called to order by Hon. ROBERT C. BYRD, a Senator from the State of West Virginia.

PRAYER

The Chaplain, the Reverend Edward L. R. Elson, D.D., offered the following prayer:

The effectual fervent prayer of a righteous man availeth much.—James 5:16b.
Let us pray.

Eternal Father, whose we are and whom we serve, at the opening of a new week we pray fervently to qualify us for the tasks before us. Where we are weak, make us strong. Where we lack wisdom, impart to us Thy higher wisdom. Where we are lacking in righteousness, set us on the righteous course that in and through Thee we may avail much. Grant us Thy grace that we may exert our best effort to complete the American Revolution, fulfill the vision of the Founding Fathers, and advance Thy kingdom on Earth. And to Thee shall be the praise and thanksgiving. Amen.

APPOINTMENT OF ACTING PRESIDENT PRO TEMPORE

The PRESIDING OFFICER. The clerk will please read a communication to the Senate from the President pro tempore (Mr. EASTLAND).

The second assistant legislative clerk read the following letter:

U.S. SENATE,
PRESIDENT PRO TEMPORE,
Washington, D.C., August 1, 1977.

To the Senate:

Under the provisions of rule I, section 3, of the Standing Rules of the Senate, I hereby appoint the Honorable DONALD W. RIEGLE, a Senator from the State of Michigan, to perform the duties of the Chair.

JAMES O. EASTLAND,
President pro tempore.

Mr. RIEGLE thereupon assumed the chair as Acting President pro tempore.

RECOGNITION OF LEADERSHIP

The ACTING PRESIDENT pro tempore. The Senator from Tennessee is recognized.

THE JOURNAL

Mr. BAKER. Mr. President, I ask unanimous consent that the Journal of the proceedings of Friday, July 29, 1977, be approved.

The ACTING PRESIDENT pro tempore (Mr. RIEGLE). Without objection, it is so ordered.

Mr. BAKER. Mr. President, I yield back my time under the standing order.

Mr. ROBERT C. BYRD. Mr. President, I am prepared to yield back my time.

PUBLIC FINANCING OF SENATE ELECTIONS

The ACTING PRESIDENT pro tempore. The question recurs on S. 926, which the clerk will state by title.

The assistant legislative clerk read as follows:

A bill (S. 926) to provide for the public financing of primary and general elections for the United States Senate.

The Senate resumed the consideration of the bill.

ROUTINE MORNING BUSINESS

Mr. ROBERT C. BYRD. Mr. President, I ask unanimous consent that there be a brief period for the transaction of routine morning business.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

PUBLIC FINANCING OF SENATE ELECTIONS

Mr. BAKER. Mr. President, as one of the primary participants in the effort to defeat S. 926, a bill to provide partial public financing, I was particularly pleased to read the Washington Post editorial printed yesterday. The Post editorial emphasized many of the same points that have been made repeatedly on the floor of the Senate in the past week of debate and speaks for itself.

Mr. President, I ask unanimous consent that a copy of the editorial be printed in the RECORD.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

CAMPAIGN MONEY AND PUBLIC TRUST

President Carter used familiar and fashionable language the other day in endorsing S. 926, the pending bill for partial public financing of Senate campaigns. He said the bill would "help restore the public's confidence and trust in officials" by removing "the appearance of obligation to special interests." Now, that sounds soothing—but this is no time for the Senate to relax. There is more than cosmetics involved here, and the effects of this legislation in its present form might not be as restorative as the advertising suggests.

Consider the matter of "special interests," which has become shorthand for corruption. Any two people could argue all day about which interest groups—bankers or doctors or unions or whatever—are "special" in the pejorative sense, and what their political role should be. Regardless of where one comes out, two points seem clear to us.

First, the most corrosive kinds of interest-group money, the huge, often covert donations such as those revealed in recent years, either have been illegal for decades or were curbed by the disclosure rules and contribution limits enacted in 1974.

Second, the role of political-action committees and big donors would not necessarily be reduced a whit by S. 926. Public matching of small private gifts would give Senate nominees less need to court big contributors. But the bill does not cover primaries, where some elections are settled and early, big donations can have the greatest effect. Moreover, as the Supreme Court emphasized last year, the First Amendment gives individuals and groups the liberty to spend as much as they want on independent, parallel campaigns for candidates. Last fall, while Mr. Carter's election drive was being publicly financed, labor unions were spending, by one estimate, over \$11 million independently on his behalf. So when Mr. Carter says that public financing for presidential campaigns "worked very well last year [pause . . . laughter]" without any of the candidates "being obligated to anyone," we get the joke—but not the argument.

The advocates of public financing also claim that it would open up the system and, in Mr. Carter's words, "help enable deserving candidates to run for office even if they are not rich." This also sounds good—but also raises large questions about the nature of political competition and the proper role of government.

It's true that competition is inhibited by the high and rising cost of getting political messages into the marketplace at all. If a candidate can't afford advertising, voters have no way to gauge whether he is "deserving" of support. Especially in primaries, one can justify more public-service broadcasts, publicly financed mailings and perhaps modest matching grants. But public-financing's advocates have much more in mind. They want to assure challengers not just basic access but equal funds. S. 926 would promote parity by setting spending limits as a condition of public aid. And if one candidate foregoes that aid and exercises his right to spend more in private money, his opponent would get extra subsidies.

What's wrong with this? For one thing, it reflects a simplistic view of the role of money in campaigns. More dollars don't always mean more votes. In the past five years, 17 men have come to the Senate the hard way, by beating incumbents; nine of those 17 won even though they were outspent. Beyond that, S. 926 would legislate a value judgment: Big spending is bad. But if a candidate with wealth or access to large sums does spend

provide suitable alternative work for loggers and others who may lose their jobs—in light of further study and what may be developed at Senate hearings. Senator **ABOUREZK**, chairman of the Parks and Recreation Subcommittee, has assured me that hearings will be set in September and that these hearings will focus primarily on how best to enhance job opportunities. I completely agree with him that they should, and I have urged that hearings be set as early in September as possible so that final action can be achieved on this legislation before October adjournment.

ADDITIONAL COSPONSORS

S. 79

At the request of Mr. **HELMS**, the Senator from New Mexico (Mr. **SCHMITT**) was added as a cosponsor of S. 79, relating to gold clause contracts.

S. 1297

At the request of Mr. **MATSUNAGA**, the Senator from New Mexico (Mr. **SCHMITT**) was added as a cosponsor of S. 1297, to guarantee that individuals receiving both veterans' pension and social security not suffer reduction of either benefit because of cost-of-living increase in the other.

S. 1540

At the request of Mr. **TOWER**, the Senator from New Mexico (Mr. **SCHMITT**) was added as a cosponsor of S. 1540, to amend the Davis-Bacon Act.

S. 1644

At the request of Mr. **PACKWOOD**, the Senator from Delaware (Mr. **ROTH**) was added as a cosponsor of S. 1644, to give tax equity to parents without partners.

S. 1692

At the request of Mr. **MELCHER**, the Senator from New Mexico (Mr. **SCHMITT**) was added as a cosponsor of S. 1692, to reform the Postal Service.

S. 1868

At the request of Mr. **MELCHER**, the Senator from Louisiana (Mr. **JOHNSTON**) was added as a cosponsor of S. 1868, the National Crude Oil Supply Act of 1977.

S. 1923

At the request of Mr. **ROTH**, the Senator from Oregon (Mr. **HATFIELD**) was added as a cosponsor of S. 1923, to amend the Consolidated Farm and Rural Development Act.

S. 1935

At the request of Mr. **ROBERT C. BYRD** (for Mr. **JACKSON**), the Senator from Wyoming (Mr. **HANSEN**), the Senator from Colorado (Mr. **HASKELL**), and the Senator from New Mexico (Mr. **DOMENICI**) were added as cosponsors of S. 1935, to provide emergency drought relief.

AMENDMENTS SUBMITTED FOR PRINTING

NATIONAL ENERGY POLICY— S. 1469

AMENDMENT NO. 746

(Ordered to be printed and referred to the Committee on Energy and Natural Resources.)

Mr. PERCY. Mr. President, since the turn of the century, electric companies have given the public more reliable service and ever-lower rates by building larger electric grids and generating stations. They have provided electric service unmatched in the world, and have fueled the growth of this Nation's economy.

In the last 5 to 10 years the economies of scale in the utility industry have ended. To expand production of electricity costs up to twice as much as the average cost of power. Central generating technology gives us a choice among expensive new oil imports, pollution problems with coal, or possible safety dangers from the atom.

We may be at the beginning of a new era in electric power production. There now exists an array of promising new small energy-producing technologies, all of which would supply electric power in small amounts, be operated locally, and be owned by individuals or small companies instead of by central electric utility companies. Preliminary assessments indicate they will have minimal environmental and safety problems. The systems include small-scale hydroelectric dams, cogeneration of industrial process steam and electricity, wind, and solar power.

Dow Chemical Co. and others calculate that cogeneration could by 1985 provide generating capacity equal to 40 to 60 large coal or nuclear powerplants. Existing dams could provide the equivalent of up to 2 dozen such plants, according to the Federal Power Commission. Mr. President, I ask that the full text of an article from the Chicago Tribune dated July 22, 1977 on the small hydroelectric work of Dr. David Lilienthal be printed in the RECORD at the end of my statement.

There is one institutional difficulty which could impede the implementation of these small technologies. Small dams, windmills, and other systems cannot replace central electric grids. Traditional utilities are needed to complement on-site power by providing backup power and by purchasing surplus power.

Some electric utilities, unfortunately, are uneasy about this new source of competition. Many are worried about the effects that technically unreliable equipment might have on their systems. Some fear solar generators would require expensive backup arrangements for critical peak periods, while eroding demand most of the time. For these reasons some utility companies refuse to interconnect with small power systems, or charge prohibitive electric rates. The most vivid recent example occurred in New York City. The State public service commission needed to issue a special order to Consolidated Edison Co. to connect with a windmill.

The Public Utility Holding Company Act and the Federal Power Act both make it difficult for a firm to sell electricity as a sideline to its main line of business. Moreover, the burden and cost of paperwork associated with filing as a public utility before State and Federal regulatory agencies could be prohibitive for many small power producers.

The Carter administration has taken note of these difficulties in its National

Energy Plan legislation, S. 1469. The President's bill provides suitable remedies for these problems for one type of small-scale technology: the cogeneration of industrial process steam and electricity. I commend the administration for its foresight in this area.

Unfortunately, cogeneration is only one of several frontier electric technologies. Protection must be given to the full array of new small-scale systems now being tested, lest unreasonable barriers block economically and technically effective technologies from commercial application. Our deteriorating energy situation mandates that we encourage all possible solutions.

For these reasons, Mr. President, I am submitting today an amendment to the National Energy Plan, S. 1469, which provides for all small electric power producers the protections which the President recommends for cogenerators. It also guards the interests of existing electric utilities.

My amendment contains the following provisions:

First. Electric utilities are required to provide power to small power producers, and purchase surplus power. The Secretary of Energy will establish rules governing these sales;

Second. Cost of service is mandated as the criterion for rates. This explicitly establishes that special treatment of small-scale power producers is permitted when electric companies can justify rates based on cost;

Third. Small-scale power producer is defined as any small electric facility whose owner is not primarily in the electric energy business. Technologies include, but are not limited to, cogeneration, small-scale hydroelectricity, solar electric systems, windmills, solid-waste facilities, and electric storage operated in conjunction with any of the above;

Fourth. The Secretary of Energy is allowed to exempt small power producers from provisions of Federal and State public utility law as is necessary to encourage these technologies;

Fifth. The Secretary of Energy is required to prescribe technical standards for small power systems. This protects electric utilities against poorly designed or unreliable equipment;

Sixth. The administration's requirement that small power producers allow the electric utility to operate the facility is deleted. This may be anticompetitive, and does not significantly add to technical standards protection;

Seventh. The amendment extends to all small power producers a guarantee—which is in the administration plan for cogenerators—that electric utility companies will transmit their power to third parties.

I note that this legislation will not preempt the authority of State regulators once the new regulations are promulgated. Case-by-case implementation of the rules will proceed on the State level. My amendment merely sets minimum standards, as do the other administration utility provisions; it shifts the burden of proof in rate discrimination cases from the small producer to the electric utility company.

THE ENERGY POLICY ACT OF 2005

HEARINGS
BEFORE THE
SUBCOMMITTEE ON ENERGY AND AIR QUALITY
OF THE
COMMITTEE ON ENERGY AND
COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED NINTH CONGRESS
FIRST SESSION

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FEBRUARY 10 and FEBRUARY 16, 2005
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I'd like to take a moment to talk about our differences in this room when it comes to energy policy. As our President said in his State of the Union address to the Congress last week, "four years of debate is enough." In recent months we have seen the spot market for oil reach above \$55 a barrel. Just three weeks ago the spot price for natural gas in the Northeast went as high as \$45 per MCF. We do not want to move from energy crisis to energy crisis. Through comprehensive energy legislation, we will take the steps to make sure America does not face energy rationing as we did in the late 70's. That crisis drove down jobs, transportation and quality of life. We will take the steps to protect against regional energy crises like those faced recently in California. That crisis diminished the California economy. Constriction on energy for the U.S. means loss of jobs, a weaker economy, greater dependence on unstable regimes, a weaker National defense and a lower quality of life. We must take the steps now to control our jobs, quality of life, and our National and economic security.

Today we are going to hear from a series of individuals representing agencies of the United States Government and various industry groups. I thank you all for your time. I know we have several panels of witnesses, all with expertise in your respective areas. We welcome all of your views with respect to this legislation and especially your guidance with respect to issues facing your industry as they relate to our nation and our people's energy security.

Mr. BOUCHER. Thank you very much, Mr. Chairman. I appreciate your organization today's hearing, and assembling 3 excellent panels of witnesses to inform the subcommittee during the course of this day.

Chairman Barton earlier this week circulated a discussion draft of comprehensive energy legislation, which is largely identical to the conference agreement that was achieved during the 108th Congress. Given the passage of time since the consideration of the bill last year, and the formation of that conference agreement, it is appropriate that we conduct these hearings to examine the need for legislation through the lens of the current energy market, and I appreciate the indication by the chairman that this will be the first of two hearings on the energy measure.

I supported passage of comprehensive energy legislation during the last two Congresses, and I continue to believe that the adoption of legislation is desirable. While I don't support all of the provisions of the conference report, there are a number of sections of the report that I think will, in fact, improve significantly our Nation's energy policy. The conference report from last year contains a number of non-controversial items, such as improvements to energy conservation, permanent authorization of the Strategic Petroleum Reserve, and the Northeast Home Heating Oil Reserve, and a number of research and development provisions. Of particular interest to me are sections which promote the use of clean coal technologies.

With natural gas prices at unprecedented highs, homeowners who heat with natural gas and a broad range of American industries, from agriculture to aluminum manufacturing, are feeling the effects. In my view, one of our most urgent items of business is taking the legislative steps required to incent electric utilities to lessen their reliance on gas in the new generating units they will be constructing.

And there is an obvious answer. Coal is the Nation's most abundant fuel, with reserves sufficient for the next 250 years. Coal generates electricity at less than one half the cost of the fuel alternatives, and consumers get the best prices when they consume electricity that is generated through the combustion of coal. New technologies such as integrated gasification combined cycle enable coal to be used for electricity generation in a manner that is as

clean as the combustion of natural gas. I commend the provisions and the draft legislation that would accomplish the goal of incenting coal use, and thereby relieving, to some extent, the pressure on natural gas prices.

With regard to the electricity title of the conference agreement and the draft legislation, I remain concerned about the total repeal of the Public Utility Holding Company Act without ensuring that adequate consumer safeguards, with strong Federal oversight remain in place. In addition, I have not been convinced that there is a need to give the Federal Energy Regulatory Commission authority to cite transmission lines. I am pleased, however, that during the last Congress, we were able to reach a compromise regarding the application of PURPA, and the legislation contains the non-controversial and much-needed section that would make transmission reliability standards both mandatory and enforceable. I think we need to learn more about the practical effect of the change to that section that is made in the discussion draft, which would cap the spending allowed for implementation of the reliability standards.

Today, we are hearing from 3 distinguished panels. They will be covering a wide variety of topics related to national energy policy. I welcome them, and thank you, Mr. Chairman, for assembling them.

Mr. HALL. Thank you. At this time, we recognize Chairman Barton, Energy and Commerce Committee, for as much time as he consumes.

Chairman BARTON. Well, thank you, Chairman Hall. I appreciate you holding this hearing. Today and next week, a fair number of the audience will have testified by the time we get through with it. We are really reaching out to get a lot of perspective on the bill. I see my good friend, the former Senator from Alaska, now the Governor, Mr. Murkowski, in the audience. I remember sitting in his office 4 years ago with former Chairman Tauzin, trying to figure out how to get that energy conference bill out of the conference. So we are starting the process today, and especially my friends on the Democratic side of the aisle, I want to encourage them to listen. I am strongly, strongly, strongly thinking about doing a very open markup. I would love to improve this bill and take it to the floor, with strong bipartisan support, and a lot of what we hear in the next two—this hearing and the next hearing—is going to make a determination whether we do a markup, and how we structure it. But this is like the Energizer Bunny commercial. This is the bill that will not die, and this is the year, and this is the Congress that we are going to pass comprehensive energy legislation, so I would strongly encourage all my friends on both sides of the aisle, not just the Democratic side, to really participate in these hearings, because you know, I think an open process is the better process, and I would love to have a markup where we can improve last year's work product, and then take that product to the floor.

With that, Mr. Chairman, I appreciate your leadership, and look forward to the hearings today and next week.

[The prepared statement of Hon. Joe Barton follows:]

PREPARED STATEMENT OF HON. JOE BARTON, CHAIRMAN, COMMITTEE ON ENERGY AND COMMERCE

I want to thank Chairman Hall for holding this hearing today on the Energy Policy Act of 2005. I also want to welcome Governor Murkowski of Alaska, Chairman Carrillo of the Texas Railroad Commission, Chairwoman Showalter of the Washington Utilities and Transportation Commission and Assistant Secretary Garman. Chairman Hall has been able to assemble some very distinguished panels today.

This is the second of our scheduled hearings to address this important legislation. Yesterday we heard from Secretary Bodman on the energy bill. Beginning today, we will hear from elected officials and stakeholder groups. As I stated yesterday, many of us in this room, Republicans and Democrats alike, have worked very hard on the provisions contained in the conference report on which we will take testimony today. The bill before us is not perfect, but it's balanced. It has been open to the public since November 2003, has been passed by the House with large majorities twice and received 53 votes in the Senate. So there must be a lot of good policy in it.

Today we will hear testimony on the electricity and energy efficiency provisions. Both titles received a large amount of support from policy-makers and experts. Our investor-owned utilities, public power, the power generators, and the co-ops—all those who provide electricity to our nation's industrial, commercial and residential users—supported the electricity title. In fact, it's the first electricity title supported by all these groups.

The energy efficiency provisions likewise received wide support from policy-makers, experts, and those in the business of making more effective and efficient use of energy. Few people disagree with the need to conserve and save energy where appropriate.

So today, we invite your comments and suggestions on these provisions. All changes will be considered carefully and fairly. We must recognize that any changes made must improve the chances of the bill becoming law. I agree with our President, four years is long enough for an energy bill.

One additional comment on our effort to control costs of the bill. As everyone in this room knows, we rely on CBO scores to determine the cost of the bill—whether we agree with the score or not. In fact, we wrote a letter to the CBO protesting the score of both the reliability provisions in the electricity title and the Energy Savings Performance Contracts in the energy efficiency title. We tried to cap the score at \$500 million each to address the score only—not because we think we need a less reliable electricity grid or that savings to our government from lower energy costs should be limited.

Finally, we need to recognize access to energy supplies is a critical concern around the world. China, India, and Brazil are all using greater and greater amounts of coal, oil and gas. Dependence on foreign sources of these fuels is becoming riskier and more dangerous to America's dynamic economy. This energy bill is vital to the continued prosperity of the United States. It will allow America to take control of its energy future and ensure that all Americans have access to abundant supplies of clean, affordable energy to power their homes and jobs. I look forward to the comments of these testifying today.

Mr. HALL. Thank you, Chairman Barton. At this time, I recognize the Dean of the House, the longtime, venerable Chairman of this Committee, Dean of the House, but not the oldest Member in the House, John Dingell, for as much time as he consumes.

Mr. DINGELL. Thank you, Mr. Chairman. I will respect the limits of the time of the committee. First of all, thank you for recognition. Second of all, I am pleased to see we are moving toward developing a comprehensive energy policy for the committee and for the country.

We are faced with pressing energy issues. It is very appropriate that this committee, with its expertise in these matters, should be the starting point for all discussions. Unfortunately, by starting with last year's failed conference report, we are sending the signal that the Congress is not serious about developing a sensible energy plan, but rather intent upon peddling the same tired special interest laden bill that the Senate rightly rejected last year.

While not within this committee's jurisdiction, EEI also supports inclusion of several important tax provisions in an energy bill that will help increase investment in and strengthen our energy infrastructure, and promote the development of new technologies, including renewables.

We do have concerns with a couple of budget-related limitations that appear in the reliability and energy efficiency sections of the discussion draft, which were not included in last year's conference report. We look forward to working with you and your staff to resolve those issues. And in conclusion, we commend you for getting the ball rolling again on energy legislation. The need for a bill is greater now than ever, and we certainly look forward to working with the committee on this important issue.

[The prepared statement of Thomas R. Kuhn follows:]

PREPARED STATEMENT OF THOMAS R. KUHN ON BEHALF OF THE EDISON ELECTRIC INSTITUTE

Mr. Chairman and Members of the Subcommittee: My name is Tom Kuhn, and I am President of the Edison Electric Institute (EEI). EEI is the association of U.S. shareholder-owned electric utilities and industry affiliates and associates worldwide. We appreciate the opportunity to testify on energy policy legislation. The House Energy and Commerce Committee deserves a great deal of credit for its years of effort to produce legislation to address this nation's long-term energy needs.

EEI supported the energy bill conference report approved by the House of Representatives in the 105th Congress, and we urge the House to approve a similar bill again as soon as possible this year.

We recognize that every stakeholder would probably change something in last year's H.R. 6 conference report, which we understand will serve as the basis for the House bill this year. However, the conference report is the product of years of hearings, debate and negotiations. While we continue to talk about energy issues, high energy prices continue to be a heavy burden on American consumers and businesses. We need an energy bill now more than ever. The most important thing now is for Congress to move forward and finish the job as soon as possible.

PROMOTE FUEL DIVERSITY

Fuel diversity should be a cornerstone of our national energy policy. Having a broad array of fuel resource options available—including coal, nuclear, natural gas, hydro, and renewables—is an important hedge against supply disruptions and price volatility, thus benefiting consumers, the economy and the environment. It is critically important to our industry to have all of our fuel resources as viable, affordable options. The H.R. 6 conference report will promote the full range of energy supply options, so it should be supported.

Coal is a fuel source for more than 50 percent of the electricity generated in the United States. It is abundant, affordable, and increasingly clean, with significant improvements in pre- and post-combustion emission reduction technology. Clean coal technology development and maintaining coal's ability to compete on costs are key drivers to our future ability to use coal, and the bill includes important provisions to help achieve these goals.

Nuclear energy provides 20 percent of this nation's electricity and offers the environmental advantage of being emission free. The conference report's provisions on Price-Anderson reauthorization and advanced reactor development are among those that will help maintain the viability of the nuclear power option for decades to come.

The electric utility industry shares the concerns that many have about the cost and availability of natural gas. Roughly 18 percent of total current electricity generation is gas-fired, and in the past decade 53 percent of new plants have been gas-fired. Gas offers several advantages for generation, including lower emissions than other fossil fuels, and lower capital costs and regulatory barriers for plant siting and construction. The H.R. 6 conference report included several important incentives for increased domestic gas exploration and production, and we understand this year's bill will be updated with additional measures to promote adequate supply.

Renewables, where available, can also play an important role in fuel diversity. Their most attractive feature is their obvious environmental benefits. While capital costs are currently high, electricity generation from renewables typically depends on

OTHER ELECTRICITY REFORMS

PURPA Reform

The mandatory purchase obligation of the Public Utility Regulatory Policies Act (PURPA) should be reformed. Most significantly, PURPA has subjected consumers to higher electricity prices. Utilities are required to purchase power produced from PURPA qualifying facilities, regardless of whether that power is needed or whether it is more expensive than alternative power supplies. PURPA's mandated, long-term contracts are costing electricity consumers nationally nearly \$8 billion a year in higher electricity prices.

PURPA also has failed to achieve its objective to promote the use of renewable energy. Today, approximately 80 percent of all power produced by PURPA facilities is generated using natural gas, coal or oil. Fossil fuels, not renewable energy resources, have been PURPA's primary beneficiaries.

In addition, significant abuses have occurred under PURPA, particularly with respect to cogeneration facilities. There is no requirement under FERC's regulations that a cogeneration facility's thermal output be useful or economic. As a result, what are essentially exempt wholesale generators have been allowed to masquerade as PURPA qualifying facilities in order to have a guaranteed market for their power at government-set prices.

The PURPA reform provisions in the H.R. 6 conference report represent a delicate compromise that is the result of long, difficult negotiations among the major PURPA stakeholders. EEI continues to support these provisions, as it expects other stakeholders to do.

FERC Lite

EEI believes that *all* transmission-owning utilities, no matter what their ownership type, should be subject to the same level of FERC regulation to assure fair, open access for all market participants to the transmission grid. After all, electrons move on the grid according to the laws of physics, without recognizing changes in ownership type. Thus, we believe FERC rules should apply to all users of the grid.

While they are weaker than we would prefer, the "FERC lite" provisions of the H.R. 6 conference report represent a step toward this ultimate policy goal and should be included in any energy bill.

FERC Refund Authority

The California energy crisis clearly demonstrated that retail electricity consumers would be much better protected by making all electricity suppliers, not just shareholder-owned utilities, subject to FERC refund authority. This would ensure that prices charged for wholesale electric power sales, regardless of the seller, must meet FERC's "just and reasonable" standard. EEI supports language in the H.R. 6 conference report authorizing FERC to order refunds from the largest government-owned utilities for short-term sales.

FERC Merger Authority

Mergers among electric utilities and with other energy companies can lower operating costs, diversify the products and services companies are able to offer to consumers, and increase efficiencies. However, electric utility mergers are among the most heavily regulated of all industries, and the federal merger review process is costly, time-consuming and duplicative. EEI supports measures to streamline FERC's current merger review process to eliminate duplicative federal review and bring it more in line with the process used for other industries. The H.R. 6 conference report's provisions clarifying FERC merger authority, expediting the Commission's review process, and directing DOE to study additional ways to eliminate duplication and improve the process are consistent with this goal.

Native Load Protection

Under the Federal Power Act (FPA), FERC is responsible for preventing the exercise of market power in competitive wholesale markets and developing the rules for such markets. However, any FERC analysis of market power in wholesale markets should take into account existing commitments and obligations under state law and state policies relating to service obligations, resource procurement, resource adequacy, fuel supply choices and environmental aspects of generation.

Federal regulators should recognize the retail service obligations of utilities and promote policies consistent with those state-imposed obligations. The native load service obligation provision in the H.R. 6 conference report assures transmitting utilities holding firm transmission rights that giving priority to serving this "native load" does not constitute undue discrimination under the FPA.

tion to repeal. We also strongly oppose limitations placed on the exercise of FERC's merchant review authority.

Finally, instead of Congressional directive identifying and prohibiting a specific electric trading practice, as is contained in the conference report on H.R. 6, we believe the Commission should be authorized to undertake a rulemaking proceeding to identify all practices intended to manipulate the wholesale market, and Congress should then authorize the Commission to levy significant penalties, including the withdrawal of the privilege of selling power at market-based rates for entities that are engaged in these practices.

That concludes my summary, Mr. Chairman. Thank you very much.

[The prepared statement of Alan H. Richardson follows:]

PREPARED STATEMENT OF ALAN H. RICHARDSON, PRESIDENT AND CEO, AMERICAN PUBLIC POWER ASSOCIATION

Chairman Hall, Ranking Member Boucher, and members of the Subcommittee, my name is Alan Richardson, and I am the President and Chief Executive Officer of the American Public Power Association (APPA). Thank you for the opportunity to appear before you today to discuss APPA's views on comprehensive energy legislation.

APPA is the service organization for the nation's more than 2,000 community-owned electric utilities that serve over 43 million Americans. The utilities include state public power agencies, municipal electric utilities, and special utility districts that provide electricity and other services to some of the nation's largest cities such as Los Angeles, Phoenix, Seattle, San Antonio and Jacksonville, as well as some of its smallest towns. Indeed, the vast majority of these utilities serve small and medium-sized communities in 49 states, all but Hawaii. In fact, 75 percent of publicly owned electric utilities are located in communities with populations of 10,000 people or less.

Public power systems were created by state or local governments to serve the public interest. More than 500 public power systems have, or by the end of this year will have, celebrated their 100th anniversary. One of the most fundamental values that all APPA members share is local control. Like public schools, police and fire departments, and publicly owned water and waste water utilities, public power systems are locally created governmental institutions that address a basic community need: the provision of an essential public service at a reasonable price. Public power systems share the core mission and obligation to provide reliable and low-cost electric power to their retail and wholesale requirements customers, consistent with good environmental stewardship, and to do so year in and year out. Because they are locally controlled, the interests of public power systems are aligned with the long-term interests of their respective customers and communities.

Publicly owned utilities also have an obligation to serve the electricity needs of all their customers. They have maintained this "obligation to serve," even in states that have introduced retail competition. Public power's ongoing commitment to its service obligation in these local communities requires it to pay attention to long-term infrastructure needs. Because infrastructure is so critical to the future of the electric industry in general, and public power systems specifically, APPA can only support legislative initiatives that bolster our members' commitment to maintain existing infrastructure and to enhance their ability to develop needed new infrastructure. Without adequate transmission and generation infrastructure, public power cannot meet its service obligations.

APPA has consistently supported a comprehensive approach to energy policy. APPA has continually asserted that there are a number of areas where the Administration and Congress should act to enhance the viability of traditional fuels used to generate electricity, promote the commercialization of new, alternative sources of electricity, increase energy conservation, and provide adequate energy assistance to low-income households.

The 109th Congress is now underway and the debate on comprehensive energy legislation is set to be renewed. The Conference Report for H.R. 6, 108th Congress, will serve as the foundation for the upcoming debate on energy legislation in the House of Representatives, while the other body is taking a step back from legislation previously considered to determine whether the proposals advanced in the last

and growth strategies. Public power systems are willing and able to invest in transmission facilities provided they receive the concomitant long-term transmission rights. APPA would urge Congress to explore avenues to encourage joint ownership of new transmission facilities by all load-serving entities in a region, be they public or private.

Voluntary Transmission Pricing Plans (Sec. 1242)

Commonly known as the "participant funding" provision, this section of the H.R. 6 Conference Report enables investor-owned transmission owners, RTOs and ISOs to propose transmission pricing plans for transmission upgrades that FERC must approve. While the section is very convoluted (which is in itself a problem), the practical effect is that virtually all transmission facilities deemed to be needed for "economic" purposes (rather than "reliability" purposes) would be funded by the party requesting transmission service, even if many other transmission customers would benefit from these same facilities.

APPA remains strongly opposed to this provision of the Conference Report. APPA believes that this pricing scheme should not be mandated and that Congress should respect the diversity and flexibility of each region to address this issue as it sees fit. FERC is allowing each RTO to develop, through a regional collaborative process, the pricing plan for new transmission facilities applicable in that region. A form of participant funding is, for example, being used in PJM, while the New England ISO has adopted a very different method, and the Southwest Power Pool RTO is developing yet a third approach. Hence, this mandate is both unnecessary and potentially counterproductive. It could also stall the development of new transmission facilities, thus potentially impacting the overall reliability of the bulk electric power system.

Amendments to PURPA (Subtitle E)

This subtitle contains language that addresses the termination of mandatory purchase and sales requirements. The provisions direct FERC to issue a rulemaking, within 180 days from enactment, revising the criteria for new qualifying cogeneration facilities seeking to sell electric energy. They mandate that this rulemaking shall insure the thermal energy output is used in a productive and beneficial manner, as well as meeting other criteria, and direct state regulatory authorities and electric utilities to make available, upon request, real-time pricing and net-metering services. APPA believes these provisions have been carefully crafted and support their inclusion in future legislation.

Repeal of PUHCA (Subtitle F)

The Public Utility Holding Company Act of 1935 (PUHCA) is repealed twelve months after the date of enactment of the bill. APPA strongly opposes repeal of PUHCA unless FERC is simultaneously given the authority to address the probable consequences of repeal.

Opponents of the Holding Company Act have been calling for its repeal ultimately since its enactment 70 year ago. Today, PUHCA repeal is advanced, in part, to address the perceived needs of a disaggregated and restructured industry that was envisioned in the almost euphoric deregulation climate of the late 1990s. PUHCA was enacted to protect investors and consumers from abusive and market manipulative activities and to ensure effective regulation of utility holding companies controlling vertically integrated utilities. A few years ago it was believed that the vertically integrated utility model of the past would soon be displaced by a multitude of participants, each with a different focus—transmission, generation, distribution, marketers, etc. As a result, the need for PUHCA would disappear. However, the envisioned industry transformation has not occurred and indeed public utilities are now pursuing a "back to the basics" strategy, which includes a return to the vertically integrated structure of past decades. In other words, the industry structure is precisely the structure PUHCA was created to regulate in order to protect the interests of investors and consumers.

Advocates of PUHCA repeal also characterize the Act as an impediment to investment in the industry. A report a year ago from Standard & Poor's noted that this argument "does not seem to hold much water after the power generation market imploded." S&P went on to note that investors have a solid appetite for companies with stable, regulated revenues.

A point on which almost all agree is that PUHCA repeal will promote further consolidation within the industry. Consolidation and a reduction in the number of industry participants will not promote a more competitive market.

Among the provisions that should be considered to accompany PUHCA repeal, if repeal is still deemed good public policy, are: explicit authority for FERC to review transfers of generation assets, utility holding company mergers and consolidation of natural gas and electric utilities; enhancement of FERC's existing merger review au-

The following pages contain relevant excerpts from the “conference agreement” that Mr. Boucher refers to on page 4 and that Chairman Barton refers to on page 6 of the hearing excerpts.

The purpose of including these excerpts from the 2003 bill is to demonstrate that the “delicate” (EEI) and “carefully crafted” (APPA) compromise provisions referred to in the 2005 hearing transcript include the final enacted version of PURPA section 210(m)(1).

108TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
1st Session } { 108-375

ENERGY POLICY ACT OF 2003

NOVEMBER 18 (legislative day, NOVEMBER 17), 2003.—Ordered to be printed

Mr. TAUZIN, from the committee of conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 6]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 6), to enhance energy conservation and research and development, to provide for security and diversity in the energy supply for the American people, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment, insert the following:

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) *SHORT TITLE.*—This Act may be cited as the “Energy Policy Act of 2003”.

(b) *TABLE OF CONTENTS.*—The table of contents for this Act is as follows:

TITLE I—ENERGY EFFICIENCY

Subtitle A—Federal Programs

- Sec. 101. Energy and water saving measures in congressional buildings.*
- Sec. 102. Energy management requirements.*
- Sec. 103. Energy use measurement and accountability.*
- Sec. 104. Procurement of energy efficient products.*
- Sec. 105. Energy savings performance contracts.*
- Sec. 106. Energy savings performance contracts pilot program for nonbuilding applications.*
- Sec. 107. Voluntary commitments to reduce industrial energy intensity.*
- Sec. 108. Advanced Building Efficiency Testbed.*
- Sec. 109. Federal building performance standards.*
- Sec. 110. Increased use of recovered mineral component in federally funded projects involving procurement of cement or concrete.*

90-300

(i) **PRIOR STATE ACTIONS REGARDING SMART METERING STANDARDS.**—

(1) **IN GENERAL.**—Section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) is amended by adding at the end the following:

“(e) **PRIOR STATE ACTIONS.**—Subsections (b) and (c) of this section shall not apply to the standard established by paragraph (14) of section 111(d) in the case of any electric utility in a State if, before the enactment of this subsection—

“(1) the State has implemented for such utility the standard concerned (or a comparable standard);

“(2) the State regulatory authority for such State or relevant nonregulated electric utility has conducted a proceeding to consider implementation of the standard concerned (or a comparable standard) for such utility within the previous 3 years; or

“(3) the State legislature has voted on the implementation of such standard (or a comparable standard) for such utility within the previous 3 years.”

(2) **CROSS REFERENCE.**—Section 124 of such Act (16 U.S.C. 2634) is amended by adding the following at the end thereof: “In the case of the standard established by paragraph (14) of section 111(d), the reference contained in this subsection to the date of enactment of this Act shall be deemed to be a reference to the date of enactment of such paragraph (14).”

SEC. 1253. COGENERATION AND SMALL POWER PRODUCTION PURCHASE AND SALE REQUIREMENTS.

(a) **TERMINATION OF MANDATORY PURCHASE AND SALE REQUIREMENTS.**—Section 210 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 824a-3) is amended by adding at the end the following:

“(m) **TERMINATION OF MANDATORY PURCHASE AND SALE REQUIREMENTS.**—

“(1) **OBLIGATION TO PURCHASE.**—After the date of enactment of this subsection, no electric utility shall be required to enter into a new contract or obligation to purchase electric energy from a qualifying cogeneration facility or a qualifying small power production facility under this section if the Commission finds that the qualifying cogeneration facility or qualifying small power production facility has nondiscriminatory access to—

“(A)(i) independently administered, auction-based day ahead and real time wholesale markets for the sale of electric energy; and (ii) wholesale markets for long-term sales of capacity and electric energy; or

“(B)(i) transmission and interconnection services that are provided by a Commission-approved regional transmission entity and administered pursuant to an open access transmission tariff that affords nondiscriminatory treatment to all customers; and (ii) competitive wholesale markets that provide a meaningful opportunity to sell capacity, including long-term and short-term sales, and electric energy, including long-term, short-term and real-time sales, to buyers other than the utility to which the qualifying facility is interconnected. In determining whether a

meaningful opportunity to sell exists, the Commission shall consider, among other factors, evidence of transactions within the relevant market; or

“(C) wholesale markets for the sale of capacity and electric energy that are, at a minimum, of comparable competitive quality as markets described in subparagraphs (A) and (B).

“(2) REVISED PURCHASE AND SALE OBLIGATION FOR NEW FACILITIES.—(A) After the date of enactment of this subsection, no electric utility shall be required pursuant to this section to enter into a new contract or obligation to purchase from or sell electric energy to a facility that is not an existing qualifying cogeneration facility unless the facility meets the criteria for qualifying cogeneration facilities established by the Commission pursuant to the rulemaking required by subsection (n).

“(B) For the purposes of this paragraph, the term ‘existing qualifying cogeneration facility’ means a facility that—

“(i) was a qualifying cogeneration facility on the date of enactment of subsection (m); or

“(ii) had filed with the Commission a notice of self-certification, self recertification or an application for Commission certification under 18 C.F.R. 292.207 prior to the date on which the Commission issues the final rule required by subsection (n).

“(3) COMMISSION REVIEW.—Any electric utility may file an application with the Commission for relief from the mandatory purchase obligation pursuant to this subsection on a service territory-wide basis. Such application shall set forth the factual basis upon which relief is requested and describe why the conditions set forth in subparagraphs (A), (B) or (C) of paragraph (1) of this subsection have been met. After notice, including sufficient notice to potentially affected qualifying cogeneration facilities and qualifying small power production facilities, and an opportunity for comment, the Commission shall make a final determination within 90 days of such application regarding whether the conditions set forth in subparagraphs (A), (B) or (C) of paragraph (1) have been met.

“(4) REINSTATEMENT OF OBLIGATION TO PURCHASE.—At any time after the Commission makes a finding under paragraph (3) relieving an electric utility of its obligation to purchase electric energy, a qualifying cogeneration facility, a qualifying small power production facility, a State agency, or any other affected person may apply to the Commission for an order reinstating the electric utility’s obligation to purchase electric energy under this section. Such application shall set forth the factual basis upon which the application is based and describe why the conditions set forth in subparagraphs (A), (B) or (C) of paragraph (1) of this subsection are no longer met. After notice, including sufficient notice to potentially affected utilities, and opportunity for comment, the Commission shall issue an order within 90 days of such application reinstating the electric utility’s obligation to purchase electric energy under this section if the Commission finds that the conditions set forth in subparagraphs (A), (B) or (C) of paragraph (1) which relieved the obligation to purchase, are no longer met.