

**BPA IN PROMOTING ENERGY CONSERVATION  
AND RENEWABLES**

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**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON WATER AND POWER  
OF THE  
COMMITTEE ON  
ENERGY AND NATURAL RESOURCES  
UNITED STATES SENATE  
ONE HUNDRED SEVENTH CONGRESS  
FIRST SESSION

TO RECEIVE TESTIMONY ON THE ROLE OF THE BONNEVILLE POWER  
ADMINISTRATION IN PROMOTING ENERGY CONSERVATION AND RE-  
NEWABLES

—————  
AUGUST 13, 2001

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SEATTLE, WA



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## **BPA IN PROMOTING ENERGY CONSERVATION AND RENEWABLES**

**MONDAY, AUGUST 13, 2001**

U.S. SENATE,  
SUBCOMMITTEE ON WATER AND POWER,  
COMMITTEE ON ENERGY AND NATURAL RESOURCES,  
*Seattle, WA.*

The subcommittee met, pursuant to notice, at 10:00 a.m. in the Commission Meeting Room, Port of Seattle, Pier 69, Hon. Byron Dorgan presiding.

### **OPENING STATEMENT OF HON. BYRON L. DORGAN, U.S. SENATOR FROM NORTH DAKOTA**

Senator DORGAN. This hearing will come to order.

My name is Senator Byron Dorgan, and I am chairman of the Water and Power Subcommittee of the Energy Committee of the U.S. Senate.

I am joined today by Senator Maria Cantwell from the State of Washington, who also is a member of the Senate Energy Committee, and we are pleased today to hold a hearing of the subcommittee here in Seattle, Washington.

The energy situation in this country is interesting and challenging, to say the least. All of us understand that there are things happening in America today that literally require the U.S. Congress to write a new energy plan. The House of Representatives has written a new bill. We in the Senate are in the process of writing a new energy bill, after which, of course, there will be a conference. Senator Cantwell and I participated with the Energy Committee in writing the first title to that bill just prior to the August recess. We wrote the research and development title, and following the August recess we will reconvene and complete our work on the energy bill.

It is quite clear not only from the standpoint of what has happened in California, but what has happened in other parts of the country as well, and also from the spreading from California to the entire West, and especially the Northwest, the energy situation in this country has been unstable, and we need a new plan.

The Northwest has some peculiar, interesting and unique characteristics about its' energy situation, and we do not want to write an energy bill in the U.S. Senate without fully understanding and considering the unique circumstances that exist here in the Northwest. We have a substantial amount of hydropower unlike most other areas of the country. You have purchased power from the wholesale market to blend with that hydropower and to extend

that hydropower, and of course, as that wholesale market has changed dramatically in California, that has had a profound impact here on the Northwest power supply and power price. My understanding is that you have been challenged and confronted with some rather substantial increases in electric rates recently, and perhaps again this fall if my understanding is correct, and all of that leads to the question what do we do about it? What kind of a sensible, thoughtful, nation-wide energy plan can we construct that is not only fair to the American people, but also is one that does not have a "yesterday forever" flavor to it.

It is clear to me that an energy plan must require some additional use of coal, that is digging, and discovery of oil and natural gas, that is drilling. So digging and drilling is part of a national energy plan, provided that we do that with thoughtful safeguards and thoughtful environmental protection, but if our energy plan is simply drilling and digging and nothing much more than that, it is truly only "yesterday forever," and that will not in my judgment represent the best interests of this country.

If I might just for a moment digress to say that my first car was a 1924 Model-T Ford that I bought and restored when I was a young boy, and it is interesting to me that you put gasoline in the 1924 model car exactly the same way you put it in a 2001 model car. Nothing much has changed in 76 years, and a week ago I was able to drive a fuel cell car, a car that puts hydrogen and air in one end, and out comes electricity and water. It is quite remarkable, and my hope is that our energy bill will not only be using coal, using clean coal technology, finding more oil and natural gas in environmentally sensitive ways, but also a plan that produces new opportunities for conservation, a plan that provides more renewable and limitless energy supplies, and one that promotes more efficiency. All of these elements must be part of a thoughtful energy plan, and let me again say that we cannot write an energy plan that is a national plan without understanding the unique characteristics of certain regions, and this region is certainly a region that has those unique characteristics, and Senator Cantwell has asked that we hold this hearing, and I am very pleased to do that for the purpose of making sure that the interests here are represented in the writing of a new energy plan.

We are joined by a professional counsel, the counsel of the Senate Energy Committee, Deborah Estes, and Jonathan Black, who is with the Energy Committee and helps us arrange hearings.

We are holding hearings in various parts of the country prior to the September completion of the writing of the energy bill, and as I said, I am very pleased to be here, and now let me call on my colleague, Senator Cantwell, for any comment she might have.

**STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR  
FROM WASHINGTON**

Senator CANTWELL. Thank you, Chairman Dorgan, and thank you for holding this hearing in the State of Washington to talk about how the Northwest fits into a larger energy bill and how we preserve some of the key interests of the Northwest in moving forward in a national energy policy.

I do have comments that I will submit for the record, so that I, we can get onto some of our panelists today, but I do want to make a few comments.

First of all, I want to thank you for spending your recess time in the Northwest to learn more about the unique reliance of our region on hydro and how we move forward on diversifying that and preserving our system at the same time.

I also want to thank you for your interest in the other problems in the State of Washington. This Water and Power Subcommittee, I am sure, could be of great assistance in the future to some of the challenges we are also seeing on the water issue, and I will submit some testimony on that, and from my understanding, the Northwest owes a great deal of thanks to you for yesterday throwing out the first pitch of the Mariner baseball game. That saved the Northwest from three losses in a row. Something that is very important for us. So thank you for being part of our winning baseball season, and thanks, I guess, initially go to your wife, who is an Everett native, for constantly bringing you to the Northwest to pay attention to a variety of our issues.

Today we are here to hear from a distinguished panel of people about the incredible challenges we face in the Northwest in regards to the energy challenges. We have seen in the last year some of our consumers facing as much as 50 percent rate increases with additional challenges this fall as Bonneville Power Administration implements its 46 percent rate increase.

You will hear from some of the panelists today about how we have maneuvered through that very difficult situation, and my hat is off to the many people who have worked together on conservation and curtailment programs and to the public who has weathered this very trying time, but we are here today to also talk about how we move forward on a 21st century energy policy that will allow smart technologies, conservation and new sources of energy to be part of the 21st century energy plan.

Mr. Chairman, I am starting on the process with Senator Murray, who also sends her thanks and well wishes for being in our State to focus on this issue. She and I have been working on a variety of things related to what may become a Northwest title to the energy plan, something that will include reauthorization of the REPI program, so that we continue to focus on renewable resources, making sure that BPA gets the borrowing authority it needs to continue to make sure that transmission needs are addressed in the Northwest, and the issues of hydro relicensing to make sure that that process is a more expeditious process in the future. These are all important issues to the Northwest and are critically important to the economy.

I think the main challenge that you will hear today is given our 70 percent reliance on hydropower in the State of Washington, given the fact that we just have suffered the second worst drought on record, how do we move forward with an energy plan that allows the great Northwest economy that you can see basically on these placards behind you, technology, power, agricultural, and transportation to benefit from an energy plan that moves us forward.

So again, I thank you for holding this hearing today, for bringing the Water and Power Subcommittee to the State of Washington to understand the unique challenges that we will face in putting together a Northwest title and an energy package that meets the economic needs of this region. So thank you.

[The prepared statement of Senator Cantwell follows:]

PREPARED STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR  
FROM WASHINGTON

Thank you, Mr. Chairman, and welcome to the great state of Washington.

My friend and colleague Senator Murray asked me to extend her greetings as well, to express her appreciation for your interest in this vital Northwest issue, and to offer her apology for not being able to attend today's hearing due to a scheduling conflict.

Mr. Chairman, I also want to thank you for taking time from your own busy recess schedule in your home state of North Dakota to come and learn about energy policy in the Northwest—and what the Northwest's unique experience can contribute to the national debate.

As you know, the Senate Energy and Natural Resources Committee has already started marking up comprehensive new energy legislation that will provide the foundation of the United States' energy policies and practices for many years to come.

How the Northwest fits into the new national paradigm without sacrificing its traditional leadership on renewable energy resources, conservation and energy efficiency, and what the nation can learn from the Northwest experience, are both vital questions that must be considered in that debate.

These are also questions that have sweeping ramifications for the economy of my state and my constituents' way of life.

We've all heard a lot lately about energy problems, and you'll hear more about those today. But our region, and our nation, must begin to take a close look not only at where we are today and how we got here, but also at where we want to be tomorrow and what we must do now to achieve that goal.

At today's hearing, Mr. Chairman, you will hear about more than the Northwest's energy problems. You'll also hear about opportunities, and about energy solutions being developed here that may have national applications.

In our discussion today, I believe there is a guiding principle we should follow. It is that the Northwest's system of low-cost, reliable power should foster a thriving, diverse economy; one that benefits all of our region's interests—commercial, residential, industrial and agricultural.

This principle is the bedrock of our regional economy and has yielded a proud history. As we look to the future, we must recognize the changing demands on this system and the changing national landscape around it, but there is one thing we must not allow to change: the fundamental value that has made this region great.

The Northwest power system has built our region, and it has served as a model for the rest of the country on many fronts. We'll hear about several of those innovations today, including such things as smart-grid technologies and the next generation of renewable energy resources.

As the Western energy crisis has made us all too aware, the health and efficiency of power markets has a direct impact on jobs and paychecks, the environment, and our quality of life. Here in the Northwest, we have a unique energy history centered on the Bonneville Power Administration (BPA)—an invaluable public resource charged with allocating output from the region's federal hydroelectric dams.

BPA and the low-cost hydropower it provides to domestic consumers, agriculture, business and industry has long been the engine driving our thriving regional economy. We should view this hydropower as a solid foundation on which to build. But as the demand for power has continued to grow and other pressures on our energy system have increased, we must look toward diversifying our generating resources.

On a related note, Mr. Chairman, the Subcommittee on Water and Power possesses jurisdiction over many other water issues that our region faces—with the competing demands of fish, people, agriculture and industry. While media coverage of the drought in Washington state has focused on the Yakima Basin and other areas in eastern Washington, we face upcoming water shortages in many of our western Washington communities, such as Issaquah, Kent and Sumner.

While short-term assistance is needed in our eastside agricultural communities, both sides of the state will benefit from longer-term planning that can apply creative solutions. These include:

- Building inter-ties between existing systems.
- Innovative reclamation projects like that of the Lakehaven Utility District in Federal Way, which may help maintain stream levels during droughts and recharge the aquifers without using additional surface water.
- Enhanced storage projects such as Tacoma Public Utilities' Howard Hansen Dam, which better serve both people and fish.
- A rededication to all forms of water conservation, including the leadership being shown by many of our irrigation districts throughout central and eastern Washington.

Indeed, water use issues are one of the most complex and difficult challenges facing our region, and they are an important part of our deliberations on energy policy here in the Northwest. As you know, Mr. Chairman, the comprehensive energy legislation that we will continue to work on when Congress reconvenes in September will include language on electricity—a topic of paramount importance for this region, given our reliance on BPA and the hydro-rich nature of our energy resources.

It is my hope that parties within the region will use this opportunity to join together to retain the benefits of our existing system. But as the Western energy crisis has clearly demonstrated, we must also keep our eyes focused on the future. We need to devise both regional and national solutions that will prevent this type of crisis—and the resulting economic devastation—from happening again.

While the national spotlight has been trained on California, the Pacific Northwest has been enduring severe economic impacts from this crisis: retail rate increases that have created hardships for both consumers and businesses, and job losses that already number in the tens of thousands. While prices have stabilized throughout the West, the worst is not yet over for this region. BPA will put in place a 46 percent wholesale rate increase this October.

Ironically, one of the most telling things about the severity of this crisis is that BPA's 46 percent rate increase actually came as a relief to Northwest ratepayers, who were expecting a 250 percent increase. In addition, no one is quite certain how our region will fare during the winter peak heating season, when supply is expected to be tight up and down the West Coast.

As a member of the Senate Energy and Natural Resources Committee, and this subcommittee, I have worked to draw attention to the unique circumstances of the Northwest and how the current crisis is affecting Washington state residents, industries and communities.

I will not dwell on those impacts today, because many in this room are all-too-well acquainted with those problems, having felt them personally at home and at work. I am pleased that Mr. Hickok of BPA is here to testify today, however, because I believe Bonneville has a compelling story to tell about precisely how California's flawed partial restructuring, combined with the drought, caused significant damage to the Northwest energy industry and economy.

At the same time, the circumstances that rendered BPA and our region susceptible to these impacts need further exploration. Under law, BPA is charged with supplying our entire region with "adequate, efficient, economical, and reliable" power.

Particularly in light of this crisis, I believe it's time for the Northwest to take a hard look at whether BPA has the tools it needs to fulfill this mandate. If the answer is yes, then how should BPA's resource acquisition and allocation policies be reformed to better accomplish this goal? If the answer is no, then how can the situation be remedied through federal electricity legislation?

Enhancing the reliability of our national and regional grid seems to be yet another part of the equation. The Northwest's transmission system is already severely constrained, and without significant infrastructure improvements it's not clear whether we will be able to get the additional generation on line that is so sorely needed to remedy the West's supply-and-demand imbalance. I look forward to hearing testimony today on the best way to address the issue of reliability—particularly for the Northwest—since it is yet another component of the legislation this Committee will consider next month.

In the 1970s, our nation experienced an energy crisis of similar proportions. Yet, as one elementary school student pointed out to me this spring, it doesn't seem as though the lessons we should have learned back then truly stuck. Thirty years have now passed, and in the interim the advent of new technologies and innovations have made the promise of a cleaner, more efficient and reliable energy system a real possibility.

Here in the Northwest—with BPA at the helm—we have historically been leaders in renewable energy development, conservation and energy efficiency. I believe that part of the solution for the Northwest includes diversifying our region's energy sup-

ply, which will render us less susceptible to drought. It's clear that we need a diversified energy portfolio that includes more traditional forms of supply. Increasing natural gas pipeline capacity in the Northwest will be key to serving the many plants that are planned for construction in the region—so long as the proper pipeline safety regulations are in place.

But the value of renewables to complement our existing hydro system cannot be overestimated. Just last week I visited the Stateline Wind Project outside Walla Walla, Washington. When it is complete, it will be the West's largest wind farm, generating more than 260 megawatts, enough energy to power more than 60,000 homes. The project is scheduled to go online by the end of December to take advantage of the existing wind energy tax credit, which expires at the end of the year.

Wind energy grows increasingly cost-competitive, and there are parts of Washington and other Western states with tremendous wind resources. These projects also provide an additional source of income to farmers, who lease land to developers while retaining the right to grow crops or graze cattle alongside the wind generators—an important benefit to the hard-pressed agricultural industry.

To continue supporting projects like Stateline while a market for wind energy is being created, I believe Congress must extend the existing tax credit. Further, to encourage public utilities—which can't take advantage of tax credits—to think more creatively about diversifying their energy supply, I am sponsoring a bill that will reauthorize the Renewable Energy Production Incentive, or REPI. The REPI program provides public utilities, rural co-ops and tribal governments, which account for about 25 percent of the nation's electric utility industry, with a direct, 1.5 cents/KWh payment for the generation of renewable power.

I also believe we must continue to vigorously pursue research and development initiatives that will make our existing energy infrastructure more efficient, more receptive to the addition of distributed power resources, and more reliable. Northwest businesses are global leaders in software and telecommunications, and I believe there is significant promise in bringing some of these technologies to bear on our power transmission grid.

During mark-up of federal energy research and development legislation earlier this month, I sponsored a bipartisan amendment with Senator Gordon Smith of Oregon, directing the Department of Energy, in cooperation with industry, to explore these new applications.

Mr. Chairman, it is often said that crisis breeds ingenuity, and it is clear to everyone here today that Northwest consumers and businesses have been hard-hit by skyrocketing energy prices. It is my hope that this hearing will begin a serious discussion that will allow the Northwest to seize the opportunity presented by federal legislation to preserve the benefits of our existing system, while also cementing our role as a region with innovative solutions to help meet our nation's energy needs.

Again, I'd like to thank you, Mr. Chairman, for holding this hearing, the Energy Committee staff for their work on this hearing, and the witnesses for appearing here today.

Senator DORGAN. Senator Cantwell, thank you very much. It is going to be very helpful to have Senator Cantwell on the Energy Committee as we write this legislation, and we are delighted she is there, and are, of course, working as well with Senator Murray on these issues.

We have a first panel today composed of Mr. Steve Hickok, Chief Operating Officer, Bonneville Power Administration, Portland, Oregon, Ms. Sharon Nelson, member of the board of trustees, North American Electric Reliability Council, Princeton, New Jersey, Mr. Harvard Spigal, partner, Preston Gates and Ellis in Portland, Oregon, and we will ask that you summarize. Traditionally, we try to have testimony last no longer than 5 minutes, and we have a light. There is not a trap door through which you will fall if you go over, but it allows us more time for questions if you are able to submit your entire statement for the record.

Mr. Hickok, this has been a remarkable and interesting time for Bonneville Power. I am sure you would agree. You have testified before the Energy Committee on a number of occasions. We appreciate you being here today, and why don't you proceed?

**STATEMENT OF STEVEN G. HICKOK, CHIEF OPERATING OFFICER, BONNEVILLE POWER ADMINISTRATION, PORTLAND, OR**

Mr. HICKOK. Thank you, Mr. Chairman, Senator Cantwell. I am the Chief Operating Officer of Bonneville.

Before coming to work for Bonneville in 1981, I was the staff director for the Republican side for the U.S. Senate Subcommittee on Energy and Natural Resources. Hardly a man or woman is now alive who remembers those famous days and years, but I frequently look back at that period of time, in the late 1970's. I look at some of the aspects of PURPA, the Powerplant and Industrial Fuel Use Act, the entire U.S. Synthetic Fuels Corporation effort, and am reminded of the extremes we can go to sometimes when we get infrastructure wrong. Infrastructure is that basic fabric that underlies American commerce and really supports our society. When something is wrong in that area, the response gets pretty emotional. The Acting Administrator, Steve Wright, and I have frequently been asked to come to the annual meetings of business associations this year on the west coast. I think every one of those associations wants a utility executive to come to the meeting and explain just what the heck is going on with electricity. And, those invitations come across with a certain amount of emotion.

I will submit for the record a standard response that I usually make in answering questions about what happened and how we got into this as well as a copy of my written statement for the record. I will also summarize one of the things we did back in the late 70's when Congress passed the Pacific Northwest Electric Power Planning and Conservation Act. I submit that is one of the things we got mostly right. It is the act that created for Bonneville a utility service obligation in the Pacific Northwest, something we did not have before then. Prior to the passage of that Act, Bonneville disposed of Federal hydro, such as it was available, almost as if it were a surplus Federal commodity. But the 1980 Act made Bonneville the backstop for supply in the Northwest and required us to serve the retailing utilities. We're a wholesaler. It required us to supply the power requested by retail utilities for their firm power loads and it defined conservation as a power resource.

Now, there were a number of utilities at the time in the country that were doing conservation, but largely they were doing it as a low-income assistance kind of a program. But, the Act was an unabashed, purely economic effort to develop conservation as a power plant. If it was less expensive to free up a kilowatt hour with an existing user than to invest in the new power plant, we did that. I was hired on at Bonneville in 1981 as the first vice-president in charge of conservation and renewables development for Bonneville, and we literally wrote the book on how to develop conservation as a power plant. We had to define it; we had to understand it in terms of what it was doing in our system, its energy and capacity factor, reserve requirements, and so forth. Because if you are going to invest in conservation, you have got to be sure it is there from a reliability standpoint when you need it.

Now, fast forward to 1992. Congress passed the Energy Policy Act in that year and set the electric utility industry on a course to the restructuring that we are now in the middle of. Congress basi-

cally said that we could separate electricity into a juice business and a wires business, with the wires being the natural monopoly. It said that if the wires business is operated as an open-access common carrier, we can develop a competitive wholesale market environment for sellers and buyers of electricity. In fact, in the West, which was surplus in capacity in the early and mid-1990's, this created a commodity environment. Bonneville was able to access markets in the western interconnection we had never had access to before, and our competitors were able to sell into the Northwest, which had been our backyard. In a surplus commodity environment, prices went into the tank. The next generation of power developers were supposed to be the merchants—not necessarily the integrated utilities who had the load serving obligation—but they didn't build the next generation of power plants. There has been hardly a dime's worth of power developed in the whole West coast since 1992.

We got way behind the eight ball in terms of supply, and one of the things that Bonneville noticed about the competition was that it did not have the cost of conservation in its megawatts. It did not have the “negawatts” in the “megawatts,” and Bonneville, which did, was viewed as uncompetitive. In fact, the Northwest Governors in their Comprehensive Review in 1996 decided that Bonneville should not acquire power resources anymore to serve load, that it should basically stick to what it had, and that others would be out there building power plants. Our customers rushed off to that admittedly wonderful, short-term market. But, what a difference a few short years makes. They all have come storming back to us for service. When we offered contracts for 2002, those customers who had gone off into the short-term market, basically taken service off of Bonneville, came back demanding the full extent of Bonneville's legal obligation to serve them. We found ourselves with 11,000 megawatts of business in 2002, and only about 8,000 megawatts of supply. When we turned to develop that supply, buying from the market the supplies that are necessary to make up the 3,000 megawatt gap, California imploded, and about that same time the drought hit the west coast.

In short, there are two things going on. First, there is the immediate drought situation. We got through this winter by basically buying out large industrial users of electricity, because it was cheaper to do that than buy power on the spot market. Second, as we turned to the prospect of developing supplies for the next 5 years, we found that in the first couple of years there just is not enough new supply coming on line to do much about the picture, at least from a reasonable price standpoint. California locked up a lot of power in long-term contracts that it signed just within the last year. So we again turned to the demand side of the equation, and working with our direct-service industries and with our utility customers, we backed about 2,000 megawatts of the demand off of the Bonneville system for 2002. Basically, that is how we handled the short-term supply crisis. But if I were to leave you with one strong message this morning that message would be that there is a long-term problem. We actually did not get into this shortage situation overnight, even though it almost seems like it sprang up on us overnight.

One of the things that was masking the problem West-wide was the fact that the Northwest has had good-to-fabulous water for the last 6 years. When we have good or better water, it affects the spot market price throughout the entire Western interconnection. The drought just ripped the mask off the supply problem. As we walked into this winter, we and everybody else in the Northwest, which is hydro-dominated, were buying heavily in that market, and we realized just how short we were.

There are three issues that are in front of us: first is infrastructure, meaning both the demand-side investment, notably conservation measures that can contribute to this, as well as the supply side. Also needed are the transmission lines, the gas lines and the power plants.

Second is the adequacy of the grid, whether you are talking about reliability; wholesale market efficiency; access for customers; transparency of markets; congestion management; the operating efficiency of the grid; the expansion, who is going to do it and what is the least cost expansion; and getting the right price signals for the grid. These problems are with us in spades right now. RTO's, regional transmission organizations, are the answer, but not just any RTO. One of the things that California showed us is how not to form an RTO, and the California ISO is not the model we would suggest. But a correctly formed regional transmission organization can address each of the seven or eight problems that I just ticked off, and we believe it is absolutely essential for the security, stability, and efficiency of the grid.

The third issue is retail engagement. Wholesale and retail markets are disconnected. We deregulated our way halfway into the middle. We have got a competitive market environment at wholesale. We do not at retail. There just is not any demand response to ten jillion dollar per megawatt-hour power at wholesale. I'm not saying that retail needs to experience real time pricing. If somebody wants to buy power flat 7 days a week, 52 weeks a year, they ought to be able to buy that product. But they also ought to be able to engage in a way that would make this grid and its power supply much more efficient. Because we do not experience costs that way at wholesale, flat, 7 days a week, 52 weeks a year, figuring out how to get out of this hybrid, the deregulated wholesale and the regulated, rolled-in retail, is a huge issue. If we stay in the middle, we will surely experience more of the kind of difficulty that we have got ourselves into since 1992. Eight years into restructuring, it is still not clear how we are going to get on through to retail. We either have to go back the way we came in or we have to get out on the other side. We cannot stay in the middle.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Hickok follows:]

PREPARED STATEMENT OF STEVEN G. HICKOK, CHIEF OPERATING OFFICER,  
BONNEVILLE POWER ADMINISTRATION, PORTLAND, OR

Mr. Chairman, distinguished members of the Subcommittee, my name is Steve Hickok. I am the Chief Operating Officer for the Bonneville Power Administration (Bonneville). We appreciate this opportunity to appear today and we thank the Subcommittee for its attention to the unique circumstances of the Northwest within the context of the national energy policy debate.

Mr. Chairman, arguably Bonneville has just come through the roughest year in its history. Wholesale market power prices in the Northwest hit levels ten times

higher than anything anyone had ever seen in the western grid. The unheard of happened in California with rolling blackouts under relatively light loads. Far from being able to help the Northwest during this winter's drought, California came looking for additional power from us to help it cope with its frequent power emergencies.

There were some scary days this past winter when the Northwest teetered on the brink of power shortages. In one 4-day period last January, we spent \$50 million on power purchases. These costs gave us a pretty strong signal that supply was drying up fast. Bonneville was forced to declare power system emergencies on three occasions this winter and extended emergency operations through the summer. High market power prices and significant increases in loads led Bonneville to project a potential wholesale rate increase for this fall of 250 percent or more.

Today, thanks to great regional cooperation, when our new rates go into effect in October, our customers will see an average rate increase of about 46 percent. Impacts at the retail level should be half of that or less. The region avoided economic disaster. We helped preserve system reliability, and Bonneville stayed financially solvent this year.

My purpose today is to address the basics of where we have been, what we have accomplished, and what the Pacific Northwest needs to do in the future to make sure that an energy crisis like we have experienced does not happen again. I also want to highlight for members of the Subcommittee that Bonneville has a unique historic role in the Northwest. As the Senate considers energy legislation this session, we would ask that Bonneville's role be carefully considered, particularly as it affects the future of the Northwest economy and the Columbia River.

#### BONNEVILLE'S PUBLIC MISSION

Bonneville is a not-for-profit Federal electric utility, under the U.S. Department of Energy, that markets wholesale electrical power and transmission services in the Pacific Northwest. The power comes from 31 federal hydroelectric projects located in the Columbia River Basin that are owned and operated by the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation. Bonneville also markets power from the Columbia Generating Station, a nuclear plant owned and operated by Energy Northwest. Close to half of the Northwest's electricity comes from Bonneville. Bonneville's transmission system accounts for about 75 percent of the region's high-voltage capacity. Bonneville also owns and operates portions of the large interties that ship and receive power from California, the Southwest, eastern Montana, and Canada. Bonneville's customers include publicly owned and investor-owned utilities, as well as some large industries. Bonneville also sells or exchanges power with utilities in Canada and the western United States.

Bonneville is a self-funding agency, which pays for its costs through power and transmission sales. Both power and transmission are sold at cost, including the cost of mitigating environmental impacts of the Federal hydro system. Bonneville repays any borrowing from the U.S. Treasury with interest at market rates.

Revenues Bonneville earns help it fulfill public responsibilities that include low-cost reliable power and investments in energy conservation and renewable resources. Bonneville also funds the region's efforts to protect and rebuild fish and wildlife populations in the Columbia River Basin.

#### BONNEVILLE'S NEW POWER SALES CONTRACTS

Bonneville's low-cost power is immensely attractive in today's market and demand for it exceeds our resources. By law, we have an obligation to serve every retailing utility in the Northwest, public and private, to the full extent of their net requirements, which is their retail load net of their own generating resources. Public utility districts, municipalities, cooperatives, and the residential and small farm loads of the investor-owned utilities have a preference status and qualify for our lowest firm power rate. We also have had a long tradition of serving directly some electricity-intensive industries, primarily aluminum smelters, although they are not preference customers.

With our current 20-year contracts with these customers expire this year, we negotiated new contracts in a 3-year regionwide process we called subscription. When this process culminated in October 2000, we had about 11,000 megawatts of load to begin serving on October 1, 2001, with only about 8,000 megawatts of resources in our system or under contract to us. As late as May 2000, that did not look like too bad a challenge. We could augment these resources by going to the market and melding that slightly higher priced power with our low-cost federal power. It appeared we could do that and hold the new rates quite close to the old rates.

But soon after, as we were about 1,000 megawatts into the augmentation effort, the wholesale electricity market took off for the moon.

## THE WEST COAST ENERGY CRISIS

A number of events conspired to set this off, the most notable being California's flawed approach to restructuring the State's power system. But the fundamental problem was the basic issue of supply and demand. Demand for electricity on the West Coast had increased over the last ten years with population growth and strong economic expansion. Throughout this period, there had been no significant building of new resources. And, for the last six years, this growing problem had been masked by good to extremely good water supplies in the Northwest hydropower system. This year's drought ripped that mask off.

By last December, wholesale electricity prices were sky high in the West. And what a winter we faced the California disaster on top of the second worst water year in the 77 years we have been keeping record. The Northwest teetered on the brink of blackouts.

## BONNEVILLE'S SHORT-TERM MEASURES TO DEAL WITH THE CRISIS

Overall, during the first nine months of fiscal year 2001, Bonneville spent over \$1.5 billion on purchased power, but even that was not nearly enough. It was only through such extraordinary measures as paying industrial plants to shutdown, buying power and water back from farmers, foregoing spill and flow augmentation for fish, and doing two-for-one power exchanges with California that netted water and energy for the Northwest, that we were able to meet reliability standards and preserve financial solvency.

I particularly want to note our appreciation to the U.S. Army Corps of Engineers, the Bureau of Reclamation, the National Marine Fisheries Service, and the Environmental Protection Agency, all of whom worked diligently to help to manage the hydro system through this challenging period. And Energy Northwest, which manages the region's nuclear plant, took extraordinary actions to keep power flowing this past winter and spring.

## BONNEVILLE'S LOAD REDUCTION EFFORT

We made it through the winter. But, while we had purchased considerable power to meet our loads in the upcoming contract period, we still needed to close a 2,000-megawatt gap. When we calculated the cost of continuing to arrange those purchases in this overheated market, it soon became apparent that it would cause a rate increase of 250 percent or more.

We knew this would be disastrous for the Northwest economy. We anticipated that, as new supplies were developed, market prices would eventually settle out. The big challenge was getting through the first 18 months to 2 years.

That is when we decided to turn to the demand side of the equation. We asked our aluminum customers to delay the restart of their smelters for another one to two years. We offered to cover their costs of staying down, plus pay and benefits to their workers during the downtime. At the same time, we also called on our utility customers, both public and investor-owned, to reduce their demand for Bonneville power by ten percent.

I do not know that anyone would have bet on us for a good outcome at the time we started down that path. But, thanks to a tremendously positive response from our customers and the support of the Governors and the congressional delegation, we got the rate increase down to 46 percent. We invested \$250 million to reduce demand and saved ratepayers \$4 billion. We estimate that 25,000 jobs were saved in the Northwest economy. Aluminum smelters are down for some time, but they are not out of business permanently and their workers will be paid.

Our load reductions also improved Northwest reliability, since the bulk of the reduction came about through conservation or curtailment. The Northwest Power Planning Council estimates that the load reduction exercise cut the probability of further regional shortfalls this coming winter from approximately 25 percent to 12 percent. And market prices started to come down, partly and significantly because Bonneville stayed out of the market.

Preserving our financial solvency, of course, is critically important to our ability to preserve funding for the region's fish and wildlife program, including efforts to save endangered fish. Bonneville revenues are the principal source of funds for this effort.

## MUCH REMAINS TO BE DONE

But if I leave you with any message today, it is that we cannot be lulled into a false sense of security by the current lower market prices, or we will be doomed to repeat our recent history.

Bonneville's entire effort to bring the rate increase to a manageable level and to keep the lights on during this drought year was simply short-term crisis management. We cannot forget that we got through this period only by draconian efforts and some considerable hurt. We are still curtailing loads. Aluminum smelters and other manufacturing operations are still shut down. We spilled little water at the dams for fish migration because of concerns over electricity reliability and financial solvency. We have incurred environmental costs because of the operation of emergency diesel generation.

What we need now is to forge the same kind of regional cooperation we just saw on the demand side and focus it on building an energy infrastructure for the Northwest that will ensure reliable electricity supply, without environmental compromise, without industries shut down, without sacrificing fish and wildlife protection, and without sacrificing our low-cost energy base.

Let me outline the areas I believe the Pacific Northwest needs to focus on as it maps out its energy future.

First, obviously the region needs to ensure there is adequate new generation to meet the needs of a growing population and a growing economy. The Pacific Northwest needs low-cost kilowatts added to its system from a variety of sources, including gas-fired generation, renewable power and investments in the existing hydropower system. Bonneville is working with private sector entities to help integrate new generation resources into the transmission system while also continuing to assure transmission and power reliability in the Pacific Northwest. And Bonneville now has 33 megawatts of wind power operating, another 340 megawatts under development, and is reviewing proposals for another 830 megawatts.

Second, we should not turn to generation alone. We must refocus on using energy efficiently. We need to create sustainable energy efficiency and conservation programs that are maintained through high and low market periods. True energy efficiency means maintaining the same amenity levels but using less energy to do so.

Third, the Northwest's high-voltage transmission system is stretched to the limit. Other than one interregional transmission line, there has been no major new transmission built in the Northwest since 1987. Yet, with dozens of companies now lining up to develop power for the future, we must be able to deliver that power where it is needed. The critical path for developing new generation will be transmission construction because it is more difficult to site and build transmission than generation.

Fourth, while hydropower will remain the basis of our region's electricity system, it is not likely to be a major source of new supplies. While additional wind power and other renewables should make a significant contribution, much of the next increment of electricity generation likely will come from combustion turbines fueled by natural gas. They have advantages in that they can be sited and built relatively quickly, and they have relatively low air emissions. But we must ensure that we have the gas pipeline and storage capacity to provide the fuel for these resources.

#### CONTINUING TO PROVIDE PUBLIC BENEFITS TO THE NORTHWEST

There are three other critical policy issues that we have to resolve if we are to have a sound energy system. First among these issues is the future of our fish and wildlife. With the issuance of the National Marine Fisheries Service 2000 Biological Opinion, it is time to move forward aggressively to implement this recovery effort, in coordination with the Northwest Power Planning Council's fish and wildlife program.

Another critical policy issue is how future service to electricity consumers will be assured in a world of market forces. The role Bonneville plays in this region, its future and its management, will be an integral part of this discussion.

The 1980 vision for Bonneville was that Bonneville would be a wholesale resource provider serving the needs of the region's retail utilities and direct-service industries. Then, in 1996, the region conducted a comprehensive review of the Northwest energy system. The long-term vision for Bonneville that came out of that review was for Bonneville to be a niche marketer and not an acquirer of resources to meet load growth. It was envisioned that as a result of deregulation, merchant suppliers would provide the resources of the future. However, the utilities that left Bonneville and ventured into the market, when it appeared market prices would stay low, came storming back to Bonneville during our subscription contract offerings, demanding service when it appeared market prices would go high. What a difference a few short years can make.

Today, new resources are being developed independently in this region, but customers are still counting on Bonneville to serve their load for the next five years and beyond. However, because of the risks in today's erratic market, it would not

be prudent and we are not willing to buy resources for periods that are any longer than our supply obligations to these customers.

And finally, a key policy issue will be the ultimate shape and scope of the regional transmission system. The Administration and the Federal Energy Regulatory Commission are strongly supporting the formation of independent regional transmission organizations, known as RTOs, throughout the nation. Bonneville and the other filing utility partners are supportive of the effort and have been working on "RTO West" that could comprise most of six states and two Canadian provinces. RTOs, if properly formed, will facilitate deregulated wholesale energy markets and improve overall system reliability by having a single, independent entity manage the region's transmission transactions, as opposed to a fragmented approach.

#### CONCLUSION

Mr. Chairman, members of the Subcommittee, as I stated at the outset, this has been an incredibly challenging year for Bonneville. We have avoided falling on the stumbling blocks this dangerous market has presented us. But our future and the future of our role in the Northwest still hangs in the balance. There is a tremendous challenge ahead of us to keep this system in shape so we do not have to go through this kind of crisis again. I think we know what the challenges are, and we know what we need to do.

It is imperative that we deal with all of these issues if we are to preserve the benefits that Bonneville and the Columbia River provide to the economy and the environment of the Northwest.

Thank you for your attention. I am available now to answer any questions you have about Bonneville and its role in the Northwest energy issues.

Senator DORGAN. Mr. Hickok, thank you very much. We will ask questions after we have heard all three witnesses.

Mr. Harvard Spigal is someone who has had a wealth of experience, I understand, with Bonneville and other experience as well and is going to give us his perspective of the history of this, and Mr. Spigal is a partner with Preston Gates and Ellis.

Mr. Spigal, we appreciate you being here. Why don't you proceed?

#### **STATEMENT OF HARVARD P. SPIGAL, PARTNER, PRESTON GATES AND ELLIS, PORTLAND, OR**

Mr. SPIGAL. I am not here on behalf of any client. The firm represents many participants in the utility industry, but I am appearing here presenting only my own views and not advocating any positions.

I have been asked to testify about the history of the Pacific Northwest power system based on my 26 years of experience at Bonneville, 14 years as general counsel, 2 years as senior vice-president of Bonneville's transmission business line. Like Steve, I am probably one of the few who is still around, who remembers, active in the industry, who remembers working on the Northwest Power Act, and I know there are new perspectives about how the region should meet its power supply requirements, and there are new perspectives about Bonneville's possible role in the region, but I am here to talk about that historical role, and that historical role included a public service responsibility. The public service responsibility was to attempt to serve all load, but there was a preface requirement that Bonneville attempted to serve all load of utilities and industries including commercial, industrial, and agricultural load.

The Bonneville Project Act established a mandate for the sale of Federal power generated at Federal hydroelectric projects, and the mandate was to sell power and give first priority to publicly owned

utilities, PUDs, municipalities, cooperatively-owned utilities, and then to sell power to investor-owned utilities and direct service industrial customers, principally aluminum companies. That economic development role was key in Bonneville's history. Bonneville was an engine for regional economic growth, and I tried to think about how to illustrate that, and rather than talk, I found a poster which Bonneville, if you want to look at that, I will offer it, which Bonneville did in 1943, and that reflected Bonneville thinking of itself at that time, and economic development was a key part of that role. That worked until the early 1970's when basically the additional developments of the Federal, at Federal hydroelectric projects were insufficient to meet increasing load growth, could not keep pace with demand, and Bonneville cut off the last and best drawing utility service in 1973.

By the late 1970's, Bonneville had issued a notice of intent to allocate power among its preference customer. DSI, Direct Service Industrial customers were basically told that they would not get new contracts when their existing contracts terminated. That kicked off an intense period of regional discussion about how to meet that problem and how to avoid an allocation, and the result was the Northwest Power Act, and the Northwest Power Act had as its essential purpose to avoid a dispute over the allocation of Bonneville's limited power supply, and it had as another purpose a desire to maintain a strong regional economy using the economic benefits of the Federal Columbia River power system, and the way that the regional power act attempted to achieve that objective was to give Bonneville the authority to expand its power supply, to acquire new general resources, both generating resources, conservation, and renewable resources. To the extent that an individual utility whether publicly owned or investor-owned utility looked to Bonneville to meet its power supply obligation, Bonneville had the authority to expand the Federal power supply to meet that obligation.

During debate on the regional act, there was never in my recollection, and there is never any indication in the legislative history of any serious consideration during that period of dropping load to put the region in load resource balance. The objective was to expand the power supply even though at the time new generating resources were about 10 times the price of BPA's power supply. Now, of course, new generating resources are probably closer to two, maybe three times the cost of BPA's power supply.

The second way the regional act was supposed to end the dispute over the allocation of Federal power was by spreading the benefits of Federal power to investor-owned utility, residential consumers, but we find ourselves, as Steve indicated, at a point in time where the power supply did not expand, and we are not able to meet all loads, and I think that it is an important issue about whether or not the choice to serve the regional economy as well as meet Bonneville's other statutory mandates is going to be satisfied by expanding the power supply or dropping loads or being forced into an allocation among a class of BPA customers or a subclass. Thank you.

[The prepared statement of Mr. Spigal follows:]

PREPARED STATEMENT OF HARVARD P. SPIGAL, PARTNER, PRESTON GATES AND ELLIS,  
PORTLAND, OR

#### INTRODUCTION

My name is Harvard P. Spigal. I am a partner with Preston Gates & Ellis LLP. Although I and other members of my firm represent participants in the electric utility industry, I am not appearing on behalf of any client, or advocating any position on behalf of a client. The views I express are my own.

I have been asked to testify about the history of the Pacific Northwest power system based on my twenty-six years of experience as an employee of the Bonneville Power Administration ("BPA"), of which, fourteen years were spent as General Counsel and two years as Senior Vice President of BPA's Transmission Business Line. Like many others, I participated in negotiations that led to the Pacific Northwest Electric Power Planning and Conservation Act (the "Northwest Power Act") and worked on implementation of that act.

#### HISTORICAL ROLE

Before enactment of the Northwest Power Act, BPA's role was to market power produced at Corps of Engineers and Bureau of Reclamation dams on the Columbia River and its tributaries. As new dams were constructed into the 1950's, additional amounts of power were made available to meet the region's increasing demand for energy as the economy and population expanded. One focus of BPA's marketing efforts was to bring new industry to the region. Power surplus to the needs of preference customers (publicly owned utilities), was sold to investor owned utilities and to BPA's direct service industry customers ("DSIs"). In the early 1970's, BPA participated in a program to purchase the energy generating capability of nuclear power plants in order to enable the agency to continually meet the load growth of its preference customers. As loads grew, however, BPA stopped selling power to investor owned utilities. By the late 1970's, BPA had announced the need to allocate its limited power supply among preference customers.

#### PURPOSE OF THE NORTHWEST POWER ACT

The Pacific Northwest is unlike other regions in three ways. First, the region relies on hydroelectric power to meet its needs. Even today, low cost hydroelectric power serves almost half of the load in the region. Second, the region has a large number of publicly owned utilities that are a powerful force in the Pacific Northwest. Public power serves about a third of the region's load, and is given preference and priority to BPA power. Third, BPA is the dominant wholesale power supplier and transmission provider. Bonneville markets approximately 40 percent of the power consumed in the region, and owns and operates approximately 75 percent of the transmission system. These three elements—low cost hydroelectric power, the importance of public power, and Bonneville's role in the market and as a transmission provider—were even greater factors twenty-five years ago when Pacific Northwest utilities, BPA's direct service industrial customers, and BPA started to work with the Pacific Northwest's Congressional delegation to produce the Northwest Power Act.

Senator Jackson succinctly stated the reason why the Northwest Power Act was needed. "Reduced to one sentence the heart of the regional power bill is the authority for BPA to acquire from non-Federal entities additional electric power resources, including conservation, to meet the needs of Northwest consumers."<sup>1</sup> Senator Jackson asked why this authority was needed "instead of relying solely on existing systems, public and private, to meet growth needs."<sup>2</sup> Senator Jackson answered his own question by stating that the alternative was "a battle over the allocation over the large but limited pool of Federal power."<sup>3</sup> The only solution, Senator Jackson explained, was to expand the resource pool and legislatively allocate BPA's power. "First and foremost, the region is extraordinarily dependent on electric energy. In the absence of legislation resolving the allocation issue, the whole fabric of the utility industry and the Northwest economy will be in turmoil for a decade."<sup>4</sup>

Congressman Dicks, during the House debate on the bill, also explained its purpose.

<sup>1</sup> 26 Cong. Rec., S 14690 (daily ed. Nov. 19, 1980) (statement of Sen. Jackson).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.* at S 14691.

I cannot emphasize enough how vitally important this legislation is to the economy and welfare of the residents of the Pacific Northwest region. . . . With this legislation, the potentially explosive reallocation problems can be resolved. This bill embodies a regionally negotiated and supported "peace treaty" by all of the affected parties. It ensures a smooth reallocation of power by establishing a regional planning process permitting the BPA to expand its resource base, and thereby sign the new utility and industry contracts necessary for the coordinated planning and efficient use of regional energy resources.

*126 Cong. Rec., H 9859(daily ed. Sept. 29,1980) (statement of Rep. Dicks).*

The Northwest Power Act begins with a "Congressional declaration"<sup>5</sup> of purposes, including to "assure the Pacific Northwest with an adequate, efficient, economical and reliable power supply."<sup>6</sup> BPA was required to meet the firm power loads of each publicly owned and investor owned utility exceeding each utility's own resources,<sup>7</sup> and to offer DSIs new power sales contracts.<sup>8</sup> BPA was given the authority to acquire sufficient resources to meet these loads, however, a utility could choose not to put its load on BPA and develop its own resources to meet its load, or to purchase power from others.

#### REGIONAL POWER PLANNING

In 1980, all utilities shared their twenty-year forecasts of loads and resources. Utilities, BPA, and state officials were able to determine if the region was taking steps to assure an adequate power supply. Of great significance was the expectation of each utility to at least be in load-resource balance. It was unacceptable for a utility to be in load resource deficit. Today, however, individual utility load and resource information is not available, and one cannot know whether individual utilities have made arrangements to meet their firm loads, or are relying on the spot or short-term market, which might or might not have adequate power available to meet demands.

In 1980, the Pacific Northwest was believed to have an inadequate power supply. Nevertheless, it was expected that all loads would be served because Pacific Northwest utilities, like utilities elsewhere, would meet their power supply obligations. The first obligation of a utility was to plan resources sufficient to serve its entire load. Even high costs for new resources did not justify dropping load to keep rates low for other consumers. The BPA power rate for preference customers was \$8 MWh, and the rate for power from thermal power plants was estimated to be ten times as much.<sup>9</sup> Today, power from new power plants probably costs two to three times the cost of BPA power.

Congress and the Pacific Northwest could have let DSI contracts terminate in the mid-1980's to allow the power used by DSIs to serve other loads. That alternative was rejected, in part because many DSIs could take service from publicly owned utilities that purchased power from BPA. The Northwest Power Act directed BPA to offer DSIs new, twenty-year power sales contracts, which BPA was able to sign in the face of a forecasted power shortage because the Northwest Power Act "deemed" BPA to have sufficient power to enter into new contracts with the DSIs.

#### NEW RESOURCES

When the Northwest Power Act was enacted, publicly owned utilities were expected to rely on BPA to acquire power to meet their load growth. It was believed that high costs and risks of new generation could be absorbed only by spreading the costs and risks to all BPA ratepayers. BPA was empowered to meet these loads by acquiring resources. Resources were the electric power capability or output from generation or "the actual or planned load reduction" from direct application of renewable resources by a consumer and conservation.<sup>10</sup> Because conservation was defined as a reduction in consumption as a result of increases in the efficiency of energy use, production or distribution, load reductions achieved by high prices or dropping loads was not conservation.

BPA was required to secure the approval of the Regional Power Council before acquiring major resources.<sup>11</sup> Major resources were defined as a purchase of more

<sup>5</sup> Pacific Northwest Electric Power Planning and Conservation Act, § 1, 16 U.S.C. § 839.

<sup>6</sup> 16 U.S.C. § 839(2).

<sup>7</sup> 16 U.S.C. § 839c(b)(1).

<sup>8</sup> 16 U.S.C. § 839c(d)(1)(D).

<sup>9</sup> H.R. Rep. No. 96-976(I)(1980).

<sup>10</sup> 16 U.S.C. § 839d.

<sup>11</sup> 16 U.S.C. § 839d(c).

than 50 average megawatts for more than five years.<sup>12</sup> BPA resource purchases were required to be consistent with the Northwest Power Planning Council's power plan, which meant they had to be cost effective, meaning a cost "no greater than that of the least-cost similarly reliable and available alternative measure."<sup>13</sup> The intended consequence was that resources compete to determine to most cost effective resource.

#### BPA TRANSMISSION

BPA's transmission role has been unchanged for decades. In 1980, BPA owned approximately 80 percent of the region's high voltage transmission system. BPA's responsibility on key paths, such as the Cross-Cascades path used to deliver electricity from hydroelectric and thermal plants on the Columbia River, is particularly critical. Total Cross-Cascades transfer capability is about 10,500 megawatts. Puget Sound Energy owns 450 megawatts, and the rest is owned by BPA. In 1974, legislation was enacted to allow BPA to borrow funds from the U.S. Treasury Department to construct transmission facilities.<sup>14</sup> This authority freed BPA from annual appropriations for costly transmission facilities, making it possible for utilities developing power plants to be confident that BPA transmission facilities would be ready when their plants were completed.

BPA is required to set rates for transmission service that equitably allocate its transmission costs between federal and non-federal users. Although BPA is not subject to most provisions of the Federal Power Act, under the Energy Policy Act of 1992, BPA is a transmitting utility<sup>15</sup> and can be ordered the Federal Energy Regulatory Commission ("FERC") to provide an interconnection and transmission service. The Energy Policy Act also required that BPA transmission rates "not be unjust, unreasonable, or unduly discriminatory or preferential, as determined by the Commission."<sup>16</sup> The provisions also provide for a complaint process and a FERC hearing and determination.

#### CONCLUSION

The Northwest Power Act provides a statutory structure "to assure the Northwest of an adequate, efficient, economical and reliable power supply." The objective was to spread the benefits of the low cost Federal Columbia River Power System to all consumers and to avoid an unwanted allocation fight over the limited amount low cost Federal hydroelectric power. The result was to be a stronger Pacific Northwest economy.

Senator DORGAN. Mr. Spigal, thank you very much.

Next we will hear from Miss Sharon Nelson, a member of the board of trustees, North American Electric Reliability Council. It says here Princeton, New Jersey. You are from this region, right?

Ms. NELSON. That is correct.

#### **STATEMENT OF SHARON L. NELSON, MEMBER, BOARD OF TRUSTEES, NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL, PRINCETON, NJ**

Ms. NELSON. Thank you, Mr. Chairman. I am here, Mr. Chairman, and Senator Cantwell, thank you for the invitation. I am here representing the North American Electric Reliability Council. It is based in Princeton. I am an independent member of the board of that non-profit organization. My day job is as director of the University of Washington Law School Center for Law, Commerce and Technology, and previously I was two terms as head of the Washington State Utilities Transportation Commission, and in those 12 years it was my privilege to serve with Bruce Haggen from your State, Mr. Chairman, and to work with you actually, on a very

<sup>12</sup> 16 U.S.C. 839a(19).

<sup>13</sup> 16 U.S.C. 839a(4).

<sup>14</sup> 16 U.S.C. § 838k(a).

<sup>15</sup> 16 U.S.C. § 796(23).

<sup>16</sup> 16 U.S.C. § 824k(i)(b)(B)(ii).

complex phantom tax issue many, many years ago. You might remember.

My point following these distinguished gentlemen, whom I have known for quite a long time in other roles, is much simpler, a much simpler point than theirs. My point today is that if Congress does nothing else this year, Congress must address the question of how to institutionalize responsibility for reliability assurance for the electric power grid. This is a simpler question, and I don't mean to say that it is exceedingly simple, because nothing in this industry is exceedingly simple, but it is a doable proposition as opposed to many of the other thorny issues that face the Congress.

Comprehensive restructuring at the retail level as Mr. Hickok suggested is something that needs to be addressed by the Congress, but it has been many years in coming, and may be again impossible, and while your bill will deal most likely with the bulk power market, it may not get to the retail market, but I think the California debacle demonstrates why this is no ordinary commodity, and this is not garden variety deregulation, and again why Congress must address the reliability issue.

Electricity simply is the life blood of our economy. Our very public safety and our economy depends on its availability and reliability. As former Commissioner Ron Laird from the Colorado commission once said, you know, when the phones go out, you finally can get some work done, but when electric power goes out, you have got to move out, and that is true whether you are at home, whether you are at the hospital or whether you are on the factory floor. There simply is no ready substitute for electricity for most of its uses, and as my current, as sitting Commissioner Dick Kemp said on the Washington Commission said, saying that electricity is like any other commodity is saying that oxygen is like any other gas. Again, it is a fundamental and essential part of our economy.

My own history, it may be a dubious distinction, but I have been a student of deregulation. I started on the congressional committee in the U.S. Senate in 1976 when Senator Magnuson was its chair and was privileged to be there when Congress abolished the Civil Aeronautics Board. It abolished the economic regulator of the airline industry, but it did not abolish the Federal Aviation Administration, the safety regulators of the airline industry. When it changed the rules for trucking, it changed the rules for the Interstate Commerce Commission economic regulation of the trucking industry, but it left the safety and the workplace rules intact at the Department of Transportation.

When the FCC deregulated administratively the telecommunications industry, it found that it had to create a reliability council to take care of some of the problems that were unanticipated in its scheme for economic deregulation, and recently the Congress, trying to be respectful of the marketplace realities, and I am convinced of how markets can function very effectively in formerly regulated industries, much better than they ever did when they were regulated, still Congress has been trying to establish self-regulating organizations, and ICNN, the Internet Corporation for Names, Numbers and Signs, is a recent example which may not be a model for my testimony today. I should also indicate that one of my other night jobs is sitting on the National Academy of Sciences

board and reviewing Corporation for Signs, Names and Numbers now to see just how well it is operating.

One of the chief criticisms for ICNN has been that it is way too American-economy centric, not international enough, which is again, which brings us back to this legislation that I am advocating today.

The North American Electric Reliability Council had proposed to transform itself starting in 1977 from a volunteer, self-regulating organization, organized primarily in a contractual manner. We have been in existence since 1968. We were created in the wake of the 1965 New York City blackout.

The industry has shown great leadership in trying to transform itself, but it needs Congress's help to give finally the enforcement authority that it needs to make sure that people do not lean on the electric power grid and try to seek competitive advantages through misusing the grid.

Senator Cantwell has joined Senator Gordon Smith from Oregon in promoting this reliability title to the legislation, and I am here today to urge you to really take a serious look at it, and despite whatever else happens in Congress to try to make sure that this gets through on a stand-alone basis. This legislation did make it through the Senate once before. It is a doable proposition.

Recently, some of our consensus, the proponents of the legislation has been almost God, apple pie and motherhood, have retracted their support, but I know that various members of the former coalition met last Thursday and are working to try to make the legislation simpler so that it can be passed by Congress this year.

Many of the people who have left the coalition are arguing that the FERC should be given the reliability authority, and I would just like to tell you from my own experience at the Washington Utilities and Transportation Commission, that combining economic regulation and safety regulation is not always an easy fit.

Again, in the wake of the trucking deregulation experiment, the UTC kept a lot of safety regulations for trucks, but finally our legislature realized that in an era of scarce resources, both personnel and budgetary, that it was much more sensible to put safety regulation with the Washington State Patrol where the personnel already exists to do that kind of work, and the same was true of the natural gas deregulation issue where the commission shared safety enforcement with the Department of Transportation, and frankly, it is going to be a tight budget year for Congress, and adding the adequate personnel and budgetary resources to FERC budget may be more difficult than to simply approve and to continue in existence NERC, which wants to transform itself from something called NERC to something called NAERO, the North American Electric Reliability Organization, which will have the benefit of again of being something that we can work with our neighbors to the north in Canada and our neighbors to the south in Mexico without running afoul of their notions of their own sovereignty, and the other criticisms that have been lately filed against NERC are that it is too slow, and it is too captured by incumbent electricity providers.

Again, I think the industry has shown great leadership. The nine independent trustees that I am one of have taken over the organization now, and it is our mission to make the organization truly

independent, its processes truly fair to everyone in the industry, and its processes truly transparent.

Thank you, Mr. Chairman, for your attention. I am hoping that at least the electric reliability title is not an “only yesterday” policy. I think it is clearly one for the future, and the only one that Congress can address in a comprehensive and rational way. Thank you.  
[The prepared statement of Ms. Nelson follows:]

PREPARED STATEMENT OF SHARON L. NELSON, MEMBER, BOARD OF TRUSTEES,  
NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL, PRINCETON, NJ

#### SUMMARY

Good Morning Mr. Chairman and members of the Subcommittee. My name is Sharon L. Nelson, and I am a member of the Independent Board of Trustees of the North American Electric Reliability Council (NERC). I am also Director, Center for Law, Commerce and Technology, at the University of Washington. I recently completed two terms as Chairman of the Washington State Utilities and Transportation Commission. I was the Past President of the National Association of Regulatory Utility Commissioners and the Past President of the Western Conference of Public Service Commissioners.

NERC strongly urges Congress to enact reliability legislation in this session of Congress. NERC and a broad coalition of state, consumer, and industry representatives are supporting legislation that would transform the current system of voluntary operating guidelines into a set of mandatory transmission system reliability rules, promulgated and enforced by an industry-led reliability organization, with FERC oversight in the United States. NERC firmly believes that steps must be taken now to ensure the continued reliability of the electricity transmission system if the Nation is to reap the benefits of competitive electricity markets. The changes taking place as the electric industry undergoes restructuring are recasting the long-established relationships that reliably provided electricity to the Nation’s homes and businesses. Those changes will not jeopardize the reliability of our electric transmission system IF we adapt how we deal with reliability of the bulk power system to keep pace with the rest of the changes that the electric industry is now experiencing.

NERC is a not-for-profit organization formed after the Northeast blackout in 1965 to promote the reliability of the bulk electric systems that serve North America. It works with all segments of the electric industry as well as consumers and regulators to “keep the lights on” by developing and encouraging compliance with rules for the reliable operation of these systems. NERC comprises ten Regional Reliability Councils that account for virtually all the electricity supplied in the United States, Canada, and a portion of Baja California Norte, Mexico.

#### WHAT IS RELIABILITY?

Reliability means different things to different people. For the consumer it could mean, “Does the light come on when I flip the switch?” Or, “Does a momentary surge or blip re-boot my computer or cause me to lose a whole production run of computer chips I was manufacturing?”

To NERC, reliability means making sure that all the elements of the bulk power system are operated within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of that system will not occur as a result of sudden disturbances such as electric short circuits or unanticipated failure of system elements. It also means planning, designing, and operating each portion of the bulk power system in a manner that will promote security in interconnected operations and not burden other interconnected systems.

NERC sets the standards by which the grid is operated from moment to moment, as well as the standards for what needs to be taken into account when one plans, designs, and constructs an integrated system that is capable of being operated securely. The NERC standards do not specify how many generators or transmission lines to build, or where to build them. They do indicate what tests the future system must be able to meet to ensure that it is capable of secure operation. Up to now, NERC’s rules have generally been followed, but they have not been enforceable. As more entities become involved in the operation and use of the bulk electric systems, and use these systems to full competitive advantage, NERC is seeing an increase in the number and severity of rules violations. Hence, the voluntary approach is no

longer adequate for maintaining the reliability of the bulk power system. Just as the rest of the electric industry is changing, the reliability infrastructure must change too.

VOLUNTARY RELIABILITY RULES WILL NOT WORK IN A MORE COMPETITIVE  
ELECTRIC INDUSTRY

NERC's formation in 1968 was the electric industry's response to legislation that had been introduced in the Congress following the 1965 blackout in the Northeast. That legislation would have given the then Federal Power Commission (FPC) a central role in the reliability of the bulk electric system. Instead of adopting that legislation, Congress opted for a voluntary, industry-led effort. For more than thirty years, this voluntary system has worked very well and we have had an extremely reliable electric system. But the reliability rules or standards have no enforcement mechanism. Peer pressure has been the only means available to achieving compliance.

As good as that system has been, the voluntary system will not serve us well for the future. Here is why:

- The grid is now being used in ways for which it was not designed.
- There has been a quantum leap in the number of hourly transactions, and in the complexity of those transactions.
- Transmission providers and other industry participants that formerly cooperated willingly are now competitors.
- Rate mechanisms that in the past permitted utilities to recover the costs of operating systems reliably are no longer in place, or are inadequate given increased risks and uncertainties.
- The single, vertically integrated utility that formerly performed all reliability functions for an area is being disaggregated, which means that reliability responsibilities are being divided among many participants.
- Some entities appear to be deriving economic benefit from bending or violating the reliability rules.
- Construction of additional transmission capacity has not kept pace with either the growth in demand or the construction of new generating capacity, meaning the existing grid is being used much more aggressively.

A number of factors have contributed to our present circumstance. Demand has been steadily increasing over the past decade and is expected to increase. Just last week, peak demands were recorded in many areas of this country and in Canada. Second, merchant generators are now building or planning to build hundreds of new plants across the country to meet that increased demand in response to the increased prices that we have been seeing in the wholesale electricity markets.

The same is not true for transmission. Ten years ago North America had a little less than 200,000 circuit-miles of high voltage transmission lines. Today we have about 200,000 circuit-miles of lines. Ten years from now we are projecting that we will have just a little over 200,000 circuit-miles of high voltage transmission lines. All of these new generators will need to access the transmission grid to get their power to where it is needed. For the most part, however, the transmission dollars that are being spent today are to connect new generation to the grid; they are not going to result in major new power lines that will strengthen the grid's ability to move large blocks of electricity from one part of the country to another. That lack of additional transmission capacity means that we will increasingly experience limits on our ability to move power around the country, and that commercial transactions that could displace higher priced generation with lower priced generation will not occur.

Moreover, the existing grid is being pushed harder and is being used in ways for which it was not designed. Historically, each utility built its generating stations close to load centers, which were largely cities. As the cities grew, the electric systems grew with them, spreading outward from the center. The weakest part of the electric grid is generally where one system abuts another. Initially, utilities installed connections between adjacent systems for emergency purposes and to share generating reserves to keep costs down. Gradually those interconnections were strengthened so that adjoining utilities could buy and sell electricity when one had lower cost generation available than did the other. But these systems were not designed to move large blocks of power from one part of the country to another, across multiple systems. Yet that is the way business is being conducted today. The volume and complexity of transactions on the grid have grown enormously since the advent of open access transmission.

Electric industry restructuring adds to the challenge. In the past, vertically integrated utilities with monopoly franchise service territories had complete responsibil-

ity for all aspects of their electric systems. They planned and built their transmission systems, ensured that sufficient generation was constructed, and operated and maintained their transmission and distribution systems, all to serve customers within designated service areas. With restructuring, there may no longer be a designated group of consumers for which to plan service. Instead, responsibilities to construct and maintain generation, transmission, and distribution are being divided among multiple entities. In some cases, those responsibilities may be falling between the cracks. Regional Transmission Organizations (RTOs) may provide a means to reintegrate some of these functions. But the RTO proposals that have been filed to date vary considerably in the extent to which the RTO has the authority to plan and expand the transmission system, not only to connect new generation, but to meet broader needs of regional reliability.

The result of all this is that the transmission grid is being increasingly stressed. NERC is seeing more congestion on the grid, for more hours of the day. NERC is also seeing increasing violations of its reliability rules. If these trends continue, we risk the increased likelihood of grid failure.

LEGISLATION IS NEEDED TO ENSURE BULK POWER SYSTEM RELIABILITY IN A MORE  
COMPETITIVE ELECTRICITY MARKET

We need legislation to change from a system of voluntary transmission system reliability rules to one that has an industry-led organization promulgating and enforcing mandatory rules, backed by FERC in the United States. In August 1997, NERC convened a panel of outside experts to recommend the best way to ensure the continued reliability of North America's interconnected bulk electric systems in a competitive and restructured electric industry. On a parallel track, in the aftermath of two major system outages that blacked out significant portions of the West in July and August 1996, the Secretary of Energy convened a task force on reliability, chaired by former Congressman Phil Sharp. Both groups came to the same conclusion: The current system of voluntary guidelines should be transformed into a system of mandatory, enforceable reliability rules, AND the best way to accomplish that was to create an independent industry self-regulatory organization, patterned after the self-regulatory organizations in the securities industry, with oversight in the United States by the Federal Energy Regulatory Commission.

NERC and a broad coalition of state, consumer, and industry representatives have been pursuing legislation to implement those recommendations. That coalition includes the American Public Power Association, the Canadian Electricity Association, the Edison Electric Institute, Institute for Electrical and Electronics Engineers—USA, the Large Public Power Council, the National Association of Regulatory Utility Commissioners, the National Association of State Energy Officials, the National Association of State Utility Consumer Advocates, the National Electrical Manufacturers' Association, the National Rural Electric Cooperative Association, the Northwest Regional Transmission Association, the Transmission Access Policy Study Group, and the Western Interconnection Coordination Forum.

On June 18, 2001, that coalition sent a letter to the Senate Committee on Energy and Natural Resources, the House Energy and Commerce Committee, and the Administration in support of the NERC legislative proposal embodied in both S. 388 and S. 597. On July 13, 2001, the Western Governors Association also sent a similar letter supporting the pending NERC legislative proposal to the Senate Energy Committee, the House Committee, and the Administration.

GOALS OF RELIABILITY LEGISLATION

The following goals are embodied in the NERC legislative proposal:

- Mandatory and enforceable reliability rules;
- Apply to all operators and users of the bulk power system in North America;
- Rules fairly developed and fairly applied;
- Independent, industry self-regulatory organization Oversight within U.S. by FERC;
- Must respect the international character of the interconnected North American electric transmission system;
- Regional entities will have a significant role in implementing and enforcing compliance with these reliability standards, with delegated authority to develop appropriate Regional reliability standards.

FERC SHOULD NOT BE GIVEN THE JOB OF PROMULGATING AND ENFORCING RELIABILITY STANDARDS

Because of FERC's limited jurisdiction and authority, because of the international character of the North American grid, and because of the technical expertise required to develop and oversee compliance with bulk power system reliability standards, the development and enforcement of reliability rules is not a job that can simply be given to FERC. Furthermore, FERC does not even have clear authority over reliability matters for the utilities that it does regulate. Legislation that would have given FERC's predecessor, the FPC, plenary authority over reliability matters was introduced in Congress following the Northeast blackout in 1965, but that legislation was not passed. Instead, the electric industry took on the responsibility for ensuring the reliability of the interconnected bulk power system. NERC was formed in 1968 to lead that industry effort.

FERC lacks jurisdiction over approximately one-third of the owners and operators of transmission facilities in the United States. It lacks jurisdiction over facilities owned by municipalities and state agencies, rural electric cooperatives that have Rural Utility Service financing, the Federal power marketing administrations (such as the Bonneville Power Administration and the Western Area Power Administration), the Tennessee Valley Authority, and utilities within the Electric Reliability Council of Texas.

Having an industry self-regulatory organization develop and enforce reliability rules under government oversight also takes advantage of the huge pool of technical expertise that the industry currently brings to bear on this subject. FERC does not now possess and is never likely to achieve anything approaching the level of technical sophistication inherent in the NERC standard-setting process, which involves dozens of committees and working groups and thousands of professionals representing all segments of the electric industry. Having FERC itself set the reliability standards through its rulemaking proceedings, even if based on advice from outside organizations, converts matters that ought to be resolved by those with technical engineering expertise and commercial expertise into matters that are the province of lawyers. These complex rules need to be worked out together in a collaborative fashion by all segments of the industry.

A further and often overlooked impediment to FERC's ability to act directly on reliability matters is that the grid is international in nature. There is strong Canadian participation within NERC now, and that is expected to continue with the new organization. Having reliability rules developed and enforced by a private organization in which varied interests from both countries participate, with oversight in the United States by FERC and with oversight by Canadian regulators in Canada, is a practical way to address the international character of the grid. Otherwise, U.S. regulators would be dictating the rules that Canadian interests must follow—a prospect that would be unacceptable to them. There are also efforts under way to interconnect more fully the electric systems in Mexico with those in the United States, primarily to expand electricity trade between the two countries. This is one element of the President's National Energy Policy. With that increased trade, the international nature of the self-regulatory organization will take on even more importance, further underscoring the necessity of having an industry self-regulatory organization, rather than FERC, set and enforce compliance with grid reliability standards.

FERC's strong competence lies in assuring fairness and openness of process and regularity of proceedings. The combination of industry technical expertise to work on substantive reliability rules and FERC oversight to assure due process is an effective and efficient way to address reliability issues.

STATUS OF RELIABILITY LEGISLATION AND RTOS/ISOS

Last year, the Senate adopted the NERC legislation as S. 2071, but the bill died in the House. Senator Smith reintroduced that legislation this year (S. 172). In addition, the NERC legislation (including provisions addressing coordination with regional transmission organizations (RTOs)) has been included as part of both Senator Bingaman's bill (S. 597) and Senator Murkowski's bill (S. 389). Similar language has been introduced in the House of Representatives by Mr. Wynn (H.R. 312).

The pending legislation addresses the role of both independent system operators (ISOs) and RTOs, as well as the role of state commissions. Independent system operators and regional transmission organizations fall within the defined term "system operator" in the pending legislation. As system operators, both ISOs and RTOs would be obligated to comply with established reliability rules, just as other kinds of system operators and other users of the bulk power system would be obligated to comply with those rules. In Order No. 2000, FERC stated that RTOs must per-

form their short-term reliability functions. An RTO is directed to notify the Commission immediately if implementation of those or any other externally established reliability standards would prevent it from meeting its obligation to provide reliable, non-discriminatory transmission service.

The issue of coordinating the reliability-related activities of the new electric reliability organization envisioned by this legislation and RTOs arose during last year's legislative efforts. NERC worked with FERC, PJM, the California Independent System Operator and several others to address that issue. We agreed to specific language to address that issue, and that language has been incorporated in both Senator Bingaman's bill (S. 597) and Senator Murkowski's bill (S. 389). It is also included in the bill pending in the House of Representatives (H.R. 312).

Finally, the NERC reliability legislation addresses the role of state regulatory commissions. The legislation gives the new electric reliability organization authority to set and enforce rules for only the bulk power system. Eighty percent of power outages take place on local distribution systems, and those remain wholly under state jurisdiction. Language has been included to make clear that issues concerning the adequacy and safety of electric facilities and services, matters traditionally within the purview of state commissions, remain with the state commissions. The new reliability legislation specifically would not preempt actions by a state commission with respect to the safety, adequacy, and reliability of electric service within that state, unless the state's actions were inconsistent with reliability rules adopted by the new reliability organization. Those provisions were worked out with representatives of the states. Both Senator Bingaman's and Senator Murkowski's bills contain that language.

#### CURRENT INDUSTRY DISCUSSIONS OF LEGISLATION

Although a broad coalition of state, consumer, and industry representatives are supporting passage of the NERC legislative proposal, we recognize that that support is not unanimous. Just as NERC and its coalition worked with state regulators in 1999 and with the RTO representatives last year, NERC and its supporting coalition are continuing discussions with those who are not now supporting the legislation to determine whether changes to the proposal can broaden the base of support even further. One of the major criticisms of the legislative language is that the proposal is longer and more detailed than may be appropriate for a legislative enactment. NERC is in the process of working with all interested parties to develop a shorter, less detailed bill that nonetheless retains the essential criteria needed to create an independent industry self-regulatory organization that will command at least the same level of support as exists for the current version. Members of the coalition met on August 9, 2001, in Washington, DC to review those efforts. We anticipate that this process can be completed and revised language provided to the Committee shortly.

FERC's recent RTO orders do not change the need for Congress to enact reliability legislation because those orders do not address any of the reasons why this legislation is needed. Those orders cannot confer jurisdiction that FERC does not now have, either over reliability matters or over non-jurisdictional entities. Nor do they provide FERC with the resources or technical competence to undertake the task of setting and enforcing reliability rules itself. Finally, those orders do not address in any way the international nature of the interconnected grid.

Even if FERC's vision were someday completely realized, there would be six (not four) RTOs in the United States: Northeast, Southeast, Midwest, Florida, ERCOT, and West. The Canadian provinces and Mexican states are not accounted for. It is also questionable whether all non-jurisdictional transmission-owning entities will join an RTO. Finally, there is the question of the time it will take for the RTOs that FERC envisions will actually come into being. With the additional uncertainty generated by those orders as to who will ultimately operate and plan transmission, it is more important than ever that an industry-led self-regulatory organization be created to establish and enforce reliability standards applicable to the entire North American grid, regardless of who owns or manages it. Because FERC will provide oversight of the self-regulatory organization in the U.S., FERC can ensure that the self-regulatory organization's actions and FERC's evolving RTO policies are closely coordinated.

#### CONCLUSION

NERC commends the Subcommittee for attending to the critical issue of ensuring the reliability of the interconnected bulk power system as the electric industry undergoes restructuring. A new electric reliability oversight system is needed now. The continued reliability of North America's high-voltage electricity grid, and the secu-

riety of the customers whose electricity supplies depend on them, is at stake. An industry self-regulatory system is superior to a system of direct government regulation for setting and enforcing compliance with grid reliability rules. Pending legislation would allow for the timely creation and FERC oversight of a viable self-regulatory reliability organization. The reliability of North America's interconnected transmission grid need not be compromised by changes taking place in the industry, provided reliability legislation is enacted now.

Senator DORGAN. Miss Nelson, thank you very much.

Let me start with the issue of reliability. FERC has not distinguished itself in my judgment in the recent years. I have indicated that I thought that FERC has done a great imitation of a potted plant for a couple of years as California has suffered blackouts and the wholesale market went haywire. So I do not, I do not know where we ought to put reliability. I mean that is something that we are spending a fair amount of time trying to think through, but it also seems to me that you must, you must assign the reliability piece somewhere where there is some responsiveness and where you are not going to have a sweetheart connection to industry, either. I mean can you, how, if we, if we did not use FERC here, how would we be sure that we are not seeing a reliability piece that has a large grip by the industry, itself?

Ms. NELSON. That is always the problem in an industry capture, and it happens even to government agencies. George Stigler first got a Nobel Prize for noticing that regulatees could capture their regulators, and I think the reason for FERC's potted plant attitude in the last several years has been a capture in the other way, an ideological capture saying that markets will cure anything, sort of a fundamental misapprehension of the competitive realities underlying the economy of electricity.

Our model for this legislation is really modeled on the Securities and Exchange Commission and securities regulation institutions of the country, and I think most people while they may be impatient with the SEC, the Nasdaq and the New York Stock Exchanges and the National Association of Securities Dealers, think that that market functions fairly and most of the time fairly efficiently and fairly nimbly, and it addresses problems when they emerge. That is the model this legislation seeks to impose for the electricity industry.

FERC would get delegated authority from Congress to enforce reliability rules which in turn would be redelegated to the NAERO which would then be formed, again like the National Association of Securities Dealers and the exchanges, would then become a self-regulating organization which through its regional councils, working in numerous committees composed of many professionals, utilizing checks and balances, would formulate the standards that would apply to the industry.

This is not a new model for industry. It is, standard setting is done this way in many different venues, but we think this can work, and what the missing piece is is now the way the industry since 1968 functioned is essentially sunshine and peer pressure and public embarrassment, but as competition comes, we need the authority to single out the bad actors and actually give them meaningful sanctions, and that is what the legislation would do.

Senator DORGAN. Thank you.

Mr. Hickok, what do you expect will happen between now and the end of the year with respect to rates from Bonneville?

Mr. HICKOK. We have a 46 percent rate increase that is set to go into effect on October 1. When we first began assembling that additional 3,000 megawatts to close the gap I mentioned when our customers came back to us, we thought we could do that with very little impact on our current rates, which averaged about 2.3 cents a kilowatt hour or \$23 a megawatt hour.

When we were about 1,000 megawatts into assembling that power supply, which we were doing quite well at prices under \$30 a megawatt hour, we suddenly hit the competition with California and its desire to lock up in long-term contracts very large supplies, and prices went into outer space. So we decided to move in, as I mentioned, on the demand side in order to hold a rate increase down from what would have been about 250 percent, if we bought our way out of the situation, to 46 percent. But I have to confess to you, Mr. Chairman and Senator Cantwell, we hate this curtailment business. We are doing it on a willing-buyer/willing-seller basis, but we know that upstream and downstream from the industries that we are dealing with, including irrigated agriculture as well as aluminum, chemicals, pulp and paper, steel and so forth, we know that upstream and downstream we are doing damage in the Northwest economy. We are resorting to these curtailment actions to avoid a wider calamity which a 250-percent rate increase undoubtedly would have caused. We estimated it would have put 25,000 people out of work. As it is, we were able to cover the employment of the industries we curtailed, but there are employment effects upstream and downstream from these industries—not as severe as 25,000, but they are definitely there, and we want to get out of curtailment just as rapidly as we can. So, as we look to the long-term future, our desire is to put together the power supplies that let these industries come back up just as rapidly as we can assemble those supplies at reasonable prices.

Senator DORGAN. What do you mean by “long-term” when you refer to it here?

Mr. HICKOK. Well, we basically arranged with the industries and our utility customers to keep a lot of users off-line for the next 1 to 2 years, because we are getting fairly decent price quotes in years 3, 4 and 5 of the next 5-year period covered by our rates. It is the first 2 years in which it is incredibly tight. And in order for those supplies to come on line, we have got to build transmission, because we have got equally as big a transmission problem, congestion in the system, in addition to a power supply problem. In other words, even if all the plants in the world, and there is 30,000 megawatts of development interest just in the Pacific Northwest, even if it all suddenly arrived, the grid cannot handle it.

Senator DORGAN. I did not mention transmission in my opening statement. We need to talk a bit about transmission here, because that is integral to solving all of these issues, but let me ask the question that came to my mind when both you and Mr. Spigal discussed the notion that we did not have the power supply expand when it was expected to expand here in this region, because you could go to other wholesale markets and buy it at a price that would really render it worthless to go build additional plants here, so if that power supply did not expand because the market system sent signals that it should not expand, does not that undercut the

whole notion of the market system sending appropriate signals with respect to future needs?

Mr. SPIGAL. If I could answer, I think it does. I think there is a major disconnect between a market approach and the fact that supply meeting reliability responsibility lies with individual utilities.

Twenty years ago or even 10 years ago here in the Northwest all of the utilities submitted load forecasts and resource forecasts demonstrating how they were going to meet their obligation to carry their load for 20 years in the future, and that information was publicly available, and there was a real sense of duty, responsibility, utility responsibility, if you will, to keep yourself in load resource balance and not have a deficit. Now, none of that information is available. It is all commercially sensitive, and so nobody knows which individual utilities, publicly owned or investor-owned have taken the steps to secure an adequate supply to meet their loads. A lot of utilities, obviously as Steve indicated, relied upon spot market to meet their load. No signal was sent to the market. The only way a signal gets sent to the market is when there is a shortage and prices spike or when individual utilities go out and contract with developers. So I think there is a real, there is an issue there how to assure you are going to have an open market on the generation side, how to send the signals when the supply reliability is basically at the local level.

Mr. HICKOK. I have a bit of a different take or maybe it is in addition to Harvey's take, and that is who is going to have the load serving obligation at retail is unclear. The utilities that traditionally have had it do not know exactly how much of that load they are going to continue to be obligated to serve in the future, and those who would enter the market and compete to serve that load, presumably the aggregators or the merchants, do not know what the rules are going to be either. So one of the things that has been a problem for the last 8 years is the rules for retail are not clear. Basically, you could not set up to do that business. A number of companies set up and began going down that road, and then pulled out because they could not understand what they were going to have access to.

On the wholesale side, we were in surplus for a number of years, so it was not worth going into the business to serve at wholesale, and wholesale supplies were artificially high because Northwest hydropower was plentiful for a good number of years, probably masking what otherwise would have been a signal sent to that market much sooner than it was sent suddenly two summers ago.

Senator DORGAN. What impact can wind generation or the new technology of wind turbines play in this region of the country for the generation of additional power?

Mr. HICKOK. In this region probably more than any other region in the country, Mr. Chairman, and that is because intermittent resources such as wind, which does not blow all the time and the sun, which doesn't shine all the time, depend on hydro storage for their efficacy for serving firm retail load.

The Northwest system with its large storage batteries in the form of the reservoirs behind the large dams in the Columbia and Snake River systems gives us the ability to integrate these re-

sources—wind, solar and other intermittent resources—better than any other system I know. So, they will probably play a much larger role in this region than they will play anywhere else in the country. In fact, Bonneville is currently developing about 350 megawatts of wind power that will be coming on-line in the next several years. We are in negotiation with a number of companies to add up to 800 megawatts more which will make us by far the largest acquirer of wind resources in the country.

Senator DORGAN. One of you said that, you talked about retail disengagement, I think you were talking about California, perhaps, was that—

Mr. SPIGAL. Yes.

Senator DORGAN. Whoever, the issue of retail disengagement, and I got the feeling that retail disengagement meant that the market system really never had a full opportunity to work. My sense is that retail disengagement, for example, in the California broken or failed experiment was the only method by which they could possibly pass legislation as goofy as that, suggesting that somehow you could just, that just the market system will send whatever signals it sends all the way through to the retail customer, and whatever happens happens, and that the market system will be the arbiter or the allocator of the goods and services here in a manner that is fair and responsible at all times, but as you indicated, Mr. Spigal, in your testimony, and you just stated as well that individually utility loads and resource information is no longer available in these circumstances. It seems to me that we have a cross-word puzzle here with pieces that do not fit.

Mr. SPIGAL. Exactly.

Senator DORGAN. That is why I come to this issue of retail disengagement. My guess is there is not a sober legislator within 8,000 miles who could possibly put together a system that says, oh, and by the way the market system will work here, and we will have no stop limit for retail customers in terms of what happens to their rates. Yes?

Ms. NELSON. May I, Mr. Chairman?

Senator DORGAN. It was therapeutic to say that. I am not sure what the—

Ms. NELSON. It is absolutely a puzzle where the pieces do not fit, and it is again why students of deregulation, and especially in our area urged caution a few years ago to our public policy makers. In this State, for example, only one-third of the retail sales are by private investor-owned utilities.

Senator DORGAN. What percent?

Ms. NELSON. About a third. The rest are by municipal utilities, and what we call public utility districts that buy power from Bonneville, so they are not even, in your classic sense, private market actors. They have a different set of availability of capital. They have different tax responsibilities, and so right away you get a disconnect and short of trying to shape the market with their involvement in it.

We have a Federal agency that is our big transmission owner in this region. That is really different than the rest of the country, and in California's case, they tried to do it all. They thought there was only upside market potential. They forgot about the downside

of the market, and so they thought all the rates were going to be down, and in fact, the legislature said we are going to have a 10 percent right across the board retail rate drop, but they could not continue to honor that with their rate payers, and when the wholesale market went whacko, then the market signal, as Steve indicated, did not get passed through to customers, instead the governor stepped in hoping to become the buyer of last resort of power and tried to discipline the market.

Senator DORGAN. Explain the phrase, “the market signal did not get passed through to the customers—”

Ms. NELSON. That means the rates have to go up.

Senator DORGAN. I understand that. You are putting it in an antiseptic way. The point is they protected the customer from being crushed by an overburdening rate increase that they could not possibly deal with. So they created this structure of, the wholesale price structure bearing the increase, with, you know, a stop limit for retail customers.

Ms. NELSON. And I have to say we are hoping that the Pennsylvania and Texas experiments in retail will be better, but they are just beginning.

Senator DORGAN. I think their pieces do not fit in their puzzle either, but we’ll see.

Mr. Hickok.

Mr. HICKOK. Retail has not actually been engaged. I think California taught us how not to try to go with retail. The Federal Government’s jurisdiction was wholesale, and the Federal Government acted in 1992 and the FERC just came along and underscored it with its rules, 888, 889 and 2000. But the States’ jurisdiction is at retail, and they will determine how retail does engage, and right now they are totally disconnected. If retail basically had been engaged from the beginning, that is to say if the transformation had begun, you would not see something as wildly out of whack as we have got right now. California was bullying its way through by basically attempting to throw all of its retail customers into a short-term market. California basically prohibited the kind of engagement that a retail aggregator would have taken on by assembling a portfolio of supplies, and most States are thinking about portfolio approaches as they think about how they ought to develop retail. They said basically in California everybody is going to be in the short-term market, and that guaranteed they were going to swing with a very volatile kind of market. Wholesale is always going to be volatile, and retail for the most part should not be, and I would argue it need not be, and that people who supply at retail will need to understand that they have a set of customers that need something different from the wild swings that can happen at wholesale. Nevertheless, somebody has got to assemble the wholesale supply, and, as you know, they do not experience costs that reflect flat kinds of rates which is now what we have at retail.

Mr. SPIGAL. Mr. Chairman?

Senator DORGAN. Yes?

Mr. SPIGAL. If I could disagree with Mr. Hickok a bit, I think there were problems at retail with failure to pass price signals with the consequences on the retail customers, but I think the problem, the missing piece was at the wholesale level.

In the Pacific Northwest, Mr. Hickok says that the shortages, the failure to acquire generation, build generation was masked by good water years, but that never happened in the past, and the reason it never happened in the past is people made decisions about how much power they needed to buy, utilities did, based upon critical water, worst water year of average, and saying that, taking the position that the utility taking the position that it did not have to arrange resources, because it hoped it would be lucky and that it would rain a lot and there would be surplus power available to buy at very low prices, that was incurring a risk. That was willing to take a bet, and so that created a consequence, ultimately now for Bonneville in terms of the load that is placed on Bonneville.

I think the fundamental issue is the load-serving entities whether they are investor-owned utilities or public-owned utilities have a responsibility either in terms of the actions they take or the type of notice they give Bonneville in this region, so that the generation can be built. Absent that, the only signals that are going to occur are going to be short-term price spikes. That is the way that the developers will learn.

Senator DORGAN. And the short term is really antithetical to reliability?

Mr. SPIGAL. Absolutely. It is antithetical to supply reliability.

Senator DORGAN. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman.

This reliability question is so interesting, I think we should continue on it for a second, and Miss Nelson, if you could just walk us through, say the legislation that Senator Smith has introduced and has passed the Senate before was actually in place prior to say, you know, last summer, how exactly would they have operated in avoiding the situation as it relates to California?

Ms. NELSON. Well, I do not want to fall into the trap of saying if the legislation had been in place that this would have eased problems in California. In fact, the rolling blackouts were conducted well according to NERC rules. There was not—

Senator CANTWELL. By that you mean?

Ms. NELSON. That the whole system did not go down. The NERC rules were followed, so the curtailments happened in an orderly way. It may not have been orderly from the customers' point of view, but at least the whole system did not collapse, and I want to make sure that you understand that what the NERC legislation is proposing again as the wholesale-retail dividing line is a not a bright line, but it is the line that we in electricity rely upon to try to get the jurisdictional piece between the Federal and the State dividing lines for jurisdiction established, and it is essentially the States are responsible for retail and intrastate safety and transmission, but again, each State is so different that in California they had already formed what Mr. Hickok referred to as a regional transmission organization, a California independent system operator, and its rules were primarily followed last month, in the last few months.

Just a week ago they weren't followed, and the ISO issued some very stern admonitions to a couple of these retail marketeers, but what we are proposing is that the FERC would create a delegation of authority that really what would change would be that people

who did what happened in California last week would be fined, so that it would hurt for them to violate NERC rules, and they would be a deterrent effect, so they would not do——

Senator CANTWELL. When would somebody receive the fine under that situation?

Ms. NELSON. Hopefully not months after the fact.

Senator CANTWELL. Which is what, NERC was very late at citing an actual problem?

Ms. NELSON. Exactly. There would be a real deterrent effect, and people would know that it would really hurt them in their pocket book, so they would not do knowingly what they are alleged to have done last week in California, and what was alleged to have been done in Ohio a couple of years ago, but again, the jurisdiction of the NERC FERC would be different than what the California ISOs or the RTOs would have jurisdiction over enforcing, as the, as you step down in terms of where you are in the grid. This is really bulk power we are talking about here. The State responsibilities for the local utilities would remain unaffected, and so the rules that are there would remain as they are, and it is again, it is not, this is not the most comforting answer I can give you, but it certainly would have helped.

Mr. HICKOK. Senator, could I add a note to that? Stability and reliability are a real time operations issues, and are distinguished from the adequacy of the physical amounts of generation and transmission that exist in the system. It is a different issue.

Basically, the narrow issue of stability and reliability is how do you run given the physical assets you have got, how do you run reliably and safely, and what limits do you put on lines for loadings and what limits on operating plants so that the grid does not collapse. So, if you are in an adequacy problem, there just literally is not enough physical supply as we saw in California, it governs the way demand will be involuntarily shed through rotating blackouts. That is really NERC's responsibility to be sure that all of these real time operations happen within certain parameters, so that the grid maintains its integrity, but it is a completely separate issue in terms of, what we do to ensure the adequacy of the physical assets, the amount of generation that is available to us to work with, and the amount of transmission to work with in this system.

Senator CANTWELL. I want to follow up on that, because I think what is at heart here in the complexity is really the consumer, and one of my energy advisors who is here this morning had suggested to me that really this is the equivalent of what we do with banks and FDIC insurance. The banks have to, once entering into a relationship with consumers, make sure that they have a reliable supply of money, and when there are runs on banks, they have to have a back-up plan, or so it seems to me at the national level we are faced with giving FERC more responsibility, an entity may not have reacted as quickly or have all the tools, still may not be the right model, as Sharon was saying, to mix economics and regulatory.

There is one aspect of the NERC that I do think is valuable, Mr. Chairman, and that is the ability to have international input and conversation which FERC cannot do, because if we have that, then we are not constantly dealing with well, if we put these regulations

on at the U.S. level, is not that just going to invite people to do things on an international basis.

So my question is, we have these choices. We have, you know, more empowerment to FERC to have oversight here, which people say this is a puzzle that there will only be a piece of, we have the ability to make more responsibility in organizations like FERC, or we have the ability to make more consumer-friendly requirements of entities to make sure that they either have the load or the back-up plan that will not leave consumers in the lurch when we have a hydro shortage or a spot market that is out of control, and that is really what I think we have to answer to consumers. So I do not know which of those, if you could just each answer. I kind of know where Sharon is, because she has already supported the legislation, but where are you, Mr. Spigal and Mr. Hickok, on which of those entities which we invest in, or should we do all of those in the sense of putting further reliability in the hands of entities that will protect consumers?

Mr. HICKOK. From a reliability and stability standpoint, we are completely in support of the NAERO legislation, and I would support Sharon Nelson's testimony entirely in terms what they need to make sure that the grid operates in a stable and reliable fashion, given the assets that are engaged real time. Those are big issues, no question about it. The grid right now is precarious, and it is operated now in ways that were not anticipated because we basically imposed a market environment. Generation patterns are from an operational standpoint, frankly, pretty wild, they do threaten the integrity of the grid, and they demand a different approach. So we are with that a hundred percent.

Senator CANTWELL. And nothing, no further involvement of FERC, no further responsibilities or oversight from FERC?

Mr. HICKOK. From a reliability and stability standpoint, the Congress is basically putting in the underpinnings that are necessary at FERC, to be then delegated to the NAERO board. This is an independent board, by the way, NAERO. Hopefully, it will not be captured by the industry. That is why it was designed to be the way it is, but it does depend for technical support on industry committees that provide the technical information on which it acts. We think that is definitely the way to go, but that is only half the picture, as you are pointing out. The other half is how do you secure an adequate supply of both transmission infrastructure and generation, and even the conservation on the demand side, that assures that people who bought firm service get firm service. As the Silicon Valley Manufacturers Association will remind us all, what they contracted for, they haven't been getting lately, and it is a lot like doing business in a third-world country last summer down there. What we want to assure is that we do not have that situation operating in the Pacific Northwest.

Senator CANTWELL. Mr. Spigal, you made the points that we do not really know the loads that the utilities have now, so if the information is not available how can we tell whether we are going to meet demands for the future?

Mr. SPIGAL. If I could back up for just a second, I agree completely with Mr. Hickok and Miss Nelson. I think the transmission reliability and transmission planning and transmission operations

jurisdiction proposed for FERC, that is encompassed within the NAERO proposal is long overdue, and I think it is a terrific idea. That does not address fixing the supply responsibility. I thought your analogy to FDIC was fabulous, and that is exactly the problem. Historically that has been handled at the State and local level, and it is particularly an issue here in the State of Washington where 70 percent of the load is the responsibility of publicly-owned utilities which are not subject to review, subject to the jurisdiction of the Washington Utilities and Transportation Commission, and I think the question that I thought I heard was should that be a FERC responsibility? Should that be a national responsibility?

That would be, I think, historically, an enormous shift in responsibility to the Federal level, and yet there is a problem which if it is not fixed in terms of making sure that local distribution utilities have responsibility of doing exactly what Mr. Hickok says, making sure the firm power is available when people flick the switch or when they turn on their computer and when the server farm is operating, and that is a critical responsibility, and that responsibility no longer works if that responsibility is fulfilled through the cultural mandate of what it means to be a utility. Utilities are businesses, and they look at cost benefits of buying fairly high cost power versus hoping that it rains or hoping that something good happens, that is really tough and unless that piece is fixed either through some Federal legislation or through some local State-by-State initiative, the California experience will repeat itself. It will repeat itself, and that experience was nobody was buying in the forward market. FERC has identified that, and FERC's studies are very clear on that. I hope that answers your question.

Senator CANTWELL. So should you be saying that we should be looking on the State-wide basis instead, because I think somewhere the consumer has to be protected, and I think your last point is the more important one, and that is we have visited this problem before, and so how do we protect ourselves in the future, and again we are going to hear from the next panel about renewables and I am sure about diversifying our energy source, and obviously we are in this national debate, but how do we make sure that we protect consumers from this situation again?

Mr. SPIGAL. I am cringing saying Federal legislation is necessary, because—

Senator CANTWELL. You could say that the missing link here is as partial deregulation has taken place, there is nobody responsible making sure that that load supply is there, and I think one of the FERC commissioners has suggested that is what you put, must-build requirements in legislation, and I am sure that will be discussed at the national level.

Ms. NELSON. Senator Cantwell, can I just take a stab with this? We have all been infatuated with the market for the last two decades, this jurisdiction, for example, when I started in 1985 at the commission, we had utilities file their budgets with us every year. They told us what they were going to do next year, 5 years out, 10 years out. Well, over time we said, hey, that is kind of an infringement on their free market prerogative. Why should they be disclosing to a public body what they are going to do? So we abolished all that budget thing, and we do not allow the telephone com-

panies to build anymore, so the whole digital divide that the Congress is worried about is another fact in our State that we, as public officials, they, as public officials, can no longer get their hands around even at the State level. So it might be wise for Congress to look at from some sort of notion, again, from sort of from the ground up, what does the obligation to serve mean anymore?

Mr. HICKOK. And I would say that is largely a State issue. The Federal Government can move to preempt the States, but right now it is squarely with the States to decide who has the obligation to serve at retail, and most of the States are considering how that obligation will change, whether the existing distribution utility will be the primary supplier, a backstop supplier, or will competition be allowed at retail?

Bonneville, for its part, is the backstop wholesale supplier to every retail utility in the Northwest. One of the things that we noticed was that, as they all ran from us 5 years ago and then came running back just last year, that puts us in a fairly precarious situation for ensuring stability of rates, because we suddenly had to assemble a power supply, and we were actually told 5 years ago not to worry about that.

So there is a contractual issue in terms of who has the obligation, and then as they turn to supplies, they can develop those supplies themselves, or buy from Bonneville, give us little advance notice, or buy from a merchant developer. But we need to know what the rules are going to be at retail.

Ms. NELSON. Senators, Senator Dorgan's admonition about not yesterday's policy I think is also really well taken in this industry. It seems in this industry in my professional lifetime we always learn the wrong lesson from the last war.

When I left the commission in 1997, our governors convened something called the Regional Review to look at how the States, the four Northwest States should respond to the 1992 electricity revolution, and Montana and Oregon went the California route, the retail route, and just for an instance, we have had Interrun enter Oregon's market and exit in the 4 years since I left. They thought there was a really good deal there. They bought Portland General Electric. They thought they could go into retail in Oregon, and then did they sell it yet?

Mr. SPIGAL. No.

Ms. NELSON. They are trying to sell it, but it has not worked up here in the Northwest, and so I think the State legislative bodies and the Governors are trying to deal with that reality at this point, and I do not envy Congress' job, but the FDIC is sort of, the consumer disclosure issue might be another way to go, but these fundamental issues of who is going to be providing generation supply, who is going to be siting new transmission? These are huge, huge issues, and they are different from the NERC, NAERO reliability piece.

Mr. SPIGAL. Maybe the type of solution is one where it is a Federal mandate, but it is supplied at the State and local level. There are many Federal programs where local governments make the implementing decision, but the standards are federal, and I know that would be an anathema to many utilities. I think probably most States have that established, but as long as the responsibility lies

with local distribution utilities invested or publicly owned, and as long as the information is basically proprietary under this type of market situation, nobody knows, except in the case of Bonneville. Bonneville publishes resource balance information.

Senator CANTWELL. I think that perhaps we just enter these perfect storm conditions, that we had the second worst drought on record, that the spot market was made worse by California, and that all these things happened, and even if you had 15 or 20 percent reserves it would not have helped, but I think the economic consequences to the region have been so drastic, 50 percent rate increases, people basically conserving as much as 20 or 30 percent of their businesses and still seeing huge rate increases, the loss of jobs, the potential economic impact to some of the large industrial users, it is just too significant for us to say that they were perfect storm conditions, and there is no way to plan for them, so I think we will have to look hard at that question.

Mr. Chairman, I know we have a second panel, but if I could—

Mr. HICKOK. Senator, if I could add one note, so it is not lost, the adequacy of the bulk transmission is equally as difficult an issue as the adequacy of the generation to serve this need. This is not well understood, so it kind of gets short shift. People understand that power supply and demand are out of balance, but honestly how the grid will be expanded and how it will be operated are equally difficult issues. For that we are looking at an NTO, a regional independent grid operator who will do the planning and make the decisions and operate the grid, so that it is a fair, open, non-discriminatory common carrier, and it is not benefitting a generation affiliate against the competition, and it is making the kinds of investments in the system that make sense from a regional standpoint.

Right now there are no easy solutions to all of the bulk transmission expansion and operation issues without a creature like that or something to serve equally in that place.

Senator CANTWELL. I know we have a second panel, but there are two other important issues that I just feel that I would love to hear from the panelists on. I feel somewhat like I am hearing the previous statements of Senator Jackson and Senator Magnuson about Northwest power and the direction of our State, and clearly, Mr. Spigal, in your testimony about the Northwest Power Act ensuring that the Northwest have an adequate and efficient, economical power supply, it seems there is some difference here among the panelists on how we should or how we have proceeded, let us say, in the last couple of years, and how we should proceed going further on this, and so my question is first and foremost, should we create a Northwest title in the legislation and be specific about the direction? Should it be a time again in which our delegations said this is the focus of power for the Northwest, and secondly, what do we need to do to get the administration to be supportive of BPA borrowing authority given that part of our challenge is expanding transmission within our State?

Mr. SPIGAL. So from what I understand the debate is inevitable about Bonneville given the fact that there is a substantial load on Bonneville. There are demands on Bonneville's limited power supply. There is a debate about whether or not Bonneville should ac-

quire resources. It has been a little over 20 years since the regional act was passed. I suspect the debate will be on, and there will be expectations, and there will be opposing visions about Bonneville's future role, and even if it is an affirmation in some manner or tweaking of the statutory responsibility for Bonneville, that is probably not avoidable.

I also believe that it is necessary for the Northwest, a Northwest section to create clear authority for Bonneville to be part of an RTO. I think the existing fragmented system, transmission system in the Northwest should be replaced by a single operator, and I believe that legislation is required for that and has been proposed in previous congresses, and I think that is something, even before then, Senator, I think that inability of Bonneville to have sufficient funds to build transmission to provide service for many of these power plants which are coming on or supposed to come on line in the next few years is going to have a chilling effect. If Bonneville does not get the funding, the light at the end of the tunnel, the rainbow we all seek is not going to materialize if plant builders see Bonneville cannot supply transmission.

Some of those plants, even the ones which look like they are well organized and well funded, they just probably are not going to have a choice. They are going to have to stop spending money. I think that is a very credible issue. Is that responsive?

Senator CANTWELL. I would be interested in what you meant by tweaking. That would be the delegation saying specifically, here is the broad focus of who should be served by BPA?

Mr. SPIGAL. Yes.

Senator CANTWELL. You think we should decide that and be specific?

Mr. SPIGAL. I think it is clear that at this point, for example, the direct service industry is on their way out, that Bonneville has contracts to serve the direct service industries through 2006, and most of those industries are shut down through 2003, and I understand informally, there has been no formal position that Bonneville says it will not serve the industries after 2006, that they have to find other supply sources. So I think that debate is going to go on, and there is going to be a resolution, either no legislation which means they will be off the system, or there is going to be legislation.

It is an issue about what it means to be a load serving entity, which Bonneville is, directly or indirectly, and I think there are people who would want to revisit the issue about whether Bonneville should be buying resources, buying, whether it is conservation, renewable or generating plants. I just think that debate is inevitable, and having the debate without having closure, some restated mandate for Bonneville would not be productive. It will just leave us where we are today, a lot of dispute about Bonneville's role.

Ms. NELSON. I agree.

Mr. HICKOK. Senator, Bonneville has not said it cannot and it will not supply the direct service industries after 2006, but we do need to know to what extent that we will, and we need to know that a long time before we get to 2006. So, we have been encouraging the industries as we have negotiated contracts with them for supplies in the 2002 to 2006 period to let us know whether they are going to want service from us after 2006 or not, to square that

up, so we do not get to that point where suddenly we have a big regional discussion, and it is decided Bonneville should supply them, and we haven't had time to arrange for the adequacy of the supply.

Bonneville as a backstop supplier in the region can work in the new environment. The transmission issue, how Bonneville's transmission system is operated in an RTO kind of environment, how a Federal entity turns over effective control of a Federal system to a non-Federal entity, that is a little bit trickier issue. We believe that discussion needs to take place because Bonneville is 80 percent of the transmission in this part of the country, and it does not make sense to have an RTO without us. We have been working with the other transmission owners and with FERC to understand how we can bring that together. It may take legislation. There are some legal opinions as to whether it will or it will not. We are proceeding under the assumption that it will not, but we would not shy away from encouraging you to clarify some of the issues that are around the edge of that situation.

Senator CANTWELL. I know I am joined by several of my Northwest colleagues on the Energy Committee in being very concerned about the BPA bonding authority, and Senator Murray has been a leader in making sure that that concept becomes a reality, but how can we better explain the BPA case to the administration that the current bonding authority that is left over is not sufficient for what we need to do to move forward?

Mr. HICKOK. I think that the case has been made pretty well. Bonneville is self-financed. We do not get annual appropriations to operate. We are entirely financed with ratepayer revenues, but our access to capital is the sale of bonds. In 1974, when that authority was provided, we were going to go straight to the capital markets. But, at the last second before that legislation was passed, the U.S. Treasury stepped in and said no, we do not want a competing Federal security out there. We will buy your bonds, package you up with the rest of the government which we are financing and refinancing every day, and that will be efficient. That has indeed been efficient.

Later, when the budget act which formed the budget committees and the current scoring system was enacted, a situation was created where Treasury buys Bonneville's bonds, it looks like an outlay, just like any Federal appropriation, as if it never comes back to the treasury. In fact, we repay all of those loans from Treasury in full at market interest rates, Treasury's cost of money plus a markup. So it is not a subsidy situation, and unfortunately it really confounds the situation when the Appropriations Committee and OMB face the issue of how does Bonneville square in the budget. From a long-term perspective, we are a net zero, if you look out long enough, because we are repaying everything we get as Treasury loans, which we only get when Treasury buys our bonds.

Right now the situation is that we will reach our bonded indebtedness limit in 2003. So technically, do we need more borrowing authority in 2002 for the 2002 program? Literally, no, but almost all of the projects that we are describing that respond to the infrastructure needs are multi-year projects. These require 2, 3, 4 years to complete, and with the existing borrowing authority, we do not

have the bonded indebtedness to cover completion of projects we would start in 2002, and therein lies the rub. The picture is pretty clear in terms of when we run out. We run out at the end of 2003. The question is, if we do not get additional borrowing authority, would we start projects that we cannot finance to completion? No business would do that.

Senator CANTWELL. Thank you for that answer, and, Mr. Chairman, I think it is something that I think the committee will be dealing with, and your seatmate as well plays an important role from the budget perspective, and how we get a resolution to this issue. So thank you very much.

Senator DORGAN. Let me ask one additional question of Mr. Hickok, and then we will be finished with the panel.

You indicated in your testimony that you had some scary days, and you had power system emergencies, but you had not had blackouts here. Can the residents of the Northwest expect that will continue, not the scary days, but that you have matters in hand, and they will not experience blackouts in the future?

Mr. HICKOK. It takes a coincidence of several events, each of which has a very low probability of occurrence to get us close to the edge the way we were last winter. Last winter we literally had that with lowest water or second lowest in recorded history, starting the winter 3,000 megawatts short of what we should have had on the system from an historic reliability standpoint, and being unable to import power from California in winter. We normally can import large amounts of power from California in the winter. California is a summer-peaking system, and last winter with 55,000 megawatts of in-State generation and about 35,000 megawatts of in-State load in California, they were blacking out. That was astonishing. We had never seen anything like it. So those were the three strikes and you are out, literally. The lights in the Northwest should have gone out in February, and the only reason they did not is that we and some of the investor-owned utilities and some of the big public systems bought out load. I mean we shut down, as I said, a total of about 3,000 megawatts of industrial traffic in the region.

Senator DORGAN. I am asking about the future. My question is can the people of the Northwest expect that will remain the case, that they will not see rolling blackouts here?

Mr. HICKOK. Absent another water year like the present, we will not be that close to the edge again, but we definitely have to climb out of the hole. We are 3,000 megawatts in the hole.

Ms. NELSON. Mr. Chairman, I am glad Mr. Hickok is chief operation officer if Bonneville is optimistic about that. I am also glad I am not in the chair of the utilities commission.

Senator DORGAN. This has been a very interesting panel. We thank you for being with us and presenting testimony today.

We will next call on Miss Rachel Shimshak and Mr. Steve Hauser. Miss Shimshak is a director of the Renewable Northwest Project in Portland, Oregon, and Mr. Hauser is senior account manager, Pacific Northwest National Laboratory in Richland, Washington. We welcome both of you, and we will include both of your statements as a part of the permanent record, and we would

ask you to summarize, if you would, and why do not I call on Mr. Hauser first? Mr. Hauser, you are with Pacific?

Mr. HAUSER. Yes, sir.

**STATEMENT OF STEVEN HAUSER, SENIOR ENERGY PROGRAMS MANAGER, ENERGY DIVISION, PACIFIC NORTHWEST NATIONAL LABORATORY, PORTLAND, OR**

Mr. HAUSER. Thank you very much.

Good morning, Chairman Dorgan and Senator Cantwell. I am pleased to be here this morning to participate in this timely and critically important hearing.

My name, as you mentioned, is Steven Hauser. I am a senior manager with the Energy Division of Pacific Northwest Laboratory, which is operated for the Department of Energy.

My colleagues and I at the laboratory appreciate the leadership that both of you are providing in creating new national policies related to energy. I am also pleased to share with you some of the innovative ideas and technologies that we are developing at the laboratory. We believe that these ideas can have significant impacts on the future of our energy system in the Northwest and across the Nation.

As Senator Cantwell knows, the Pacific Northwest National Laboratory provides the region and the Nation with over 3500 dedicated staff members that explore the fundamentals of science and technology leading to break-through solutions for many of our toughest problems. In addition to our main facility in the Tricities, PNNL operates a marine sciences laboratory in Sequim in this State, and also has offices in Seattle, Portland and Tacoma.

We have many staff that focus on energy programs that range from developing new fuel cells to analyzing the reliability of the electrical grid, to changing the use of energy in buildings.

We have a strong historical relationship with Bonneville and significant partnerships with other regional organizations supporting them with research, development and analysis for more than two decades now.

The Northwest has always been a leader on energy issues—with PNNL and Bonneville providing much of that leadership. This leadership has been key in developing and deploying new energy technologies and innovative energy systems throughout the Northwest. Much of this work has been recognized nationally and even internationally as pioneering efficient and reliable energy technologies. We are now faced with new opportunities to show this leadership.

The region has an infrastructure that is not meeting our current and projected needs given a continuing strong economy and the lack of investment during the last decade. Incremental improvements may keep an efficient system afloat, at best, and at worse, may lead us to another even larger crisis in the future. The challenge is to ensure that new investments in central plants, gas and electric transmission and distribution and use efficiency distributed generation and other distributed resources are the right investments, the investments that create a cleaner, cheaper and more reliable system, one that integrates production, delivery and consumption to sustain our increasingly dynamic and technology-driven economy. For this, we need a new look at the situation, one that

embraces the growing complexity of our energy system, where simple solutions are no longer possible. I believe we are on the verge of a major transformation in the energy system that meets this challenge, a transformation that recognizes, that recognizes and embraces the complexity while it preserves the health of the entire system and meets the diverse and individual needs of each consumer, a transformation that creates a web of energy sources and synchs, buyers and users, all interacting in near real time to balance supply and demand, investments and costs.

As we begin this 21st century, the information age demands a new model, one that leverages information to optimize our use of energy. This new model promises to carefully manage our use of precious resources and expensive assets while protecting the environment and enhancing the economy. Let us just imagine for a moment what if every business, home and appliance connected to the system could provide information to the system on its need for energy now, today, this week, and in the future. What if they each could also let the system know what energy they are willing not to use today, this week and in the future? What if every electrical generator from Grand Coulee Dam to a small fuel cell in a micro-turbine in this building could provide information to the system on what energy it could provide and at what cost, and what if the system could take this information and create a network and a market for optimizing the best use of energy, meeting every need and do all of this in real time?

This vision of the future is not just a dream, but a potential reality. Right now we have technology and techniques that are already transforming other business sectors and are now ready to transform the energy sector. Advances in information technology continue at an astounding rate. Companies here in the Northwest are instrumental in creating some of these technology breakthroughs and bringing them to market. Faster processors, new operating systems, optical, wireless and infrared telecommunications, intelligent software agents and more are transforming supply chain management and other business sectors today, and they will, these same technologies will transform the energy sector tomorrow.

These new technologies will allow for distributing, computing, and communications to be imbedded in equipment at all levels of the energy system, providing a pipeline for data and financial transactions. These innovations provide the potential to create virtual resources where geography and ownership are less important than contract terms, real time measurement, control and valuation.

The challenge is to define the protocols and the appropriate infrastructure requirements to enable security, privacy, accountability, robustness, flexibility and adaptability of these new energy networks.

We believe that this level of interactive communication across the entire network of supply and demand will better capture the inherent variability of such factors as time of use, emissions, power quality, production costs, value of end-use services, reliability and reserve capacity. Although we have not quantified all of these benefits, we are convinced that higher asset utilization and increased efficiency will result.

This is not just a national laboratory vision. IBM, Alstom, and other companies share this vision and are creating new products and services to begin this transformation. Opportunities will explode over the next few years as current prototypes become real solutions.

Now, in my testimony, I have given several examples of these technologies. In the interest of time, I want to just highlight a couple of those. The laboratory has already begun working with Bonneville, for instance, on a concept called the EnergyWeb. This is an Internet-based system of monitoring controls that will enable distributed generation and demand resources to be dispatched remotely. It will include technology such as wind, solar, biomass, standby generators, storage and load controls. This new tool for aggregating resources is useful to determine the real impacts these technologies could have on the power system and the dynamic optimization strategies.

We are also developing a new system of what we call grid-friendly appliances, buildings and loads, computer chips embedded in grid-connected devices will be able to sense the condition of the grid, and also sense real-time price signals and adjust their performance accordingly. For example, refrigerators could potentially precool or avoid defrost operations during periods of peak demand, momentarily interrupting operations to stabilize the grid during emergencies.

Other appliances like water heaters as an example will support end-use gray-outs that reduce system demand, but still keep the power on for priority loads like traffic lights that would otherwise be blacked out.

Distributed generation offers opportunities to incrementally add capacity where it is needed most, reducing the risk of building large powerplants, displacing the need for new substations and lines, and offering huge opportunities to use waste heat for useful purposes in buildings and industry. By networking these devices we can optimally dispatch them to cooperatively meet both local loads, and system needs. Distributed generation also establishes precedents for interconnect protocols, policy and financial mechanisms that will facilitate the entry of other technologies such as storage, demand-side resources, fuel cells and even renewables.

Let me end by saying that PNNL is committed to work with Bonneville and other Northwest utilities and organizations to explore these new concepts and test them in facilities, neighborhood and communities around the region. We believe the Northwest can provide a unique testbed for advanced prototype and pilot scale projects.

The committee's current legislation supports many of these new ideas that I have discussed. We look forward to working with the appropriate committees including your own and other parties to see the potential of these ideas bear fruit.

Thank you very much for your time and attention, and I will be happy to answer any questions.

[The prepared statement of Mr. Hauser follows:]

PREPARED STATEMENT OF STEVEN HAUSER, SENIOR ENERGY PROGRAMS MANAGER,  
ENERGY DIVISION, PACIFIC NORTHWEST NATIONAL LABORATORY, PORTLAND, OR

Chairman Dorgan and Senator Cantwell—I am pleased to be here this morning to participate in this timely and critically important hearing. My name is Steve Hauser and I am a Senior Energy Programs Manager in the Energy Science and Technology Division at the Pacific Northwest National Laboratory, operated for the Department of Energy by Battelle Memorial Institute. My colleagues and I at the Pacific Northwest National Laboratory appreciate the leadership that both of you are providing in creating new national policies related to energy. I am also pleased to share with you some innovative ideas and technologies we are developing at the Laboratory. We believe that these ideas can have significant impacts on the future of our energy system in the Northwest and across the nation.

As Sen. Cantwell knows, the Pacific Northwest National Laboratory (PNNL) provides the region and the nation with 3500 staff members dedicated to exploring the fundamentals of science and technology leading to breakthrough solutions for many of our toughest problems. In addition to the main complex in Richland, PNNL operates a Marine Sciences Laboratory in Sequim and offices in Seattle, Portland and Tacoma. We have many staff focused on the energy sector with programs that range from developing new fuel cells to analyzing the reliability of the electrical grid to changing the use of energy in buildings. We have a strong historical relationship with Bonneville and significant partnerships with other regional organizations, supporting them with research, development and analysis for over two decades.

The Northwest has always been a leader on energy issues—with PNNL and Bonneville providing much of that leadership. This leadership has been key in developing and deploying new energy technologies and innovative energy systems throughout the Northwest. Much of this work has been recognized nationally, and even internationally, as pioneering efficient and reliable energy technologies.

We are now faced with new opportunities to show our leadership. The region has an infrastructure that is not meeting our current and projected needs given a continuing strong economy and the lack of investment during the last decade. Incremental improvements and panic-driven searches for “silver bullet solutions” may keep an inefficient system afloat, at best, and at worst may lead us to another, even larger crisis. The drought condition currently in the Northwest complicates the situation and adds uncertainty. The challenge is to ensure that new investments in central plants, gas and electric transmission and distribution, end-use efficiency, distributed generation and other distributed resources, are the right investments—the investments that create a cleaner, cheaper, and more reliable system; one that integrates production, delivery, and consumption to sustain our increasingly dynamic and technology driven economy. For this, we need a new look at the situation, one that embraces the growing complexity of our energy system where simple solutions are no longer possible.

I believe we are on the verge of a major transformation in the energy system that meets this challenge. A transformation that recognizes and embraces the complexity while preserving the health of the entire system and meeting the diverse, individual needs of each consumer. A transformation that creates a web of energy sources and sinks, suppliers and users, all interacting in near real time to balance supply and demand, investment and cost.

Our energy system has its roots in the 19th century industrial revolution with demand driving supply, and large investments in infrastructure driving the economy. This system has served us well. As we begin the 21st century, the “Information Age” demands a new model, one that leverages information to optimize our use of energy. This new model promises to carefully manage our use of precious resources and expensive assets while protecting the environment and enhancing the economy.

What if every business, home and appliance connected to the “system” could provide information to the system on its need for energy now, today, this week, and in the future? What if they each could also let the system know what energy they are willing to not use now, today, this week and in the future? What if every electricity generator from Grand Coulee Dam to a small fuel cell or micro-turbine in this building could provide information to the system on what energy it can provide and at what cost? And what if the system could take this information and create a network and a “market” for optimizing the best use of energy, meeting every need? Plus do it in “real time”?

This vision of the future is not just a dream but a potential reality. Right now, we have technologies and techniques that are already transforming other business sectors ready to transform the energy sector. Advances in information technology continue at an astounding rate. Companies here in the Northwest are instrumental in creating technology breakthroughs and bringing them to market. Faster proc-

essors, new operating systems, optical, wireless and infrared telecommunications, intelligent software agents, and more are transforming supply-chain management and other business sectors today. They will transform the energy sector tomorrow.

These new technologies will allow for distributed computing and communications to be embedded in equipment at all levels of our energy system providing a pipeline for data and financial transactions. All parties, without regard to their position within the physical hierarchy, will be allowed to participate in open, free markets for energy commodities. These innovations provide the potential to create "virtual" resources where geography and ownership are less important than contract terms, real-time measurement and control, and valuation. By valuation I mean how much it's worth and when and where it is used or not used. The challenge is to define the protocols and appropriate infrastructure requirements to enable security, privacy, accountability, robustness, flexibility, and adaptability of these new energy networks.

We believe that this level of interactive communication across the entire network of supply and demand will better capture the inherent variability of such factors as time-of-use, emissions, power quality, production cost, value of end use services, reliability, and reserve capacity. Although we have not quantified all of the benefits of such a vision, we are convinced that higher asset utilization and increased efficiency will result.

This is not just a Pacific Northwest National Laboratory vision. IBM, Alstom, and other companies share this vision and are creating new products and services to begin the transition. Opportunities will explode over the next few years, as the current prototypes become real solutions.

Let me give a few examples to make these concepts more tangible. PNNL and Bonneville have jointly developed the Wide Area Monitoring (WAM) technology suite that now provides real-time monitoring of the performance of the Western grid. This system of data collection and analysis provides valuable insights to anticipate grid stress and to do "post mortem" analyses of complex outages such as the 1996 blackouts in the West. These systems are being installed this summer in CA at the Independent System Operator's facilities. The WAM system was also recognized this year as one of DOE's top 100 technology developments in the 20th century.

Similarly, we also believe that tools can be developed to better match output of the Columbia River Basin hydro system with the power demands of the region. Dry conditions in the Northwest this year have increased our awareness of the tradeoffs between power, irrigation, recreation and fish. An integrated science and technology development program including power market behavior, water resource management, fisheries biology, regional climate based forecasting, and information technology can advance the regions ability to balance power needs with fisheries resource management and other regional needs. Bonneville, PNNL and other regional organizations are already exploring these possibilities.

PNNL is also beginning to work with Bonneville on a concept called the EnergyWeb. This is an internet-based system of monitoring and controls that will enable distributed generation and demand resources to be dispatched remotely. It will include technologies such as wind, solar, biomass, standby generators, storage, and load control. This new tool for aggregating resources is useful to determine the real impacts these technologies will have on the power system and the dynamic optimization strategies. The rapid growth of wind energy farms in the region, in particular, will present new challenges to system operations.

We are also developing a new system of "grid-friendly" appliances, buildings, and loads. Computer chips embedded in grid connected devices will be able to sense the "condition" of the grid in real time and adjust performance accordingly. For example, refrigerators can pre-cool and avoid defrost operations during periods of peak demand, momentarily interrupting operation to stabilize the grid in emergencies. Other appliances like water heaters will support end-use "greyouts" that reduce system demand but still keep the power on for priority loads (like traffic lights) that would otherwise be blacked out.

Distributed generation offers opportunities to incrementally add capacity where it is needed most, reducing the risks of building large power plants, displacing the need for new substations and lines, and offering huge opportunities to use waste heat for useful purposes in buildings and industry. By networking these devices we can optimally dispatch them to cooperatively meet both local loads and system needs. Distributed generation also establishes precedent for interconnect protocols, policy and financial mechanisms that will facilitate the entry of storage, dispatchable demand-side resources, fuel cells, and renewables. PNNL is leading a national program to develop new fuel cell systems whose clean, quiet, and efficient operation make them suitable for even our own backyards. We are also developing advanced diagnostics and control strategies for these devices.

PNNL has recently launched a new effort to construct a new simulation of the energy system using the latest computer modeling techniques. This simulation will analyze technologies and markets to understand and quantify benefits. It will provide insights needed to determine appropriate system control and operational strategies, to guide technology development, study the impacts of open, evolving energy markets, and develop public policy and regulation in ways that equitably enhance the benefits of the transformation. A key part of this simulation is that it combines the engineering aspects of the system with dynamic, evolving markets, strategies and financial instruments.

PNNL is committed to work with Bonneville and other Northwest utilities and organizations to explore these new concepts and test them in facilities, neighborhoods, and communities around the region. We believe the Northwest can provide a unique testbed for advanced prototype and pilot scale projects.

The Committee's current energy legislation supports many of the new ideas that I've discussed. We look forward to working with the appropriate committees and other parties to see the potential of these ideas bear fruit.

Thank you very much for your time and attention.

Senator DORGAN. Mr. Hauser, thank you very much. Next we will hear from Rachel Shimshak with the Renewable Northwest Project.

**STATEMENT OF J. RACHEL SHIMSHAK, DIRECTOR,  
RENEWABLE NORTHWEST PROJECT, PORTLAND, OR**

Ms. SHIMSHAK. Thank you, Senator Dorgan, and thank you for the opportunity to come and speak to you today, and hello, Senator Cantwell.

I'm Rachel Shimshak. I am the director of the Renewable Northwest Project. We are a regional advocacy organization working in Oregon, Washington, Idaho and Montana to promote renewable resources such as solar, wind and geothermal.

We are a little different from some organizations in that we have consumer and environmental group numbers and also energy companies as members. It is the one place that you can get together and try to work towards a common goal, and I am delighted to be here today among my distinguished colleagues to talk to you about the unique role that Bonneville has in pursuing both conservation and renewables to help us deal with our energy crisis and to help manage us into the future.

If the goal of our energy system is to provide reliable, environmentally responsible, stably-priced energy resources, I think we can do four things as we move forward. One is continue to create a diverse portfolio of both demand and supply-side resources, implement transmission and shaping policies which acknowledge the benefits of clean resources, support Bonneville in its clean energy leadership, and enact Federal initiatives that will provide stable funding for conservation and renewables.

I think the way that we manage ourselves out of this current crisis really does matter, and a wise governor once said that "the most important step in developing an energy policy is to understand that energy is a problem that we must manage over the long haul, not a crisis to be solved and forgotten." Although I think a lot of people internalize that concept intellectually, I can tell you that the recent change in energy prices which have fallen in the past couple of months have made some energy managers revert back to their short-term, cost-only outlook on life as opposed to looking at the long-term least cost, and I was interested in coming down here today to look at the front page of the Oregonian, which

has an article about California, and it is titled, "California Now Faces Expensive Electricity Glut," and the subtitle is, "The State May End Up Urging Customers to Use More Power to Avoid Selling the Surplus at a Loss." So I think the long-term is very important to keep in perspective here.

Let me just briefly describe the portfolio of resources that we consume in the Northwest. We certainly produce a lot of hydroelectricity. We consume about 54 percent hydro, but a full 40 percent of the electricity that we consume in the Northwest is fossil fuel, and if we want to keep the system stable in the future, I think we need to add a diversity of resources. Conservation is the cheapest, quickest, cleanest resource available, and we ought to accelerate its implementation immediately.

A whole bunch of the region's utilities and Bonneville joined together to offer energy efficiency programs and products to their customers during this crisis, and a lot of them, as you heard Steve Hickok say, have asked their customers to curtail their loads. The impact that their actions and the calls from Western Governors to reduce energy consumption have actually helped our situation quite a bit, but rather than the boom-and-bust nature of these efforts, we ought to have broad public policies at the State and Federal level that provide consistent investment in energy efficiency, Federal incentives for efficient buildings and equipment, and reserving a portion of utility revenues for conservation investment are just two of the initiatives that we should pursue. Those will help keep the infrastructure in place and keep the investment constant so that we will have the energy efficiency there when we need it.

The next one step, the one closest to the heart, is to move forward aggressively with renewable resources, and I cannot emphasize enough how pivotal the Bonneville Power Administration's role is in this endeavor. As you know, Bonneville serves almost half the people, half the load in the Northwest, and also controls up to 80 percent of the transmission. They also have the statutory responsibility to encourage the development of renewables.

Now, when Bonneville was faced with this 3,000 megawatt shortage, they had more demand than they had supply, they took a rational step, and they initiated a thousand megawatt RFP for wind. Now, happily the Northwest is blessed with a tremendous potential for wind similar to North Dakota. There is quite a bit of resource here, also solar and geothermal, but wind is really the most competitively priced of the renewable resources, and it can be permitted, after it is permitted, it can be built within 6 months, and that is a pretty good thing when you are experiencing energy shortages.

I just want to tell you, this RFP has drawn a variety of different developers from all over the country and all over the world to our region to develop these resources, and the more competition, the better the quality of the projects, the lower the prices are, and the prices have been terrifically low for these projects. In other words, Bonneville is playing a key role in helping develop the market in the Northwest.

I want to just touch on the diversity of different kinds of projects. We have a hundred and ten megawatts of operating wind projects

here. The largest wind project, which Senator Cantwell had an opportunity to visit recently, is the Stateline Project which is located on the Oregon-Washington border in the eastern part of the State. It is a 261 megawatt project, and its economy of scale allowed a single buyer to purchase the entire output of that project, which really was, it acts as the anchor tenant in the region to signal everybody that it is okay to be building and purchasing wind.

We have the first project being developed on Indian land in Montana by the Blackfeet Indian Reservation built by SeaWest, a developer from California. We have Energy Northwest, usually known for their nuclear plants also entering into a wind project also to serve their customers, and the owner of two aluminum plants is also building wind projects with some of the finances that they received from Bonneville for curtailing his load. So there is this incredible interesting diversity of projects.

There are 360 megawatts under construction right now, and 1200 megawatts in the permitting stage. So we stand to benefit if we can follow through to the end of this, and that is the key.

There are lots of benefits to wind energy as in other, as other renewables. There are environmental benefits, but there are also economic development benefits, and for the farmers on whose land these resources are being developed, they get money for every turbine that exists on their land, and that provides kind of a second crop for them and helps them stay in the farming business. We also have quite a vital metals industry here in the Northwest, and the metals industry has been called upon to produce the towers for these wind turbines, and I just learned the other day that a major manufacturer of wind turbines is looking to locate a manufacturing facility here in the Northwest given the activity that is taking place in the market. Again, none of this would be possible without the critical role that Bonneville played.

Bonneville is doing other stuff. They have a conservation and renewable energy discount for their customers which encourages them to purchase these resources, and they offer every one of their customers the opportunity to buy as much green power as they would like, but Bonneville has two incredibly critical roles to play that have not yet been well-defined, especially for wind. One as you heard Steve Hickok say before, that the reason that the Northwest is a great place to develop wind is that the hydro system can act as the battery.

Because wind is an intermittent resource, it needs to blend with other resources in order to deliver firm kilowatt hours, and it is a beautiful situation, but the cost of those shaping services has to be reasonable or else the resource will be priced right out of the market. Those decisions have not been finalized yet, and they need to be finalized soon, so there can be some certainty, and they need to be fair. The other thing is transmission policies. Again, wind being an intermittent resource does not act like a resource where you can predict that you are going to put fuel in the plant, and it is going to produce X-amount of the time. There are better ways these days to predict when wind will happen, but you still need a transmission set of policies that would accommodate intermittent resources at a reasonable price. Again, Bonneville is key to making sure that these policies work for wind.

The developers of wind and the manufacturers of wind have driven the price of just producing the kilowatt hours down 80 percent over the last 20 years, and if we can just figure out how to put those other two pieces together, we can have a very cost-competitive resource that is clean, that helps develop the economic opportunity in the Northwest and delivers power, clean power to its customers.

Bonneville has done a great job stimulating and building the market in the region, but they could chill the market in an instant if they lose their resolve. So I urge you to support them as they move forward on this very important initiative, and the way I characterize this is they have the ruby slippers on. They just need to click their heels together.

Congress can play a further role in helping the development of renewable resources by extending the wind production tax credits, which I know are before you in the Congress, and indeed provide those kind of tax credits to all renewable resources. That will ensure that we have a diverse energy portfolio, not only in the Northwest but at other places around the country.

There is also a proposal for a Federal portfolio standard, and I think that would be developed the same.

We can have a secure, clean future if we prioritize conservation and renewable resources and move forward with their implementation. Bonneville is critical to achieving a clean energy future in the Northwest and to preserving our quality of life. They deserve your support in their clean energy endeavors.

Thank you very much.

[The prepared statement of Ms. Shimshak follows:]

PREPARED STATEMENT OF J. RACHEL SHIMSHAK, DIRECTOR, RENEWABLE NORTHWEST PROJECT, PORTLAND, OR

Good morning Mr. Chairman and Senator Cantwell. My name is Rachel Shimshak, and I am the director of the Renewable Northwest Project (RNP). RNP is a regional advocacy organization promoting the implementation of solar, wind and geothermal resources in Washington, Oregon, Idaho, and Montana. Our members include environmental and consumer groups as well as energy companies. We work together with policymakers, elected officials and customer groups to ensure a clean energy future for the region.

I am delighted to be here today among my distinguished colleagues to address the electricity challenges facing the Northwest, and the special role of the Bonneville Power Administration in promoting energy conservation and renewable energy to help address those challenges. By now you have heard a lot about the ugly prices many utilities and their customers experienced over the last year, our low water situation, and about the uncertainty that has plagued the market over the past five years resulting in a lack of demand and supply-side investments.

We have a chance to move forward and solve these problems if the region works together to address the situation. I want to talk to you this morning about solutions to the problem. If the goal of our energy system is to provide adequate, reliable, environmentally responsible, and affordable energy, I believe there are at least four important strategies we ought to pursue:

- Create a diverse portfolio of demand and supply-side resources;
- Implement transmission and shaping policies that acknowledge the benefits of clean energy technologies;
- Support the Bonneville Power Administration in its clean energy leadership; and
- Enact federal initiatives that will provide stable funding for conservation and renewable technologies.

These four strategies will help us maintain a strong system to serve our needs, and help us maintain a high quality of life.

I believe that the way we manage our way out of this energy crisis matters. A wise governor once said that, "The most important step in developing energy policy is to understand that energy is a problem that we must manage over the long haul, not a crisis to be solved and forgotten." Although many people accept this concept intellectually, the truth is that, given the recent drop in energy prices, many managers already have amnesia about the prices and the problems we have all faced over the past year. Many are reverting back to their old, bad habits of looking only at short-term low prices, and not long-term least costs.

The key to addressing our crisis is to move forward with a diversity of demand and supply side resources. Let me begin by describing the current portfolio of resources we consume in the Northwest. Over half comes from hydro, but a full forty-percent of the electric energy we consume comes from fossil fuels. To keep the system stable in the future, we need to add a diversity of resources, beginning with conservation.

Conservation is the quickest, cheapest, cleanest resource we have available, and we should accelerate its implementation immediately. Many of the region's utilities and Bonneville have joined together in a rush to offer energy efficiency programs and products to their customers, and many have pursued load curtailments with their customers. The impact of their actions, coupled with the calls for conservation from the Western Governors have had a very positive impact on our situation.

Rather than the boom and bust nature of these efforts, we should have broad public policies at the state and federal level that will provide consistent investment in energy efficiency. Federal incentives for efficient buildings and equipment, and reserving a portion of utility revenues for conservation investment are just two of the many initiatives that will help maintain the energy efficiency infrastructure and make sure that the resource is available when we need it.

The next step is to move forward aggressively with new renewable resources. Bonneville's role in the region with respect to renewables is pivotal. As you know, BPA serves over 40% of the load in the region and controls over 70% of the high voltage transmission. They also have a statutory responsibility to encourage the development of renewable resources.

Bonneville responded rationally to their need for additional power with a 1000-megawatt wind Request for Proposals (RFP). Happily, the Northwest is blessed with a tremendous potential for wind, solar, and geothermal power. Wind is the most cost competitive of the resources, and once it is permitted, it can be built within six months. That RFP has drawn a huge diversity of developers to the region. The greater competition created with the RFP will help deliver high quality projects that are competitively priced. In other words, Bonneville is playing a key role in developing a market for wind in the Northwest.

We now have 110 MW of operating wind projects in the Northwest with over 360 MW of wind and geothermal projects under construction. The 261 MW Stataline wind project will be on line by the end of this year. Another 1200 MW of wind is undergoing siting reviews and could be operating by 2003. This is all good news, but it is happening amidst a backdrop of 16,000 MW of proposed gas plants.

Wind power is clean energy, with no air or water pollution, and no fuel price volatility. In fact, wind has no fuel! Wind development also brings with it some important economic development benefits for our region. Some of the best wind resources are found on rural wheat farms and cattle ranches. For every turbine installed on a farmer's property, the landowner receives a royalty payment from the wind developer. This helps create a "second crop" for these farmers which helps them stay in the farming business. In addition, wind turbines sit atop tall towers made of steel. Many in the regional metals industry have been called upon to produce these towers, and one turbine company is currently contemplating locating its manufacturing facility in the Northwest.

Bonneville is providing other green power opportunities for its customers as well. Their recent rate case includes a conservation and renewable incentive program that will reduce the rates for customers who invest in clean resources. And all wholesale customers can purchase Bonneville's Environmentally Preferred Product, or a straight chunk of new renewable power.

Bonneville has two other critical roles in relation to wind resources. One is to provide reasonably priced shaping services for wind. Because wind is an intermittent resource, and doesn't operate 100% of the time, you need to blend it with other resources to create a firm power product. The hydro system is the perfect battery for this purpose.

The final element for making wind a reality in the Northwest is to establish fair transmission policies for renewable resources. The current system was designed for large projects with control of their generating resources. Those existing policies disadvantage intermittent resources such as wind. A wind resource often has to sign

up for transmission services to cover the entire output of the plant even though it may only produce energy 40% of the time. Stiff penalties are assessed for projects that don't use their transmission rights.

The establishment of a new Regional Transmission Organization (RTO) can address these problems if the transmission owners move forward with the recommendations of the regional representatives group. Having a deep and liquid market for transmission rights across constrained paths is critical for intermittent renewables. FERC and the region need to insure that the rules of the new RTO incent the development of renewable resources.

Bonneville has done a great job stimulating and building the market for wind in the region. But they could chill that market in an instant if they lose their resolve. I urge you to support Bonneville as they move forward on this very important initiative and urge them to find timely and fair solutions to the shaping and transmission issues. They definitely have the ruby slippers on. They just have to click their heels together.

Congress can play a further role in helping the development of renewable resources by extending the wind energy production tax credit and providing the credit to all renewable resources. To ensure that we have a diverse energy portfolio, Congress should also enact the federal renewable portfolio standard contained in Senator Jeffords' bill.

We can have a secure, clean energy future if we prioritize conservation and renewable resources, and move forward with their implementation. Bonneville is critical to achieving a clean energy future in the Northwest and to preserving our quality of life. They deserve your support in their clean energy endeavors.

Thank you.

Senator DORGAN. Miss Shimshak, thank you very much.

How important is the production tax credit? I assume I know your answer, but we are, in fact, looking at that at the moment, and would wind energy be developed in substantial quantity here without the production tax credit?

Ms. SHIMSHAK. I do not believe so. I attached to everybody's testimony a copy of the map of all of the different projects that are ongoing in the Northwest. About a year ago, there were only four dots on this, and the combination of Bonneville expressing a need for power, the ability of wind to be generated in the Northwest, and the production tax credit are the critical elements that need to be combined in order to make these things a reality. There is always a terrific amount of development just before the credits are expected to expire, and it would be a lot more sensible to signal that there is an interest in extending those tax credits so that the price of development will be reasonable over a period of time, but they are critical to wind.

Senator DORGAN. It is interesting, the Department of Energy ranks North Dakota as the Saudi Arabia of wind potential.

Ms. SHIMSHAK. It is because they know you are there.

Senator DORGAN. That is right, especially when I am there, but our wind energy development is retarded by transmission issues. So these go hand-in-hand, and I am a big fan of wind energy and a big supporter.

We had a wind energy conference last January in Bismarck, 250 people preregistered, and 550 people showed up. There is a lot of interest in it, and we have to solve the transmission issues in our part of the country.

Mr. Hauser, you know, I keep hearing about fuel cells. I indicated that I drove a fuel cell car last week, but when are we going to see fuel cells really move into the marketplace? When will residential fuel cells be available and competitive in your judgment?

Mr. HAUSER. Well, those are two different questions actually in my opinion, whether they move into the residential markets or

whether they move into other niche markets. You can buy a fuel cell today. It is a matter of how much you want to pay for it. I believe there are niche markets where there is a rational reason for paying the extra amount for having that kind of power, and those markets, I believe, will continue and will grow.

It is still going to be a few years before we see them down to the cost point which they become more pervasive in the market. I do not know whether that is 3 years or 5 years, and we can ask a number of different fuel cell companies around the country, and you will probably get just about as many different answers.

Senator DORGAN. Can you just give a brief description, what applications that you are now working on will we see move to the marketplace in a short-term period?

Mr. HAUSER. Well, we have a number of things that we hope will go into the market. As you know, going into the market is not an easy thing to do. It requires financing. It requires a lot of hard work. So I will give you an example of one that we think will probably move as quick as any, and that is we have developed a rooftop control unit that would go on an air-conditioning system in a commercial building like this that is wireless. It has smart diagnostics on board so, it will actually monitor the health of the HVAC system in a building like this, and essentially phone home when there is a problem, and we are, our experience in being out in the field is that there are not very many air-conditioning systems, particularly commercial systems, that are working at their optimal performance, and there is room for maybe 20 to 30 percent improvement on any system including probably the one in this building, and so these intelligent diagnostic systems that could actually go out in the field and tell you how well the system is working, I think, will probably go into the market fairly quickly.

Senator DORGAN. Senator Cantwell.

Senator CANTWELL. Thank you. If I could follow up, Mr. Hauser, on your discussion about how these new efficiencies in the system will improve, and I want to thank the chairman for his support of the amendment that we got on through on the R&D title that we basically did, and I think it was something that you were involved in—

Mr. HAUSER. Right.

Senator CANTWELL [continuing]. In helping to write the language for, but in looking at how to move forward on an energy policy for research and development, and looking at the power system efficiencies, it was critical, and so that language was added to the title, and I am very appreciative of that support, and you talk about a variety of things in relationship to the improvement, the how to distribute computing and distributing generation, virtual resources, and to a certain degree, when you say virtual resources, I am sure that makes a variety of people throughout our State anxious because what does that mean, virtual resources? These are resources that the generation is here, and we would like to get the benefit of those resources.

My first question is: have you put into some context the savings or the efficiencies that we might reap from the system using new information technologies, and I know that is hard, but just an idea, are we talking about one to five percent savings? Are we talking

about efficiencies in the system that will lower prices by a certain amount? How would you characterize that the best that you can today?

Mr. HAUSER. It is tough to characterize, because actually, the benefits are in the complication, and it is such a complex system that we actually operate, and the more we add distributive resources, the more we add renewable resources, the more complicated the system gets, and so the more difficult it is to really understand what the efficiencies are.

I just mentioned in the previous question that we are finding in air conditioning systems in commercial buildings that there could be as much as 25 to 30 percent efficiency gains possible just by operating them better without really any new technologies.

I think my best guess is that it is 10 to 25 percent that could be sort of squeezed out of the system if we really understood how to operate it better and more efficiently. If we did not run, you know, dishwashers in the middle of the day or try to manage loads better. I think there is a pretty substantial sufficient efficiency gains that could be made.

Senator CANTWELL. Those are actually large numbers if you think about the consequences of what we have been dealing with lately.

You mentioned the need for protocols, and I am assuming what you are saying PNNL is advancing some of these technologies and efficiencies, somewhere along the line, we have to implement a communication and interaction throughout the grid? How would we go about doing that? What role do we need to play in making sure that that happens?

Mr. HAUSER. Well, we are already convening a group of industry companies. In fact, our first workshop is in late September in Colorado. These are companies like IBM and Cisco and Sun and a number of names that we recognize as well as a number of small companies that are playing in this market. So we will begin to get the industry together to start talking about what the issues are, what the protocols might have to be, what is working, what is not working, what is the Federal role, what kind of research needs to be done from a Federal perspective. So I will have better answers to those questions in a few months, and we will continue to engage industry over the period of the next few years to ensure that we are looking at the right issues including protocols.

Senator CANTWELL. And I am assuming the metering is just one small aspect of that?

Mr. HAUSER. One small aspect.

Senator CANTWELL. And you are talking about efficiencies throughout the whole grid and system?

Mr. HAUSER. That is correct.

Senator CANTWELL. That you would have to get some sort of, I do not know what would you call it, an efficiency, an efficiency standard or efficiency protocol, something of that nature—

Mr. HAUSER. Right.

Senator CANTWELL [continuing]. That goes beyond just how do you get distributive power hook-ups to the grid. You are talking about a communication system within the grid?

Mr. HAUSER. It is, and you might even—in some circles we talk about it as plug and play. If you were to buy a fuel cell and put it in your home or put it in this building in the next few years, what we would like to be able to do essentially is plug it in. The system would recognize it right away, and say, “A-ha, we like that you are there, and here is what we would like you to do in order to optimize the health of the system.” Right now we do not understand the system in sufficient detail to really understand how to do those sorts of things, and even issues around renewables, we know the resources are important. We know that they are available, but how best to optimize them? You know, how many wind turbines do you really want in Walla Walla, and how many do you want in Ellensburg in order for the system to really perform at its optimum? Those are the kinds of issues that we would like to get at.

Senator CANTWELL. Well, I definitely made sure that the people at Stateline knew that there was a town in Washington, Ellensburg, that people are constantly complaining about the wind, and they ought to venture up there.

Ms. SHIMSHAK. You will be happy to know there is a project proposed for Ellensburg.

Senator CANTWELL. Miss Shimshak, have we, has your organization set a goal for diversifying our system within the Northwest? I mean, is there a number that you attached to what our renewable focus ought to be or just diversification of our existing hydro reliance?

Ms. SHIMSHAK. We do have a goal, the activities of last year have kind of had an impact on that goal, and we probably will revisit it shortly, but we figure if by the year 2005, we could have one to 2,000 megawatts of renewables in the system that the market would be robust and able to help sustain itself. That is not to say that is the end goal that we want to see for the system, but that is what we think is necessary in order to create a market that can work here.

Senator CANTWELL. You mentioned several times during your testimony how Bonneville plays a vital role in the market development or if their activities were not supportive of renewables which we have made direction towards in the past, are you saying that we need to do something further as far as a directive and a national policy?

Ms. SHIMSHAK. Bonneville does have a statutory requirement to encourage the development of new renewables, and just like any other set of power managers, they are affected by things that happen in the market, and when the market is very high, everybody runs to find new resources. When the market starts to dip lower, they get a little squishier about going to acquire those new resources, and I think they are doing something that is, they are going above and beyond the call of duty in what they are doing in helping the wind market develop in the Northwest, and it will be a sustainable market if they follow through with their expectations, and anything that Congress and the congressional delegation for the Northwest can do to encourage them forward would be most appreciated and to encourage them to resolve some of these outstanding issues that are really the key elements that had need to

be solved for us to make sure that we can do these resources in a cost-effective manner.

Senator CANTWELL. You mentioned the Grassley bill, but I assume you are very supportive of the REPI legislation and continuing that as an incentive for public power to seek renewable resource solutions?

Ms. SHIMSHAK. And there were quite a few public power entities that are pursuing renewable. Seattle City Light right here put out a hundred average megawatt RFP to serve its load and to meet its no-new CO<sub>2</sub> standard that the city council adopted, and they are taking a very positive leadership role in moving forward for this utility. Other public utilities around the region are doing good work, also.

If I might, I wanted to go back to a question that Senator Dorgan asked, and that was the importance of the production tax credit. I know you have probably heard this before, but renewables and conservation have these classic market barriers. They have very high up-front costs, but very low long-term costs, because there is no fuel, and that is a market barrier for an energy manager, because you are looking at gas plants that tend to be pretty cheap to build. Only a third of the cost of the gas plant is in putting it in the ground, and two-thirds is the cost of the fuel, and you take the risk on the fuel price.

Renewables, if you can get past the first decision, you have a stable-priced resource to add to your portfolio of resources which really helps customers in the end because when fuel prices are going up like this, you are not affected, which is why the Northwest has enjoyed so much low cost power, because of its emphasis on hydro systems over time, but the production tax credit is the thing that has really helped resolve that market barrier question. It has brought wind in line with other resources, and the 1.7 cents a kilowatt hour for 10 years has really done that, so we addressed that market barrier problem straight on and it really helps to make things happen.

Senator DORGAN. Thank you very much. Your endorsement of the efforts by Bonneville in this area is very impressive. I can think of many instances around the country where people have tried to develop renewable projects, they have found resistance with the incumbent providers in a range of areas, and I think there really needs to be an enthusiastic endorsement and a set of goals and a willingness to want to make this happen, and I do appreciate the fact that you say that Bonneville is very interested and has been working very productively in that area.

Let me thank the panel for your contribution. This has been an interesting bit of information this morning that I have received, and I know that Senator Cantwell knows this issue certainly better than I and our colleagues on the Energy Committee, because as I indicated as we started, we understand that the Northwest is unique and different. You have a different energy mix, and you have a different set of circumstances here, and I think that her, Senator Cantwell's role is going to be central on the Energy Committee to make sure that when we do what we do in September to put this bill together, that that bill recognizes and addresses the unique needs of the Northwest.

So this hearing is very helpful to me and I am hoping to my colleagues.

We would like to hold the hearing record open for 2 weeks, and if there are those who did not testify today who would wish to submit a statement for the hearing record, we would be happy to receive that statement, and you would just send it to the U.S. Senate, the Energy Committee, and Deborah Estes, the counsel with the committee as a witness today. You are welcome to give your name if you choose to do so.

I thank you, Deborah, for being here, and I thank you Jonathan Black for being here, and I thank my colleague, Senator Cantwell, for being here, and this hearing is now adjourned.

[Whereupon, at 12:00 p.m., the hearing was adjourned.]

## APPENDIX

### ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

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LAKEVIEW LIGHT & POWER,  
*Lakewood, WA, August 13, 2001.*

DEAR SENATOR CANTWELL: On behalf of Lakeview Light & Power and the Washington State Cooperatives, I offer the following comments:

1. The President's Energy Plan, and the House Energy Proposal—These two documents do less for renewable energy than the federal government currently does. We believe the Senate should make sure that there is adequate investment in renewables, as well as the clean coal investments and other energy budget items.

2. BPA transmission—We support BPA's transmission investments over the next 5 years (app. \$1.3 billion of new borrowing requested). However, we (BPA customers) need assurances that the investment will benefit our ratepayers and the value not shifted to other companies if a Western RTO becomes a reality. Concerning the \$700 million in borrowing authority BPA is requesting for conservation and hydro upgrades, we strongly support the hydro upgrades and Lakeview Light & Power and other Washington State Coops continue to support local control of conservation spending.

3. BPA's future—We strongly support preference and urge our Senators to defend the right of public power to continue to provide at cost power to citizens. We oppose market-based rates, additional spreading of benefits to "for-profit" companies, and we believe that BPA service to DSIs must be phased out over time, as preference utilities need the electricity to meet their load growth.

4. Deregulation—We are not convinced that experiments in other states have provided the evidence we need to support deregulation at the federal level. In fact, the opposite is true. Until a number of states can demonstrate over a number of years that competition works in this inherently monopolistic industry, we would not want federal laws or state laws which force consumers in our state to take on such risk.

5. Real Time Meters—We question the need to further complicate the lives of busy Americans by forcing them into a situation where they have to monitor their electricity meters for fear of using too much electricity when rates spike. We continue to believe that providing reliable, affordable electricity is our responsibility. The local utility has the ability to provide the high quality of service consumers deserve and the ability to provide cost-based rates that are competitive and predictable.

6. FERC Jurisdiction—We oppose any expansion of FERC jurisdiction over cooperatives and the PMAs.

ROBIN A. REGO,  
*General Manager.*

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FEDERAL WAY CHAMBER OF COMMERCE,  
*Federal Way, WA, August 13, 2001.*

Senator BYRON DORGAN,  
*Chairman, Senate Energy Subcommittee on Water and Power.*

Senator MARIA CANTWELL,  
*Member, Subcommittee on Water and Power.*

Subject: Electricity in the Northwest: A Unique Region Preparing for the Future

On behalf of our membership and community, the Federal Way Chamber of Commerce respectfully submits the following comments to the Senate Energy Subcommittee on Water and Power at its meeting in Seattle, Washington on August 13, 2001. First let us state that we sincerely appreciate Senator Dorgan and Senator Cantwell for conducting this meeting in King County and for inviting the public to submit comments for the record on this most important issue.

Federal Way is a community of over 105,000 residents and businesses. Our city is located in south King County and we receive natural gas and electric service from Puget Sound Energy, an investor-owned utility. We have been fortunate, so far Puget Sound Energy has been able to manage through this energy crisis without having to raise its rates more than 1.5 percent. As you know, our neighboring communities have suffered double-digit rate increases as a result of the volatile energy markets. It is our hope that Puget Sound Energy is able to continue its course, however we understand that recent decisions by the Federal Energy Regulatory Commission are certain to harm PSE's customers. This is the reason we are submitting these comments. For ease of explanation, we have divided our concerns into two categories. Those applying to potential refunds for electricity sales and those applying to the price control mechanism FERC has implemented.

#### REFUNDS

Citizens and utilities located in the Northwest have already suffered greatly from effects of the California energy deregulation experiment and the flawed markets that this experiment created. The current claim to refunds made by California entities from Northwest load-serving utilities will only exacerbate the situation.

Like other Northwest utilities, PSE in its planning to meet its customers' needs last winter was often forced to buy power at high prices driven by California markets. On the occasions when our utilities' customer requirements were less than projected and they had surplus energy to sell to California, the prices on the California spot markets were likewise high. Those prices, however, reflected the desperate need for power in California due to their inadequate generation. In fact, according to newspaper stories, the federal government was forcing utilities in the Pacific Northwest to sell to California during this time. Our utilities used these sales to help offset the high prices they had already paid for power when we needed it here. Federal Way citizens shod, not pay twice for the California problem—we too paid high prices for power last winter, and now California wants a "refund" for the power we sold to California.

Our Northwest utilities (and their customers) should not be penalized for purchasing power needed to ensure our community's electric reliability and for selling their excess resources into the marketplace at prices set by that market at that time. To treat utilities serving customers as if they were market speculators is unfair to utility customers. We object to any federal policy that would force Northwest citizens to provide refunds to California when many of our citizens have suffered so much from California's energy policies.

As a final point on this issue, we feel strongly that California should be required to pay its outstanding debt to Northwest utilities for power they purchased and consumed. California's unpaid bills should not find themselves into our future electric rates and Northwest utilities should not be expected to absorb those bad debts as yet another subsidy to California.

#### PRICE CONTROLS

On the issue of price caps, we must again make every attempt to be sure that the Northwest is not made to suffer even more consequences from the California deregulation experiment. In that regard, we do not believe that the prices for energy in the markets in the Northwest should be set by the California ISO. The California ISO will only act in the best interest of California and again, our Northwest communities will fall victim to their actions.

As the Subcommittee is well aware, California and the Pacific Northwest experience peak electrical loads at opposite times of the year—California in the summer, the Northwest in the winter. This situation, with the prices set by the Cal ISO, poses the peril of the Northwest having a peak need for power at a time when the California loads are light and markets are calm. In the worst case, the Cal ISO could be congratulating itself for maintaining low power prices while Northwest citizens shiver in the cold and dark of an arctic blast.

As a result, we urge FERC's "correction" to the California deregulation experiment take into consideration the situation in all states in the West, not just California. The "correction" should not "compensate" California by further increasing the expense to Northwest customers and utilities. And, most of all, any such "correction" should not result in the Northwest being unable to meet its load and experiencing its own blackouts. We understand the opinion of many that the electric market may need to be managed so we avoid the price spikes of recent months, however the notion that we are better off now that FERC has implemented a price cap is simply incorrect. If we are to have price caps then it must take into consideration the situation of all utility customers in the West—including those in the Northwest.

Finally, any price mitigation efforts must not impair current and future energy supplies. The established price cap must both protect utility customers from unnecessary and outrageous electric prices and encourage future development of new energy resources. Like other communities, Federal Way is continuously adding new residents and businesses—we want to be sure that there is enough affordable electricity to meet this growth.

Thank you for your consideration of our concerns on this critical issue for the citizens of Federal Way.

Sincerely,

DELORES SHULL,  
*President/CEO.*

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