

Bonneville Power Administration

Stephen J. (Steve) Wright, Administrator



Stephen J. Wright is the rare chief executive who really did come up through the ranks. He began his career in 1981 at the Bonneville Power Administration in the agency's conservation office as an entry-level GS-9. Today, he is BPA's Administrator and Chief Executive Officer, with the second longest tenure of any administrator.

Mr. Wright was named Administrator in January 2002 but had served as Acting Administrator since November 2000. In making the appointment, then Secretary of Energy Spencer Abraham said, "Bonneville is extremely important to maintaining a vital economy and healthy environment in the Pacific Northwest, and we have confidence it will continue to do so under Steve Wright's direction. He exerted outstanding leadership through some of the most turbulent times for the electricity industry. He has demonstrated a bipartisan ability to work with the many constituencies in the region and in the nation."

Mr. Wright took office (first as Acting Administrator) on the eve of the West Coast energy crisis of 2000-2001. His tenure has spanned some of the region's greatest energy challenges – among them, developing power contracts that preserve the value of the federal hydropower system, consecutive years of low water in the Northwest's hydro-based system and Endangered Species Act litigation.

He also has overseen the agency during a time of exciting and ambitious changes. These include the emergence of wind energy as a significant resource, construction and scoping of major new transmission lines to maintain reliability and deliver renewable resources, technical innovations associated with development of a Smart Grid, renewed focus on energy efficiency and progress in restoring Columbia Basin fish runs.

A hallmark of his management style is his belief in collaboration and transparency. He has reached out to customers, tribes and other stakeholders – an achievement reflected in BPA's highest ever customer, constituent and tribal satisfaction scores. Under his leadership, the region concluded a multi-year Regional Dialogue with customers that resulted in all of the agency's consumer-owned utility customers signing 20-year contracts with BPA in late 2008.

During the West Coast energy crisis, Mr. Wright employed creative means to keep the Pacific Northwest from experiencing an electric blackout even as he maneuvered to keep the agency solvent by reducing spot market purchases as much as possible. In the aftermath, he worked successfully to restore the agency's financial stability.

More recently, he forged an agreement with several Columbia Basin tribes, three states and other federal agencies to provide long-term funding certainty for key fish restoration projects. It is a historic agreement that changed a paradigm from decades of litigation to an era of collaboration.

During Mr. Wright's tenure, BPA has moved forward on several transmission projects that will bring more renewable resources, particularly wind power, to the region and at the same time provide greater reliability. Wind on BPA's system has grown from 25 megawatts in 1998 to more than 2,200 MW in 2009. Under Mr. Wright's direction, BPA is working with the region to integrate as much as 6,000 megawatts of wind energy into the regional grid by 2013.

He has worked to ensure transparency by opening up BPA's financial and decision-making processes to public review and introduced internal efficiencies that have saved ratepayers tens of millions of dollars.

In acknowledgement of these and other achievements, Mr. Wright received a Presidential Executive Rank Award in 2008 for sustained and exceptional performance and leadership. In announcing the award, Jeff Kupfer, then Deputy Secretary for the Department of Energy, noted that Mr. Wright's ability to bring people together has played a key role in BPA's success in meeting challenges. "Mr. Wright has focused on building collaborative relationships with the agency's stakeholders," he said, "Under his leadership BPA has enhanced stakeholder confidence and increased financial transparency and accountability."

Mr. Wright began his work at BPA in the agency's energy conservation office in 1981, shortly after receiving his masters in public affairs from the University of Oregon. He moved to BPA's Washington, D.C., office in 1984. In 1987, he began managing the agency's California office, then returned to the D.C. office as manager in 1990. In 1998, he returned to BPA headquarters in Portland as Corporate Senior Vice President where he had responsibility for environment, fish and wildlife; finance and budget; strategic planning; human resources and public affairs. He became Deputy Administrator in 2000, followed shortly by his appointment as Acting Administrator.

He and his wife, Kathleen, and their three children live in Portland, Oregon. In addition to his masters, he holds a bachelor of arts degree in journalism from Central Michigan University.

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Oregon

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Washington

James A. Yost
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W. Bill Booth
Idaho



Bruce A. Measure
Vice-Chair
Montana

Henry Lorenzen
Oregon

Phil Rockefeller
Washington

January 15, 2013

Remarks by Bonneville Administrator Steve Wright
Council Meeting
Portland, Oregon

Wright: So thank you Mr. Chairman. You can tell that unfortunately my last opportunity before the Council I have apparently lost my voice. I'm not sick, I just somehow have a throat that doesn't want to comply with my desire to share with you some thoughts.

So a couple of things. I am down to my last two and a half weeks and I will tell you that there is a tendency at a moment like this to want to do a summation, to tell you that nothing but wonderful things have happened for the last 12 years and everything is in great shape, and there are no real problems left. And I will admit to submitting to a portion of that tendency at least, and tell you a little bit about some of the good things that have happened. But I have to admit that I'm probably even more concerned, and will spend the majority of my comments today talking about the unfinished business, the challenges that are left for the region to deal with.

So if I could I'm going to walk through a presentation here, and I hope this will work. Bad news. So in the good things that have happened over the last decade, the hardest set of issues that I had to deal with in my tenure was the west coast energy crisis, and the fact of the matter is that while there were bad people out there who took advantage of the situation, fundamentally we knew as a region, including from the Council plan from the late 1990s, that we had problems; that we had a supply and demand problem to deal with. The thing that I probably feel best about going through that was the fact that we recognized that, we decided that we would do something about it in terms of moving supply and demand the best that we could, we set a goal of 2400 megawatts of load reduction in that period, we hit a little over 2200 megawatts, and while at the end of that in June the FERC finally, and I will underscore finally, put in place price caps. The fact of the matter is that we were already seeing prices come down by that point and it was because we chose to work collaboratively as a region to increase supply and reduce demand. And when we choose to work together we can control our own destiny. That was probably my greatest learning from that experience.

You know what you would think a guy who had been in charge of electricity agency for 12 years could make something like this work, but apparently not.

I think one of our other great accomplishments has been the work in energy efficiency, and I give the Council tremendous credit for the energy plans that have been adopted over the years, and in addition to that when we recognized a few years ago that the Council plan was likely going to increase the amount of energy efficiency that was cost effective for the region, the work that we did collaboratively in the Northwest Energy Efficiency Task Force to begin to prepare the region for the actions that would be necessary has led us to a place where in fact it is the resource of choice. I give the Council great credit for the plans that have led us here to the recognition that the resource that is the lowest cost, both from an economic and environmental perspective, is the alternative of choice going forward. I'm really pleased with the fact that regionally this isn't just Bonneville and public power, but regionally we've been very successful at accomplishing targets and in fact even exceeding the targets. We start with a low-cost, reliable, clean system. This is the key to maintaining that as we go forward.

We made the Treasury payment, 29 straight years now it kind of is something that people don't spend much time thinking about or talking about, it is a damned big deal. That's all I can say. This is a really critical piece of maintaining the value of these assets for the region. Over the course of the last 20 years, in 1992 Bonneville adopted a policy to have a 95 percent probability of making its Treasury payment across a two-year period. It was in 2006 when we finally actually implemented that. It is an integral piece of the initial rate proposal that is on the streets today. I hope it will be common wisdom that that is the best way to manage the system going forward.

We started the turn of the century with about 3 1/4 billion dollars of access to capital. This is a hugely capital-intensive business and it is increasingly so because it is an aging business. Remember Bonneville was completed in 1937, and Grand Coulee in 1942. It is a system that needs capital in order to be able to maintain the value and to expand the value. In 2003 we got a \$700 million increase from the Congress and of course in 2009 we got another 3 1/4 billion. In addition to that we've put in place at least financial program that will produce roughly a billion dollars of access to capital, and just last month we signed pre-paid agreements with our customers that were worth about \$350 million and opened the door to additional opportunities for access to capital. This is the key piece that will determine whether we maintain and enhance the value in terms of just management of the assets. So we started the turn of the century with 3 and 1/4 billion and we end it with over \$8 billion of access to capital with the opportunity to expand that further. That could not have happened without broad support across the region, including the Council. For every one of those efforts we made to try to find ways to be able to make sure that we could have the money we needed in order to be able to retain and enhance this value.

The residential exchange has been a big fight for over 30 years, and we are close to being out of the federal courthouse. We are not quite there yet, but we have a very broad agreement among a large swath of Bonneville customers, all the investor-owned utilities, the vast majority of the public utilities and most recently, with the contract that we signed with Alcoa in December, they've exited that litigation as well. It would be really good to resolve this issue and stop fighting about the allocation of costs and focus instead on how we expand the pie. When we argue about the allocation, excuse me, I said allocation of costs, I meant allocation of benefits. When we argue about the allocation of benefits, we reserve less time for expanding the size of the pie.

We have a salmon plan and again, we've worked very closely with the Council on this and feel very good about the fact that we have a salmon plan supported by three states and seven tribes and it is important to point out that that plan adopted in 2008 as of this spring, we will be halfway through the implementation of that plan. I would say that one thing is certain, a lot of really good things have happened under the adoption of this plan. We have tremendous amount of work going on in the tributaries, in the estuaries, and we are now able to see the results from the work that has gone on in the mainstem Snake and Columbia River systems, and it appears that we are very close to hitting the performance standards at at least seven of the eight mainstem dams at the point. That's amazing. When we started at the turn of the century, I will honestly tell you that I remember Bob Lohn as the NOAA regional director coming to me and saying we have this cool new technology, removable spillway weirs, we want to spend a half billion to a billion dollars implementing it, and we will get improved survival, and we will do it with less spill. And I thought that's too good to be true. And in fact that is what has happened, is that we have implemented that technology and again, it appears to be working.

That's just a quick summary of what's gone on in the river.

I feel good about the transparency. The Council has pushed us with respect to transparency and I think we've made some substantial progress. The new contracts that we put in place essentially are a bargain between Bonneville and the preference customers with respect to their commitment that they will pay our rate, no matter what it will be, in return for a commitment that it will be a cost-based rate. And they had some leeryness about that because the issue was what cost might Bonneville incur and how will we know, and will we find out at rate time what our rates are going to be and there's nothing we can do about it? So we've worked hard to try to make sure that we're providing information about what our costs are going to be before those costs are incurred. That process from what I can see appears to be working.

We've added a tremendous amount of wind. Go back to the last Council plan and it suggested that there was tremendous opportunities for wind development in the region. It certainly has been the will of the region in terms of renewable portfolio standards adopted by three of the four Northwest states and as a result of that, we have a huge amount of wind on the system and we had to deal with wind integration. We didn't really understand how this was going to work when it started and we learned over the course of the last five years. The Wind Integration Steering Committee I think has done a remarkable job of pulling people together, regulators, utilities, environmentalists, and the wind community, to talk about how we address these wind integration issues. While we do have a very difficult debate going on about over-supply currently, it is important to recognize that that's a debate about roughly on average about \$12 million a year. On the other hand, we're collecting about \$50 to \$60 million a year in wind integration costs on the Bonneville system today that wasn't being collected before 2008, and it reflects the fact that we were able to resolve a whole host of very difficult issues in a relatively amicable way.

And of course we have the long-term contracts in place. And I think of all the things that have happened in my tenure, this is the most important. These are remarkable assets that produce tremendous value and the question is where would that value go and as it stands today, these contracts good through 2027 come as close as we know how to assuring that the power from this system will be sold at a cost-based rate into the Northwest.

Okay, so that is the summary of where we've been. Now let's talk a little bit about challenges going forward. Things that I worry about for my successor and all of you as you will struggle through the next few years with some big issues. A big one is the tension between FERC's responsibilities at the national level and Bonneville's responsibilities at the regional level. There are issues underlying this that tend to cause this to come to the forefront that many times when they are discussed in the press they look like the big issue; oversupply being the big issue right now. To be honest that's not my biggest concern. My concern is an email that I got in June and that was for years we have sought to resolve issues within the region. We would do that in a variety of ways. We'd do it in formal ways through technical workshops; we would do it through informal ways of people getting together and talking with each other. And one of the key forums for that have been our rate cases and technical workshops that are conducted there. And in June I got an email from our folks that says so today at one of our technical workshops, all the parties showed up but they didn't bring their policy people, they brought their lawyers. And it was essentially stated by all the parties, so there is no one party that I'm complaining about here; it was across the board. They said you know there are elements of this issue which we have taken positions on in FERC filings that we have made. And as a result of that we are not prepared to discuss this issue because it might compromise the position we've taken at FERC. Even just having a conversation about this might cause us to compromise our position because that might be filed with the Commission that someone had taken a position contrary to their filed position. I will tell you that is completely different from the way this system has been managed for 75 years. We have always said we are going to try to resolve our problems here first before we go someplace else, and we've put a lot of effort into that. There are a number of folks around this room who have worked with the congressional delegation and others over the years, and I've spent probably close to 25 years either in the room with members or going with other administrators as members and there are many times that members have said to Bonneville, "You know what, that's a big problem. Go work it out." It becomes difficult to do that if people won't participate in the processes, and they are waiting for a judgment to come out of the FERC. This is the issue I worry about the most. We should try to solve our problems here.

As we go forward, a significant enhancement in our system has been the fact that beginning in the mid-90s we began to make more off of secondary revenues our sales of surplus power, and this graph obviously shows a lot of ups and downs, a huge down in 2001 in the middle of the energy crisis, but roughly for that period from the mid-90s through about 2008, 2009 or so, we made \$400 to \$500 million a year in secondary revenue. And secondary revenue is basically money that is used as a credit against our firm power rates. Since that point you can see the last couple of years we've made more like \$300 to \$350 million, and our forecast for the next couple of years is in that same range. That is due to natural gas prices primarily, but also to some extent the competition that comes from a bad economy and therefore there are more surpluses in the market; and more wind power that has been available out there.

That drop off in revenue has a direct and real impact on rates, and there are lots of folks who want us to spend money on things, candidly. And the balance that any administrator struggles with is how much can we spend on good things to do versus how high are the rates going to be. The roughly 9% rate increase that we've proposed currently, about 8% of that is due to the drop in secondary revenues. This is the single biggest driver of what our rates will be in the next rate period. The big question I think is where will this go in the future. Is it going to stay down at this relatively low level or might it go even lower, or will it revert and go back up to the levels that we had seen before. I will tell you at different points I thought well gas prices are cyclical

and they will just come back up. I'm less sanguine about that having watched the amount of natural gas supply that has come into the market over the last year or two.

Wind power is obviously a huge issue. We started with three principles: encouraging renewable resource development, maintaining reliability, and cost-follow-cost causation. I think it pretty clear we've been reasonably successful at the first one; I feel like we've been successful so far with respect to maintaining reliability, there are a few challenges out there going forward; but in general we've been able to make this work. Cost-follow-cost causation is the food fight that we have in the region about who pays for this, and unfortunately those issues are not resolved and there will continue to be some big challenges there.

Associated with that are the issues associated with how we operate our transmission system, and this gets back to the question with respect to FERC's role versus Bonneville's. We initiated a completely different program for how we offer transmission service than is done in the rest of the country through the network open season process. It has been wildly successful; it has been so successful that actually we've reached a point where we've got more supply coming in than we need and over the course of the last year we've had people coming to us and asking if they can give back transmission contracts that they had signed. And that has created issues with respect to the credit worthiness of those parties, and the whole host of questions about that and there are some changes that will need to be made going forward to reflect our experience over the course of the last year.

There are also some issues associated with whether we operate under a tariff that is the same as those in the rest of the country or whether we develop one unique to the Northwest in addressing Northwest needs. This is an issue that is pending before the FERC right now and I would expect a decision probably within the next six months or so.

We have some big transmission construction projects we're working on. We're very pleased with the fact that we got John Day McNary built ahead of schedule and under budget, finished last year. The Big Eddy Knight project is under construction today. That in and of itself allows more than 3,000 megawatts of wind onto the system. And we have a very, very important project which has mostly gotten attention in southwest Washington. The I-5 project that we concluded on a preferred alternative in a draft EIS just before Christmas. I want to point out that that project is really critical to service, providing reliable service to the Portland and the Vancouver areas, through this whole area. We need to get this project built. From everything we can see, we have not built transmission in this area for more than 40 years. If we are going to maintain reliable service into this community we need to be successful in getting this project built.

There is a huge change which I think you're quite familiar with going on but I like to highlight it anyway because I think it's so remarkable in terms of my 30-year career to see this change happening. We have always been a capacity surplus energy deficit region, and with the tremendous expansion of variable energy resources on this system, mostly recently in the last five or six years, we are changing to a energy surplus capacity deficit region and it changes our whole way of thinking about resource acquisition. These graphs basically show PNUCC forecasts of the energy surplus for the region and you can see in 2008 versus 2010 versus 2012 that we've gradually moved to a more surplus system. We tried to go back and look at capacity deficits and maybe you have better information than I have available to me, but I am told at least

that it's very difficult to even find a good capacity surplus deficit analysis before 2012 because we all believed that we were surplus, and so we just didn't spend very much time looking at it. This particular graphic that shows a huge capacity deficit really should be thought of in terms of we really at this point don't even know how to calculate capacity surpluses and deficits in this region because we know it is a problem that we're engaging with; we have lots of different ways of calculating capacity. The hydro system in this region completely changes the way of doing this analysis from what it has done in other parts of the country because you have all these turbines that sit unloaded most of the time, and you are limited by fuel, and the question is how much water do you have and how long do you have it available. But the one thing that is clear is that we have a much bigger capacity problem than we have had historically.

So we do feel good about the work that we're doing with respect to salmon and steelhead, but we also know we have a new Biological Opinion due roughly a year from today, and on top of that we are now halfway through the implementation of this plan, which means we need to be thinking about post-2018. NOAA Fisheries has been doing some work talking about recovery planning in the region over the course of the last couple of months. I am personally supportive of that; I think it's a good idea to begin thinking about this because I think the recovery planning efforts that we've undertaken in this region in the past have had difficulty being brought to conclusion. The idea of having a conversation about all the sources of mortality in the system for salmon and steelhead feels to me like the right thing to do and it should be in the context of where are we going for post-2018.

There are lots of threats to the system. There is one huge opportunity and it resides in the Columbia River Treaty. The treaty is a fantastic model of international cooperation. People come from around the world to see how it is that we manage an international river the way that we do with as little conflict as we have. Honestly, most folks who are heavily engaged in the electricity business know very little about treaty implementation because there is a cadre of folks on the Canadian side and the U.S. side that have managed this for a long time and done it so successfully that it hasn't required very much attention. We now reach this point though under the treaty where there is the opportunity to revisit it. The treaty basically was built around the idea of the dams being amortized by 2024 and that at that point either country could unilaterally terminate with ten years' notice, and so 2014 becomes a critical date. We know that flood control was only paid for through 2024 and we know that there is a flood control benefit associated with the Canadian facilities. We have to figure out how to address that, although I would also say in other parts of the country we help pay for flood control on the Mississippi and the Ohio and the Tennessee, and so there is an appropriate sharing of that cost with the nation's taxpayers. There is also the issue of the ecosystem. We know that ecosystem was not addressed in 1964; there was not NEPA. There was no Endangered Species Act and we need to rebalance in terms of the operation of the treaty to take into account the ecosystem responsibilities. But fundamentally we also know that with respect to the entitlement return that if one looks at the benefits of coordinated operations of this system, we are paying too much. The 1300 megawatts of incredibly flexibly capacity and 500 megawatts of energy that we provide in that post-2020 overpays relative to coordination benefits that we are receiving. And hence one has to think about this in terms of where is their value. Candidly, one of the things that a Bonneville administrator and you are frequently confronted with is lots of people who want to spend money on things, and the challenge is where will the money come from. In this particular case, there is an opportunity here to expand the size of the pie. We need to figure out how to do that. If we do not unite as a region to come to a conclusion, there probably will not be a change to the treaty.

And that would be unfortunate. A natural outgrowth of the issue of the capacity energy graphs that I showed before is we've acquired a lot of energy efficiency and been very successful at it over the course of the last 30 years with a ramp up particularly in the last few years. If we are becoming a capacity deficit system, it is important to recognize that changes the way we think about energy efficiency and demand response. The fundamental thing that has made energy efficiency work was that it was a business proposition. That it was about doing the right thing for the economy and the environment, and that's what I think was the gem inside the Northwest Power Act, and has been the gem inside the Power Council plans. If the needs of the power system are changing, then our response to that in terms of resource acquisition needs to change as well, and we need to think about our acquisition programs quite differently. This will be a key issue for you to deal with in the next power plan.

I want to finish with a couple of thoughts. Some of you may remember Steve Hickok, he was a long-time Bonneville executive, a devout Catholic, he used the term "eternal verities" quite frequently. Although I was raised Catholic I have to admit I had to go look it up. It basically means enduring truths and I would say there are a couple of enduring truths here. The first is this is a system that provides huge value to the Northwest and the key to that is the fact that Bonneville is kind of a weird creature; we're a regional creature under our federal/state constitution. We don't fit very naturally anyplace. The fact of the matter is that we have succeeded when we have succeeded because of bipartisanship. When this region is able to come together in a bipartisan way, we do well. And I would say I and my predecessors have been beneficiaries of tremendous bipartisanship; bipartisanship in the Congressional delegation, bipartisanship by the Council. I urge you to maintain that because I think when we fight amongst ourselves we create the greatest risk to the value of the system.

I want to finish with this thought about the value of the system. This is an unbelievably valuable system. We are lucky to live here. This system is the envy of the rest of the world. It is the envy of the rest of the world in two ways: it creates environmental advantage and it creates economic advantage. It creates environmental advantage in terms of its lack of air emissions. So in terms of CO2 emissions, hopefully you've seen this before, the Northwest as a whole has CO2 emissions of approximately one-third the national average and way below the industrial Midwest. That translates of course into economic advantage in the longer-term as well because the rest of the country is going to deal with climate change and it's going to deal with it in terms of mitigation costs and we face lower mitigation costs with respect to CO2 emissions than other parts of the country or other parts of the world for the most part. It also comes in the form of if there wasn't a federal hydro system, there would be roughly 15 more coal plants in this region. Think about the debates that we'd be having around this table right now if there were 15 more coal plants, and what costs we'd be looking at to deal with SOx and NOx, mercury, haze, all of the things that the rest of the country is having to deal with. So that's a huge advantage and on top of that it is a system that produces power at under \$10 a megawatt hour and even if you include the fish and wildlife costs, roughly \$15 a megawatt hour, and at that place it's the only resource out there that beats energy efficiency in terms of its low-cost structure. And it is substantially below the other resources that are out there, it doesn't matter what we're talking about, gas, coal, wind, solar; this is one of the few economic advantages that this region has.

So the thoughts that I will leave with you are that when asked the question what thought would I leave for the administrator as their most important job. The number one, the critical most important job and I would argue it's not just for the administrator; it is for this Council as well, is

to preserve and enhance the value of the hydro system. If there was no hydro system all of the debates that we have about spending money and all these various things would not happen. There would be no source of revenue. If you didn't have this low-cost hydro system, let's be candid about it, there wouldn't be a Northwest Power and Conservation Council. It exists because of the fact that you have the system. So the number one, most important thing that we do as a region and as a group between Bonneville and the Council is maintain and enhance the value of that system, so you can have the arguments about how we'll distribute the value from that system. Without that value there are no arguments to be had.

I want to finish with this last thought and that is what a pleasure it has been to work with the Council over the years. I have been a huge fan and supporter of the Council going all the way back to my early days at Bonneville when we worked together on the first conservation supply curves back in 1982. I really believe that the Council brings value to the region; I think the power plan has been a very helpful document in terms of laying out a vision for where the region should go. The Council is not a regulator but that doesn't mean that it doesn't have influence. It has huge influence. It has had influence with me and with my predecessors and I would expect that it will have influence with my successors. It also has been wonderful to work together. The work that we did together during the energy crisis I am particularly grateful for. I have to say it was a very, very difficult time to get through and we did really well, and that built a foundation for all those things that I talked about that we've succeeded at in the last 12 years. Without the collaborative work with the Council there would be things up there that wouldn't be on that screen, and I am tremendously grateful for that.

Thank you.

Karier: Thanks, Steve, that was really a great presentation and I think it's a great summary of the accomplishments that we've seen over the years that you've had a hand in and I think a good blueprint of problems to deal with in the future. Our tenures have kind of overlapped while I've been on the Council and you've been Administrator, and I also want to say that it has a great period of time of collaboration between the Council and Bonneville. We have worked together on a lot of different issues from the energy crisis through adequacy, wind integration forum, energy efficiency, and I think it has been a great collaboration that the whole region has benefitted from. One other comment before I ask a question. The comment is that you talk about the future challenges of capacity and adequacy for capacity. I think that's an area that may be moving into the accomplishments category, that Bonneville and the Council have worked very closely on the adequacy form in the Northwest and we've developed a good forecasting model and some pretty good new measures of capacity needs and requirements, some of which we're going to be talking about later in our meeting tomorrow, but some pretty good assessments, and while we had those warnings in 2000, we only had them about six months before the energy crisis hit. Now we're looking five and seven and eight years out and we're starting to see some concerns in that period of time. Hopefully we've learned and we've refined some of those.

The question I have though is of all of these issues and concerns you see going forward, where do you think the Council could provide the best value to the region in just going forward with these issues?

Wright: A quick comment on resource adequacy. I agree with you that there has been tremendous progress made by this joint task force or working group that has worked on this resource adequacy issue. I will admit though that I still worry some that we're struggling with a bit about how to understand capacity and I think there are lots of definitions of capacity, and we're ultimately going to find that capacity is like snow to Eskimos, that you need a lot of different definitions in order to be able to understand it and so we have progress still to make there. I would like to share with you this one thought that is maybe another one of my great learnings from the energy crisis which is it is better to be long than to be short. We struggle a lot with trying to keep the cost as low as possible, you know trying to match supply and demand, but if you are going to be wrong on one side or the other of that equation, those small amounts of money that we saved in all those years leading up to the energy crisis were dwarfed by the cost that we experienced in 2001. I would just urge people to think about it is better to be a little, if you are going to be wrong on one side or the other, be wrong on the long side.

With respect to the Council going forward, I think from my perspective the piece that has been most important really has been the power plan. It may be difficult to see how a vision like that translates into action on the ground particularly with respect to not being a regulatory body and wondering whether people are following it or not. But I believe that vision has permeated the industry and there are substantial actions being taken in response to the plan and being really careful and thoughtful about how this system is changing as we add variable energy resources, and the consequences of that for resource acquisition. Because ultimately the big cost in a consumer's bill are the costs of power supply and so getting that part right is really in my view the most important piece.

I think the second piece really is if we are headed towards a period in which we are going to be thinking about recovery in post-2018 we are going to have to think about how we create forums to be able to bring a large group people, and it will be a really large group of people because if we talk about all sources of mortality this is a bigger conversation than has ever happened before. How we will create a meaningful conversation around that will be critical, and I think the Council plays an important role in helping to think that through as representatives of the four states. I would urge you to think about how you're going to think about your fish and wildlife program in that kind of context; how will we put that together in a way that creates value for the federal agencies that are struggling with how do we address the recovery question.

End of Wright's remarks