

Transcript Prepared by Clerk of the Legislature Transcribers Office  
Natural Resources Committee October 29, 2021  
Rough Draft

**BOSTELMAN:** If you could take your seats, we'll get started here. Thank you, everyone, welcome to the Natural Resources Committee. I am Senator Bruce Bostelman from Brainard, and I represent the Legislative District 23. And I serve as the Chair of this committee. We're going to hear testimony today on LR136, which was introduced by Senator Brewer, cosponsored by Senator Clements, Erdman, Gregory-- Gragert and Halloran. The purpose of this interim study is to examine, understand and evaluate the causes, impacts and costs of rolling electrical power outages during the extreme weather events of February, 2021. The study shall also identify and evaluate the differing effects, if any, of public power district membership in the Southwest Power Pool, and the costs and benefits of SPP memberships. The testimony received today will be through invited testifiers only, as noted at the door. We do have that list on the door, correct? OK, as noted at the door. And I ask that you abide by the following procedures to better facilitate today's proceedings. Please silence or turn off your cell phones; and I will ask each testifier to come up, give their prepared testimony based on their questions asked of them beforehand. For committee members, if you go into your book binder behind the last thing, under LR136 are the questions that they'll be talking to. Once they are done, the senators will be given a chance to ask questions. When you come to the, to testify, please clearly, speak clearly into the microphone. Tell us your name and please spell your first and last name to ensure we get an accurate record. Senator Brewer is joining us on the committee today as the sponsor of the LR. The committee members with us today will introduce themselves, starting on my left with Senator Wayne.

**WAYNE:** Senator Justin Wayne, District 13, which is north Omaha, northeast Douglas County.

**J. CAVANAUGH:** John Cavanaugh, District 9, which is midtown Omaha.

**MOSER:** Mike Moser, District 22, which is Platte County and a little bit of Stanton County.

**BOSTELMAN:** And on my right, Senator Brewer.

**BREWER:** Tom Brewer, representing 43rd Legislative District, and the Chair of the Government Committee.

**HUGHES:** Dan Hughes, District 44, 10 counties in southwest Nebraska.

**GROENE:** Senator Groene, District 42.

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**AGUILAR:** Ray Aguilar, District 35, most of Grand Island.

**BOSTELMAN:** And to my right is committee legal counsel Cyndi Lamm. And to my far left is committee, committee clerk Katie Bohlmeier. Our page today for the committee is Savana Brakeman, and thank you very much for being here today. I will say as you come up to the microphone to testify, if you have a mask on, please, if you're comfortable with that, you may remove it. It's easier for us to hear in that sense. With that, I would ask our first testifier to come up, and that is Mr. Lanny Nickel for SPP, executive VP and COO. Good afternoon and welcome.

**LANNY NICKEL:** Good afternoon. Thank you. Chair Bostelman and members of the Natural Resources Committee, I thank you again for the opportunity to be here. I know we were here back in March, and very much enjoyed the engagement and the questions that you guys asked. A lot of really good questions, and I appreciate that. I know this is an important topic. It's a topic that's been discussed throughout our region and in all parts of the country, and I'm happy to entertain any questions that you might have upon completion of my opening remarks. I'm Lanny Nickel, I'm the chief operating officer for Southwest Power Pool. We are responsible for working together with our community. And that in and of itself is important. I want to make sure that's recognized, working together in a community. It's a concept that is often undervalued, but through community we're stronger. And what we're doing in that community is to assure affordable and reliable delivery of wholesale electric power across our 14-state region. So today I plan to summarize our efforts to comprehensively review the operational, functional, communications and other aspects of the actions that we've taken in the SPP region during the winter event Uri. This comprehensive review relied heavily on input from our stakeholders, including significant engagement from our regulators and members in Nebraska. I will share our key findings, our recommended improvements and current expectations for effectuation of those improvements. Now I will cover them in my opening remarks at a high level. Again, we can go into a lot more detail later, if you wish. Let me begin with the findings. We identified seven key findings. First and foremost, the unavailability of generation was the largest contributing factor to the severity of the winter weather event's impacts. Lack of fuel was the largest reason for that generation unavailability, and it affected gas generation the most. Second, extremely high natural gas prices were the primary driver of record-high wholesale energy offers in our market. Third, the rapid spike in SPP's market prices drove concerns about liquidity of market

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participants, and it created an exponential increase in short-term credit exposure. Fourth, our relationships and our interconnections with neighboring systems. We benefit from being in a larger community were critical and allowed us to rely on imported energy to serve as much as 14 percent of our load. I'm gonna draw a comparison to ERCOT's experience in, in Texas. They were only able to rely on as much, no more than 1.5 percent of their load being served by imported energy, 14 percent compared to 1.5 percent. To me, that's a remarkable demonstration of the benefit of being part of a larger, more interconnected community. Fifth, the SPP transmission system was highly congested at times during the event, with limitations that prevented full use of generation available in certain locations. Not a large amount. It certainly wasn't the primary driver of the event, but there were certainly some areas of congestion that caused us to have to reduce generation in certain locations. Sixth, early preparation, timely decisions and effective communication and coordination with our utilities and our neighboring systems helped minimize the winter storm's impact on reliability, and our load shed actions mitigated the risk of uncontrolled cascading blackouts, which would have been much more severe, would have lasted much longer and, and could have impacted a much larger part of our community. Our seventh and final finding was that SPP stakeholders indicated general satisfaction with our emergency communications during the winter storm, although some areas of improvement were identified, particularly in those related to end-use customer awareness. During the review, we evaluated hundreds of potential suggested improvements. Our stakeholders were very engaged in that process and met numerous times over about a three-month period to try to finalize those recommendations. Ultimately, we recommended and the board approved 22 high-level recommendations intended to mitigate the possibility of having to experience this kind of event again. Or at a minimum, to improve our response if we do. We know we can't control the weather and there can be disastrous impacts depending on just how severe the conditions are. We think we can mitigate that, that risk. We can't guarantee that we won't ever see this again. And if we do, we want to make sure that our response is top notch and above reproach. Work is now underway to implement each of these recommended improvements, and SPP staff is expected to provide quarterly updates to our board of directors. Of the 22 recommendations, 4 were identified as critical and urgent because they addressed the primary causes of our need to shed load. Those four require SPP to develop policies that enhance fuel assurance needed to improve generation availability, to evaluate and advocate for improvements in gas industry policies. We don't

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control the gas industry, we don't have any authority over them. But at a minimum, we can advocate. We can inform decisionmakers who do. The third one is to perform assessments of minimum reliability attributes needed from SPP's resource mix. And then finally to improve and develop policies that ensure sufficient resources will be available both during normal and extreme conditions. The board directed work to begin immediately on the four recommendations I just described. Work has begun with the rapid formation of a new task force, which consists of an equal number of regulators and members, including a representative from Nebraska who's in this room today. That task force has scoped 26 initiatives intended to address the recommendations and expects these initiatives to be completed by the end of 2023. The remaining 18 recommendations, I'm happy to cover those in more detail. They deal with a lot of other improvements that aren't quite as important or as urgent, but they're all, they all matter, and they'll all help us respond better if we ever have to do this again. Several of those recommendations, the work has already begun. And in fact, those related to corporate communications improvements, we've actually made a lot of progress and we've already implemented some of those. I'm proud of how well we dealt with the winter event and limited our service interruptions and the risk of an even worse event, given just how severe this winter was. Our situation could have been much worse, and we only have to look to the south to see just how bad it could have been. Our success only happened because of the strength that we have in our community. I'm proud of how serious I know our organization is treating the response, and I expect to continue to be proud as we develop solutions that will allow us to continue to keep the lights on in a responsible and affordable way in the future. Thanks again for the opportunity, and I'm happy to answer any questions that you might have.

**BOSTELMAN:** Thank you. Thank you again for being here today. We appreciate that. I would open it up for questions from the committee members. Senator Groene.

**GROENE:** You say imports, 14 percent, was that between members or be outside the membership?

**LANNY NICKEL:** Outside of SPP. So we, for example, we have interconnections with several utilities to the east, and we were receiving energy from as far away as New Jersey, the east coast. And that was being delivered through the intervening transmission systems to get to our board.

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**GROENE:** And why wasn't Texas' ERCOT or whatever able to-- they have management, why couldn't they create agreements with other [INAUDIBLE]?

**LANNY NICKEL:** They are limited by really two interconnections with SPP, and those are DC-Ties. Those would allow them to import up to 820 megawatts from SPP.

**GROENE:** Because of their infrastructure?

**LANNY NICKEL:** Or through SPP. It's because of the, they, they just don't have enough interconnection capability with the rest of the world. They also have, they have 300 megawatt--

**GROENE:** They have agreements, they just don't have the infrastructure to get it?

**LANNY NICKEL:** That's right.

**GROENE:** All right.

**LANNY NICKEL:** Yeah, they just don't have the infrastructure. We were importing, I said, 14 percent of our load. That's about 6,000 megawatts. They can at max import 800 megawatts.

**GROENE:** I don't want to take a lot of time. So a lot of clarity. You implied that the over-- high price of natural gas had something to do with the shortages. Are you implying they, you shut down facilities instead of refusing to pay the price or what?

**LANNY NICKEL:** No, no my--

**GROENE:** It doesn't seem to have any influence at all about the shortage at that time.

**LANNY NICKEL:** So the unavailability of gas is what affected largely our unavailability of generation.

**GROENE:** Not the price.

**LANNY NICKEL:** Not the price.

**GROENE:** All right, and do you take any responsibility in the bigger picture that because of the electrical industry's overreliance on natural gas has now caused people that heat their homes with natural gas to have unbelievably price increases next year? [INAUDIBLE].

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**LANNY NICKEL:** I wish I could take responsibility for that. I would love to be able to fix that problem.

**GROENE:** Coal would have not caused that?

**LANNY NICKEL:** No.

**GROENE:** All right, thank you.

**LANNY NICKEL:** No, it's, again, it's a matter of jurisdiction.

**BOSTELMAN:** Other questions? Senator Brewer.

**BREWER:** All right, you're in a unique position because you're not a Nebraskan. So we can't, you know, flail you here like we can others.

**LANNY NICKEL:** And I appreciate that very much.

**BREWER:** You have that advantage here. Our--

**LANNY NICKEL:** Thank you, Senator.

**BREWER:** --our, our problem is that our phones rang off the hook with an expectation that we could fix what people were enduring during this period. I understand that there are things that happened that were far beyond anyone's dreams that could possibly go wrong in any sequence. But it did. And I think the concern that many here have is, is how do we keep that from happening again? And you talked about the, the hundred improvements, and you narrowed it to 22 recommendations. Now those 22 recommendations, I assume those are readily accessible through--

**LANNY NICKEL:** Yes, sir.

**BREWER:** OK, well, we'll be very interested in them. And you know, we've got an old saying in the army that, that hope is, is a poor course of action. And you know, the intent here is that if Nebraska has the ability to generate and the ability to transmit, have the transmission of, of what we need for power and that it's a reliable and it's affordable, and then we become part of something bigger and the bigger fails and we have to shut down assets here to help others and yet, you know, I've got people calling saying, listen, you know, for my power's out, I've got lambs on the ground and they're going to die if we don't do something. And I said, there's nothing we can do. This is just a bad situation and, and there's no easy answer. Part of

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what hopefully comes out of today is that we find some answers on how are we going to fix that in the future and keep it from happening because they're going to come under a lot more scrutiny if this happens again, and it's obvious that Nebraska can produce enough power to take care of Nebraska. But yet, because of this regional crisis, we're shipped in a way leaving folks here without power. How would you kind of respond to that general concept of how we're thinking?

**LANNY NICKEL:** Well, Senator, you you hit a lot of really important points. And the first one I would address is we cannot afford to see another event like this happen again from a credibility perspective. Having said that, I think it's also important to recognize that what we did was very responsible and proactive and prevented the situation from possibly being disastrous. I point back to the 2003 blackout that affected more load than we currently serve in our 14-state region today. And that happened because they didn't proactively take steps to address a rapidly deteriorating situation and it got out of control. We at least proactively took steps to address the situation and prevented that from happening. Now, having said that, your point about Nebraska helping the rest of the states out, it's important to understand that this year's winter event won't repeat itself in exactly the same fashion. The next extreme event may not be a winter event. It could be a hydro, a low hydro or a drought or a really hot summer. I heard of temperatures in Canada this summer in 120 degrees. They don't expect that in Canada. You don't expect that in Nebraska. But if it happens, where are you going to get your power from? Because I can tell you your energy consumption, if you had that kind of temperature, would be more than your state could produce. Particularly if you have outages. And so it's just, I'm trying to impress upon all of you the importance of being part of a larger community because of the resilience that is increased by virtue of participating in the larger community. And there's a lot of value in that. And we saw it even, even because of the fact that we are part of the Eastern Interconnection and aren't isolated as much as Texas is, because they're not part of the Eastern Interconnection. We had access to hundreds of thousands of megawatts of generation east and north of us. And we had just enough transmission that we could import 6,000 megawatts worth of it. And that prevented us from having to curtail service with the exception of four hours across two days. Four hours across two days, the maximum interruption that we had to proactively perform was about 6.5 percent of our demand at the time. That's, again, I don't, don't get me wrong, none of us enjoys curtailing load. We, it's a last resort. I never thought and never dreamed of that

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happening in my career and don't want to see it happen again. And I tell you, none of these people here today want to see it happen again, either. None of you do. None of you want to have to answer those questions. So we're going to do everything we can. We're going to put as many precautions as we can in place. We're going to increase our resource adequacy and availability as much as we can, recognizing we got to do it affordably. There's only so much insurance any one of us are willing to buy. So there is an affordability aspect of that. But we don't want it to happen again, and we're going to do everything we can within reasons and limits of affordability to prevent it.

**BREWER:** And how much of what happened can we contribute to, you know, the, the wind and solar that were pretty much ineffective during those periods? Because if we become too reliant, and I think here in Nebraska, we probably fear the winters more than the summers, even though we may get a spike in the heat, that's the wolf closest to the sled when it comes to this, this issue. This is, this is something we constantly go back and forth on. What's your opinion? Is it a factor? Did it contribute?

**LANNY NICKEL:** So if I'm understanding your question correctly, Senator, is whether or not wind and solar contributed to--

**BREWER:** Contributed to what happened in February.

**LANNY NICKEL:** So the way I will answer that is we already include certain assumptions in our models about the availability of wind during extreme conditions. And generally speaking, that's, when we say extreme in that regard, we're thinking about the hot summer day. You know, really dry heat. There's no wind. And so so we don't count on a lot of wind energy being produced by the 27,000 megawatts of wind generation in our footprint. We only assume that about 3,000 megawatts of that that's going to, to be produced. So from, from what we were expecting perspective, it really didn't impact us. Now would, if it had produced more energy than what we were expecting, then that would have been a bonus. But what really hurt us was the fact that for gas generation, we were expecting 30,000 megawatts to be available and only 12,000 megawatts produced. So it, I'm answering your question to say, basically by saying it depends on the expectation as opposed--

**BREWER:** You're doing a good job educating us on how it all works. So I appreciate that. So if we take a look, because you hear coal being, I guess, condemned and all. But in reality, coal played a pretty big factor in saving the day.



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**LANNY NICKEL:** It helped a lot. Now it produced about 17,000 megawatts. So clearly that was our largest contribution of energy in our footprint, was 17,000 megawatts from coal. And if you think about the fact that we were trying to serve as much as 47,000 megawatts, that was a fairly large piece of what we needed to supply energy. We expected, again, this goes back to the modeling and our assumptions, we expected about 23,000 megawatts. So it didn't perform as well as we would hope, but it performed better than gas. And so none of our resources, none of our fuel tops performed perfectly with the exception of, and I hate to say it, nuclear for some of you who are the nuclear advocates here. But we--

**BREWER:** [INAUDIBLE].

**LANNY NICKEL:** So we have, we have 2,000 megawatts of accredited nuclear capacity and 2,000 megawatts was produced. So it showed up. It showed up, as we expected. By the same token though, wind showed up exactly as we expected too, because we only expected 4,000 and we got 4,000.

**BREWER:** All right. Thank you.

**LANNY NICKEL:** You bet.

**BOSTELMAN:** Senator Moser.

**MOSER:** Just as kind of a background, the SPP is an association that utilities can belong to. They can sell their electricity through your system, they can buy electricity, or well, or energy. I guess it will all be electricity, wouldn't it?

**LANNY NICKEL:** Yes.

**MOSER:** Through your system. And the benefits of belonging to the association is if we have a problem locally, we can get power from somewhere else.

**LANNY NICKEL:** That's right.

**MOSER:** Somebody else has a problem, they can get power from us. This time, the biggest generator of stress was not necessarily Nebraska because we had power available, but the problems were south of us, correct?

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**LANNY NICKEL:** For the most part, and I would say that that was true of most of our northern states had excess power.

**MOSER:** OK. And does the, or did the extra infrastructure that we put in to serve the wind power industry affect our ability to transmit power throughout the system?

**LANNY NICKEL:** Yes, sir, it did in fact. We have, not entirely because of the rapid amount of growth in the wind, and I can tell you 10 years ago, we had about 6 percent of our energy mix coming from the wind generation. Now we have 31 percent. So a lot of growth in just 10 years. And to facilitate that, we have built and our members have built a lot of transmission in order to deliver the wind reliably to where the consumers need it. And that transmission serves multiple purposes. Not only does it facilitate reliable delivery of certain generating types such as wind, but it also helps out and provides a reliability value and a resilience value during these kind of events.

**MOSER:** I was wondering if maybe we spent money to serve these wind power generators and then we didn't have mainlines to transmit power throughout the system. You know, if we'd have spent more money on the larger system and less on connecting wind generators, would we have been better off?

**LANNY NICKEL:** You know, it's hard to say, Senator Moser. I think that's, that's got to be part of our planning processes going forward. One of the recommendations that we made related to transmission planning is that we need to better consider the reliability and resilience benefits that are provided when we boost the transmission for extreme events. We don't, the industry just generally doesn't do a good job. It's not just SPP, by the way, the industry generally just hasn't done a good job in the past of study in extreme scenarios. And the reason for that is because there's a belief and a perception that if you're building transmission for something that only happens once every 10 years, 15 years, 20 years depends on how often you think it's going to happen, then are we really investing in the right thing? But I think it's something we're going to have to start doing more of, not only in SPP, but across the industry, studying extreme scenarios. We have to agree on what the likelihood of those materializing would be, but then understanding the benefits that we get from having that kind of infrastructure in place.

**MOSER:** Are you going to change the percentages of, of reserve that your members are required to keep?

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**LANNY NICKEL:** To be determined. That is part of the-- one of the recommendations, as I mentioned earlier, is to improve our resource availability. And that's one of the recommendations that the task force is, is going to be grappling with and debating. The challenge is how do you do that and how do you do it in the best way? Do you simply just increase the percentage of planning reserve margin? Do you change the capacity accreditation policy such that certain types of generation don't get as much value?

**MOSER:** Or do you go out and check and make sure it's really there?

**LANNY NICKEL:** Do you do-- or do you get benefit to generators who have dual-fuel capability? How do you do that? And that's that's part of the debate that's happening, that's really beginning to happen right now.

**MOSER:** So how does the SPP fund itself? Does it charge a little markup on the electricity that it markets to and from its members?

**LANNY NICKEL:** No, we, we don't. Basically, the, in terms of the market prices, those market prices are established based on offers that are supplied to us from the generators that offer into the market. Our administrative costs are recovered from our customers, and our customers include our members, as well as those who participate in the services that we provide.

**MOSER:** But you're basically a nonprofit.

**LANNY NICKEL:** We are a nonprofit. Yes, sir.

**MOSER:** So there's no way you could be taken over by somebody and they make 5 percent on all your electricity sales?

**LANNY NICKEL:** I'd hate to say there's no way.

**MOSER:** That's a good thing.

**GROENE:** Question.

**BOSTELMAN:** Senator Hughes.

**HUGHES:** Thank you. Thank you for being here again.

**LANNY NICKEL:** You bet.

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**HUGHES:** You made the statement that the expectation for coal was 23, but they only produced 17.

**LANNY NICKEL:** 17.

**HUGHES:** So why was that? Was there scheduled outages or not ramping to capacity?

**LANNY NICKEL:** It's a great question. I'm going to have to give you a general answer because I don't remember all the statistics.

**HUGHES:** OK.

**LANNY NICKEL:** But some of it was scheduled out. I don't think it was--

**HUGHES:** But if you were, if you, if it was scheduled out, there wouldn't be that expectation that was available, correct?

**LANNY NICKEL:** Well, except that we set those expectations going into the winter season. And then if, if they take a generator offline because maintenance is needed, sometimes those decisions are made [INAUDIBLE].

**HUGHES:** So the expectations are made. I guess I was kind of thinking on a week-by-week basis--

**LANNY NICKEL:** No.

**HUGHES:** --but apparently that's not the case.

**LANNY NICKEL:** No, they're generally made the on a yearly basis, and they're determined based on availability of information that we have.

**HUGHES:** So I would assume that any generating facility does give you some sort of a maintenance schedule that, and I know they try to stagger and you have that information as well.

**LANNY NICKEL:** That's correct.

**HUGHES:** OK.

**LANNY NICKEL:** Yeah. And they're not allowed, by the way, they're not allowed to count on their generation as accredited capacity if they've scheduled it to be out of service for the entire season. Or if, for example, there's a lot of different criteria, but they have to have firm fuel--

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**HUGHES:** OK.

**LANNY NICKEL:** --in order to be abled to count [INAUDIBLE].

**HUGHES:** That does clear that up. So my real question, and you touched on it a little bit with Senator Moser, but from, from my experience and, you know, all of the power generators here in Nebraska have done a very good job of educating me. I'm still maybe like elementary school, but it seems to me that SPP's overriding-- and you can correct me if I've got this wrong-- overriding philosophy is we take the cheapest fuel available--

**LANNY NICKEL:** Yes, sir.

**HUGHES:** --on a daily basis.

**LANNY NICKEL:** Yes, sir.

**HUGHES:** Has--

**LANNY NICKEL:** Well, the cheapest energy.

**HUGHES:** Yes.

**LANNY NICKEL:** Yes.

**HUGHES:** So has the thought process begun of maybe that there should be a reliability factor included in that initial yes, we'll-- we're going to take the cheapest energy first, but there, there has to be, and this is me speaking, there has to be a reliability. Because from my perspective, reliability comes long before affordability in power. And this event highlighted that completely.

**LANNY NICKEL:** Yeah, you're absolutely right. And so you, you called me on an important part of our market design, and that is that we take the cheapest generation available to us that can be reliably delivered. So that, that reliably, that reliability aspect is considered as part of the logic. The reliability that we are looking at is from the perspective of protecting the transmission system. So in other words, we, we won't generate from a resource that would create an overloaded transmission facility. We, we just won't use-- even if it's the cheapest generation available, if it's going to cause a reliability problem on the grid, we can't use it. So we do take that into consideration.

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**HUGHES:** But is, has that consideration changed at all on giving a little more emphasis to the reliability factor in, in hindsight of looking at the winter event we experienced?

**LANNY NICKEL:** Well, I'll, I'll tell you what has changed, and that is from the perspective of the reliability aspects that certain types of generation can provide, we want to start paying more attention to that. For example, we know that certain types of generation can provide more stability. They provide voltage support and we need to start considering that, and maybe even finding ways to compensate for those types of generators that can provide the reliability attributes that we need. That will be part of the debate that's, that's going to be ongoing. You may be touching on an aspect that we saw during the event where we were also experiencing severe congestion throughout the footprint. And because of that, we had to back down certain generation in Nebraska and North Dakota and other parts of the northern part of the footprint. One of the things that is being considered in one of our recommendations is whether or not we should change our load shedding approach so that that's taken into consideration. And so that those entities who are already being redispatched don't have to curtail as much or any. So that is another, one of the recommendations is to reconsider how we approach the whole load shedding process in the region.

**HUGHES:** Right. Well, yeah, and that was a very good answer. But, yeah, we need to, we tend to focus on the lack of generation, but also the transmission is also as important--

**LANNY NICKEL:** It is--

**HUGHES:** --as generation.

**LANNY NICKEL:** Absolutely.

**HUGHES:** And sometimes we overlook that.

**LANNY NICKEL:** Yeah.

**HUGHES:** Thank you very much.

**BOSTELMAN:** So I'll follow up on that just a little bit on a question I had, and it does sell into this, and maybe you can-- and some of the things that we may ask today and for the other testifiers, we're going to reserve the right, obviously, to give you some written questions later. So if committee members over the next week have other questions

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you would like answered, please get those to Katie. We'll put those together, we'll send them to the appropriate testifier and we'll get that done. But what Senator Hughes talked about, my question went like to this was currently there are only production-based incentives in the industry and no financial incentives for liability. How does SPP plan to address that situation in the future?

**LANNY NICKEL:** Well, it will be addressed because it is one of the recommendations for consideration by the new task force.

**BOSTELMAN:** Thank you. To clarify the relationship between Nebraska power generators and SPP, when a generator or utility joins SPP, the utility maintains ownership of its generation facilities but SPP is given control of the facilities. That is what the generator can produce, we must cut-- what the generator can produce, when it must cut back, et cetera. And is that your, is that a correct understanding?

**LANNY NICKEL:** Yes, I believe so. Can I just rephrase it in my own words?

**BOSTELMAN:** Sure.

**LANNY NICKEL:** So when, when a utility joins SPP, the first thing that they're doing really is putting their transmission assets under our tariff to the extent they have transmission assets. Some of those utilities also own generation and some utilities only own generation, they don't own transmission. So if they want to participate in our market with that generation, then they do have control over the pricing parameters. They tell us, here's what it takes to operate this generator at. Here's what it costs to start it up, here's what it cost to maintain it. Here's what it costs to, you know, provide energy. We have the ability to override that if we need to for reliability reasons. For example, if for whatever reason, the, the dispatch engine would say, don't start this unit for economics and yet we've got a reliability need, we can go to that utility and say, start the unit. And that's what we call a manual dispatch instruction.

**BOSTELMAN:** OK, thank you. Another question I have is in the, in your comprehensive review, it says on page 76, I don't expect you to look it up. So don't worry about that. That and a quote: In some cases, the financial only-- the financial only members which are nongenerating members benefited greatly from the February events end quote. It suggested further analysis should be conducted to determine if these

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payments are appropriate. Then it's written in the responses to the committee before this hearing, it was reported that \$400 million went to those nongenerators. From that, my take, and committee members can look behind the SPP response. Those market participants, if you flip through about the fourth page from the back, you'll identify those are majority, if not all of those recipients from outside of the state of Nebraska. And I believe if I'm not correct, correct, my question to you is, are these nongenerators, do you know, are they investment companies?

**LANNY NICKEL:** I would venture to say that they are. Generally speaking, that's, that's what we would see participate.

**BOSTELMAN:** I would agree. I would agree. Thank you. And considering that the event reportedly, what I have found, what I have found in my, in our research we've done, it cost, this event cost Nebraskans about a billion dollars. This billion dollars comes from the pockets of Nebraska ratepayers. How is it appropriate or fair for generators and/or nongenerator generators to financially benefit either \$400 million or others and not our ratepayers?

**LANNY NICKEL:** You know, that's a, it's a great question, and I have to take you at your word. I don't know what, what it cost Nebraska. I'll take you at your word. You know, there are certain provisions in our tariff that we are simply required to incorporate, the Federal Energy Regulatory Commission, and that's one of them. That's one of the aspects that FERC imposed on SPP, and it's the same provision in all of the markets that I'm aware of that. And there's a reason for, they believe that that provides more liquidity, fungibility in the marketplace by having these financial-only utilities. But I can tell you as a membership, our members debated that and some wanted to, you know, even fight it. And we did. FERC still said, you've got to do it. So we did. And that's--

**BOSTELMAN:** Sure.

**LANNY NICKEL:** That's the outcome of that.

**BOSTELMAN:** Sure. And specifically, I do have some information from Senator Wayne's hearing that he had on natural gas before, earlier this year. Six hundred and about twenty-five million dollars, I see through the gas industry that I can obtain-- attribute that to. That was preliminary thoughts. Specific towns in Nebraska: South Sioux City, \$2.8 million; Wayne, \$3 million; Falls City, Scribner, \$5



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million; Wakefield, \$1.7. So as we start to look at the cost of this, that doesn't include like what Senator Brewer said, he got a call from one of the ranchers and they lost all their lambs in the barn. No electricity. We have companies in Senator Wayne's district that couldn't operate, couldn't function. We have a loss of generation, so I don't think that billion dollars is so far off. And so we're very concerned about what happened and how that affects our state. Regarding generation matching with load and instantaneous levels during events, in February 2021, did intermittency from renewable resources make load generation matching more difficult?

**LANNY NICKEL:** No, I don't think it did. Again, our forecast for wind, we're tracking really close to what was actually being produced, so it didn't cause us any balancing issues. What really hurt us the most in terms of that, having to take quick action. Because the fact is is that when we're balancing supply against demand, it's happening second by second by second. And if things change, and they change rapidly enough and in large enough scale, that's what creates problems for us. The wind wasn't picking up and dropping off dramatically. We did have a moment where some imported energy that we were getting from one of our neighbors was interrupted because of transmission loading on their system, and that happened over a period of about 15 minutes. And frankly, that's what led us to have to implement our, our load shedding there.

**BOSTELMAN:** One more question and then I'll let Senator Groene ask a question. So I do have several, so I'll try to, try to limit, someone else ask. Maintaining reliability with this large amount of renewables is extraordinary. Excuse me, let me ask the question first. Regarding generation matching, which I just said with load and instantaneous levels during the events of 2021, there was a comment made by your CEO, Barbara Sugg, and this is a quote. "Maintaining reliability with this large amount of wind is extraordinary," said Barbara Sugg, president and chief executive officer. "To manage this high volume of variable energy, we rely on accurate forecasting, our robust transmission system, a diverse generation mix and our equitable and efficient wholesale energy market." You mentioned resiliency before, and as you add on more generation and more unreliable generation your resiliency goes down, it causes more problem on the grid. How are you going to address that in the future?

**LANNY NICKEL:** Well, we hope to address it, and I know hope is not a plan. I heard that loud and clear. We plan to address that with one of the recommendations that has been sent to this task force, and that

recommendation is that SPP needs to routinely and periodically determine the minimum amount of reliability attributes that we have to have in our resource mix. And that in and of itself may dictate that, for example, we need more gas-fired generation or we need, we need more nuclear. I don't know what that answer is going to be. But as, as generation is put on the system, and we don't control that, we have no authority. No RTO has authority to tell its members, here's the generation you have to build. We just don't have that authority. So we, we're pretty much a taker in that regard. The utilities, they do their planning, that's what they're responsible for and they make those decisions about the type of generation that they're going to build. And usually, for the most part, it's a mixture of reliability and economics that, that guide those decisions. Our job is to make sure that we connect it reliably through the appropriate transmission infrastructure. However, one of the recommendations that this task force has been asked to figure out is should SPP, in addition to doing these new studies that would determine the minimum reliability attributes that have to be present in the generation mix, should we also provide ways to incent that to show up? So, for example, if as wind continues to grow and as solar starts to grow, we don't have a whole lot of it today. But, but it's in the queue, it's coming. As that continues to grow, how do we maintain a reliable system with what we have? Can we afford to let certain generation that provides the reliability balance we need, can we afford to let it retire? Can we afford to let it go away? Do we need to maintain some of that? And that's the decision and debate that this task force is having now. How do we do that? Is it through an incentive, financial incentive, or is it through a requirement where SPP says, I'm sorry, you can't retire that unit, we need it for reliability reasons.

**BOSTELMAN:** And I appreciate that. And Senator Groene, I'll get to you next. My comment to that is, is I think we have an outdated system. And the reason why I say that the system is based on baseload generation and you know who was going to generate, what they could generate, when they could generate, whatever it is, whatever baseload system is. Now we see retirement of baseload generation across the area. We have a completely different look. That was what you're facing, especially in the future from what we hear from public power districts, is they're, what they're expecting or looking to do. It's going to be a significant change. And I think one thing that the Governor said, has said many times, I think what this, this committee also extremely concerned about is, is the citizens of the state of Nebraska that this, we cannot have these blackouts, we cannot have

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these power outages happen again. We have to do-- we have to be mindful, we have to work together to figure out a way that this doesn't happen again. And that's part of what we're doing here today. But I do agree with you, but I really think if, if the transition continues to go as significantly as what I'm hearing, some are proposing, you have a completely different grid you're looking at. And I think it's very problematic. I think you got your job cut out for you. But with that, Senator Groene.

**GROENE:** A couple of clarifications. Maybe I'm saying, asking the same question Senator Hughes did. Coal had 23,000 megawatts. Only produce-- did they only produce 17, or they could only transmit 17?

**LANNY NICKEL:** They produced 17,000 megawatts, really during the most extreme--

**GROENE:** Did you tell any coal plants to back off because transmission couldn't handle it?

**LANNY NICKEL:** Um--

**GROENE:** I think it happ-- something happened in Omaha. But that was OPP--

**LANNY NICKEL:** Here's what I know. I don't know how much of this was coal, but I know because of the congestion, across the footprint we had to back down 1,900 megawatts of generation. Unfortunately, I can't tell you right now how much of that was coal and how much of it was gas and others, but--

**GROENE:** How many, how many plants, I think there was one in Nebraska, are just shut down and they're counting that as the reserve as their 115 percent? And then when the crisis came, they tried to fire them up and some of them wouldn't fire up because of maintenance. Is that true?

**LANNY NICKEL:** I don't know.

**GROENE:** Does any of your members shut down plants and just keep them in reserve because they're not efficient running at a low amount because of the inputs of wind?

**LANNY NICKEL:** I'm not aware of any of our members who have shut down generators and yet continue to count them as capacity for meeting their reserve margin.

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**GROENE:** One last question. Do you ever hear there's a group called EPRI, a consultant that a lot of you people use?

**LANNY NICKEL:** Yes, sir.

**GROENE:** We had an, MPPD had a meeting out there in North Platte and we went testified about their zero carbon 2000-- 50 years. Talking to a couple of their reps, they said, well, the future just expect rolling blackouts.

**LANNY NICKEL:** EPRI said that?

**GROENE:** Yeah, just it might be an expectation.

**LANNY NICKEL:** Wow.

**GROENE:** Is that your expectation? Because of reliance on--

**LANNY NICKEL:** It's not my expectation.

**GROENE:** --unreliable wind and solar?

**LANNY NICKEL:** Senator, it's not my expectation, and I'll tell you why, because I think this organization has enough smart people working in it. And I'm not talking about SPP, inc, I'm talking about the entire community. Surely, I mean, and we've got a responsibility. Surely we can figure out how to prevent as best we can in a reliable and affordable and responsible manner, blackouts like that from just routinely occurring.

**GROENE:** Least cost in first out, all right? Are you planning to put a base in there that throughout the system, 50 percent, 55 percent has to be reliable energy and then it stops, wind and and solar at like 40 percent. Because Germany, I think, found out about 40 percent, after that, you start having rolling blackouts. Are you looking at that to say all right, least in, least out until 40 percent and it stops, and then we go reliable?

**LANNY NICKEL:** That is-- not exactly in that way, Senator. But yes, that is exactly one of the things we're looking at with this task force is--

**GROENE:** [INAUDIBLE].

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**LANNY NICKEL:** --how do we make sure we've got the right mix, and what is that right mix?

**GROENE:** But is, what is the max? Do you remember?

**LANNY NICKEL:** We don't have a max.

**GROENE:** What is the max in any day of the year that it was solar and wind was the percentage of the total?

**LANNY NICKEL:** OK, now I understand the question.

**GROENE:** 160-some percent?

**LANNY NICKEL:** Yeah, 84 percent during one five-minute period of time is what we saw wind as it produced serving our load. So 84 percent of our load.

**GROENE:** Then what happened to my coal plant and my nuclear plant, were they tried to be turned down? Or what happened?

**LANNY NICKEL:** That would, to the extent that in order to produce that amount of wind, either coal and other gas generation wasn't running or it was turned down. But it would have only been--

**GROENE:** Is that an efficient way to run a factory?

**LANNY NICKEL:** It would only been done, that would only been done because of economics and reliability being considered together.

**GROENE:** Because of the least in.

**LANNY NICKEL:** Yes.

**GROENE:** But you can change that mix, put a, put a base, a base on renewable.

**LANNY NICKEL:** If, if that's--

**GROENE:** [INAUDIBLE] renewable.

**LANNY NICKEL:** If that's where we need to go. And again, we've got to have that debate among our members. If that's where we need to go to make sure we can keep the, the reliability where it needs to be.

**GROENE:** Well, thank you.

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**BOSTELMAN:** Senator Moser.

**MOSER:** Well, I was just going to follow up with a question on the financial-only market participants. So they made \$400 million in this event, do they lose money once in a while?

**LANNY NICKEL:** I'm sure they do. I'm sure they do.

**MOSER:** And--

**LANNY NICKEL:** They're taking a risk. It's no different than placing your bets in the stock market.

**MOSER:** Well, or buying and selling lumber on the Chicago Board of Trade or--

**LANNY NICKEL:** Yep.

**MOSER:** --soybeans. I mean, what benefit would they provide? Would they guarantee a certain amount of energy at a certain price for a member of SPP? Or would they, they would buy and sell power--

**LANNY NICKEL:** Yeah.

**MOSER:** --and try to hedge it and make money on it?

**LANNY NICKEL:** That's right. And basically, they're, they're just putting more money in the market in order for others who are, you know, not as hedged to be able to benefit from.

**MOSER:** So there's some benefit to having them?

**LANNY NICKEL:** And that's the reason why FERC has told RTOs to have provisions that allow for that.

**MOSER:** So they came out--

**LANNY NICKEL:** In this case, they just came out ahead.

**MOSER:** Yeah.

**LANNY NICKEL:** yeah.

**MOSER:** Came out like a bandit in this case.

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**LANNY NICKEL:** And to be clear, or to be fair, there were some utilities that came out ahead too. If they had excess power and were selling that power into the market at the kind of price-- we saw prices as high as \$4,300 per megawatt hour.

**MOSER:** What's typical?

**LANNY NICKEL:** Last year, for the whole year, the average was a little over \$17. For the whole year, that's the average.

**MOSER:** So \$70 to \$4,300?

**LANNY NICKEL:** \$17.

**MOSER:** \$17.

**LANNY NICKEL:** \$17, a little over \$17, \$17.46 was our average day ahead market price.

**MOSER:** 30 times?

**LANNY NICKEL:** For 2020.

**MOSER:** OK.

**LANNY NICKEL:** So, yeah, again, in every situation, there's winners and losers. And if you've got excess when the prices are that high, you're going to do well.

**MOSER:** Thank you.

**BOSTELMAN:** Senator Wayne.

**WAYNE:** Thank you. So at the hearing in March or February, whatever it was, I asked specifically about, and you said you would get back to me. Pulled it back. So on the 15th at 10:08, SPP declared a EE level 3 and it, when it was forced to begin to rely on reserves. That meant that the carrying reserves below the required minimum and had to initiate assistance. And then on the 16th at 10:00 a-- 6:15 a.m., same kind of call was made out due to current load. Extremely, basically, you didn't have enough load. And the question I asked back then, so I'm trying to understand is, on the 15th at about 1:00, all Nebraska, LES, NPPD and OPPD were asked to shed load. But your report said that you needed more load due to the extreme weather down south. Then, on the 16th, the same level 3 emergency was called. At the same time,

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LES, OPPD and MPPD were asked to shed load. Did you have an answer to that now?

**LANNY NICKEL:** I'm sorry. What is the question?

**WAYNE:** Well, they were shedding loads at a time when you said that you needed more load. And at the time you didn't have an answer because it was too early. And so I'm asking if you have an answer of why you guys mandated that we shed load when the whole market was needing more load.

**LANNY NICKEL:** So I'm not sure exactly where that impression came from. And if I provided that, I apologize.

**WAYNE:** Which impression, because you--

**LANNY NICKEL:** During, during the event, we needed more generation.

**WAYNE:** Correct, so--

**LANNY NICKEL:** Not more load.

**WAYNE:** OK, more generation. We require, I'm using the wrong words, and we can nitpick the words. I apologize because I'm not necessarily-- but in the graphs that were handed out, and this is your report you provided calling for a level 3 EE, emergency-- energy emergency alert level--

**LANNY NICKEL:** Three.

**WAYNE:** One started at 5:00 a.m. on the 15th and then it escalated to the 3 by 10:00. And pretty much the same process started again on the 16th. But during those times you not asked, you mandated that all three of our public power districts shed their loads, when you were asked, when you said the market needed more load. And in March you said you hadn't had time to look into it. And now did you have time and do you have an answer of how that happened?

**LANNY NICKEL:** Generally, yes. And I'm going to, I'm going to answer the question that I think you're asking, which is, and you can tell me if I'm answering the wrong question.

**WAYNE:** OK.



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**LANNY NICKEL:** So when we were issuing loadshedding instructions, we were doing that to all of our transmission operators in the footprint, including Lincoln, OPPD and NPPD. And the reason we were shedding load is because we didn't have enough generation in the footprint, nor did we have enough imported energy that allowed us to serve the load we had at the time. It was a, it was a supply and demand imbalance that we were experiencing. We had more load than we had generation, both internal and external to SPP that was coming in. That's why, so in order to fix the balance, you have to drop off load, you have to shed load, because you've only got so much supply.

**WAYNE:** But they were told to shut down, to turn off, to throttle down. Maybe I'm not understanding.

**LANNY NICKEL:** So I remember the question, that same question you asked back in March, and that is why were they at the time we were asking them to shed load as part of the regional solution that we needed to reduce load across the entire footprint, why did we do that when they were also being told to back down generation?

**WAYNE:** Correct.

**LANNY NICKEL:** That's the question.

**WAYNE:** Correct.

**LANNY NICKEL:** OK. That, that happened because at the same time we were having a supply and demand imbalance, we were also experiencing constraints on the transmission grid. And that gets really to the two reliability responsibilities we have. We have to continuously maintain a supply and demand balance, but we also have to protect the transmission grid. And the way we do that is by moving generation. So if you've got a, if you've got a facility that connects generation to load and that facility is overloaded, the way we fix that usually is by reducing the generation so that it doesn't create the overload on that facility. That's what we were doing with some of that generation in their areas. It was a concurrent problem along with the balancing problem we had, and we had to solve both of those at the same time. And that's why one of our recommendations going forward is if we have that same scenario where we have congestion that's causing us to back down generation at the same time we have too much load and we have to back down load, should that entity who's already backing down generation be given credit for that?

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**WAYNE:** So--

**LANNY NICKEL:** And that's, that's one of the recommendations, that's one of the improvements we're considering.

**WAYNE:** Where I'm struggling is during the time you're telling us to shut down or reduce generation, all right?

**LANNY NICKEL:** Yeah, reducing generation for a congestion issue.

**WAYNE:** You were buying from the market from Iowa.

**LANNY NICKEL:** Not, I don't--

**WAYNE:** At the exact same time.

**LANNY NICKEL:** Well, we weren't buying from Iowa. We were buying from MISO--

**WAYNE:** OK.

**LANNY NICKEL:** --and PJM and other systems.

**WAYNE:** So why are we throttling down while you're continuing to buy from the market? Why not utilize the people who are already within your membership?

**LANNY NICKEL:** We did as much as we could. We relied on as much of that generation as we could. There were about 1,900 megawatts of generation that we had to back down. We couldn't use it because of the constraints. We couldn't also overlap. We couldn't agree, hey, you know what? Let's use that generation while overloading the transmission system, because if you do that and then a transmission line trips, you're in a much worse situation. We have to do both. We have to protect the transmission grid at the same time we're also protecting--

**WAYNE:** OK.

**LANNY NICKEL:** --on the supply versus demand balancing issue.

**WAYNE:** So my, so where were you buying from? I'm trying to understand this, this congestion.

**LANNY NICKEL:** We don't, we don't pick any specific utilities that we buy from. We just call MISO. MISO is an RTO just like we are, and we

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say we need as much energy as you can get us, and then their market figures out where that generation comes from.

**WAYNE:** So what, what I want to know now is, did you buy it, because I'm looking at the map and then MISO runs down to the south. And what I'm trying to figure out if they were all from Texas, I'm assuming Louisiana and other places got hit with the same kind of conditions, and that would mean that there were over a generation or, in your words, overgeneration in Iowa. I'm trying to figure out how can you move power to over from Iowa into ours, but you can't move LES, Omaha, and NPPD's power down south?

**LANNY NICKEL:** Again, it depends on where that generation is coming from, and I, I don't know. When I ask MISO, hey, send me as much as you can, their market figures out where that generation comes from. And they're using the same logic we are, which is just pick the cheapest generation available, recognizing the transmission constraints that exists. I can't tell you where it came from, I just know they delivered a certain amount of power to us and they were able to use the transmission interconnections that we have between the two of us. In some, in some cases, some of that generation in their system is stronger connected to us than perhaps some of the generation in our own system.

**WAYNE:** So I guess my next question is, do you have like demarcation points where you can shut off, say, Oklahoma from Nebraska in your system?

**LANNY NICKEL:** We don't.

**WAYNE:** So if one area shuts down or has a major problem, the whole grid is affected. Is there any plans to put essentially switches that you can shut off and leave the rest of other states running?

**LANNY NICKEL:** We don't have any plans today to do that. Not that that's a bad idea, we could certainly look at it. But I think a lot of our members would think we don't, we don't want to do that because the minute you start breaking the system apart and isolating certain parts of it, you're just simply creating more risk in each of those pocketed areas. It's just, it's always better to have as much of that transmission system that we've designed that we've paid for intact because it's, it's a network, it's a spider web network that just adds resiliency. If one line goes out, you've got thousands of other lines that are still intact. The minute you start carving up the system into

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smaller groups of lines, a single contingency has a much bigger impact on that smaller system.

**WAYNE:** Yeah, but if Oklahoma gets hit by whatever [INAUDIBLE].

**LANNY NICKEL:** You don't care about them [LAUGH].

**WAYNE:** I'm just thinking the furthest one south. If you have no way of, of blocking out Nebraska, that, that, that to me is a bigger risk. Like, I don't know, I guess that's why you have trips in your house, so if something happens and you have a surge, it stops right there.

**LANNY NICKEL:** Well, and the system will do that. It is designed to do that. But that's usually a last resort. I mean, the system is designed to protect itself through automatic relays.

**MOSER:** Circuit breakers.

**LANNY NICKEL:** And circuit breakers. But that again, that's a last resort. You don't want that to happen.

**WAYNE:** So under what scenario do you--

**LANNY NICKEL:** You want to try to manage it proactively and keep that [INAUDIBLE].

**WAYNE:** Under what scenario would you, do you, would you do that?

**LANNY NICKEL:** Well, we would--

**WAYNE:** How many rolling blackouts does Nebraska have to have before you cut it off?

**LANNY NICKEL:** Yeah, I mean, we wouldn't do that intentionally. If, if that happened, and that's, that's an indication of something more severe on the system that we have failed to address through our own actions. So, for example, voltage decline. If voltage begins to decline, and normally, you know, if it's a 138 kV system, you try to maintain somewhere around plus or 5 percent of that. That's what you would normally maintain. If it starts to degrade and you're down to say 90 percent of the voltage that's normal, it starts to get a little risky. You get down to 80 percent, you've just lost the system. It's going to disconnect on its own and then you lose, you lose control and eventually you lose a lot of load. That's, that's what happened in 2003 in the northeast.

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**WAYNE:** But isn't there a better scenario that in this situation where you are telling Nebraska to idle down, but you still need more generation down south, and because we're having too much up here, is it a better system to just isolate that to make sure--

**LANNY NICKEL:** Well, I do think--

**WAYNE:** --Nebraska and South Dakota are running until you fix that and just move it over?

**LANNY NICKEL:** I do think-- now, I, I wouldn't use the same words that you use. And I apologize, I'm an engineer, I have to make sure I'm using the right words, but I do think there's an opportunity. It's a little more complex, and I know that one of our stakeholder groups is discussing this as, as part of the recommended improvement. I think when we have congestion, it would be better to isolate the load shedding to the areas that have the least generation. I think that would be a much better way to handle it. But that's just me personally. Our, our stakeholders have to weigh into that. And they know that next year could be a different situation, and I would be glad to have the help from some other state. So that's why they always, they, they think twice about trying to isolate responsibilities because they recognize next year could be my problem. This year it was his problem. Next year it could be mine. But I do think that there are opportunities to do just what you suggested should be done. We just, we weren't prepared to do it this time because the approach that we were using was an approach that the stakeholders had already approved and that was the plan we had in place.

**WAYNE:** Well, my struggling, and at least the district I represent, is OPPD was told to shed. And yet you're, you're telling us we need more. And so they're, they're asking me, what's the role of an elected board if we can't control our own power? So that's the, I'm just telling you the dilemma that that put us in.

**LANNY NICKEL:** I understand.

**WAYNE:** Because it's a significant concern that if you're saying the system needs more power, more generation, but at the same time you shut down and then we experience rolling blackouts, you're essentially saying we have no control over our power to use. And that's, then I don't know the purpose of an elected board. [INAUDIBLE]. That's all I had.

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**BOSTELMAN:** OK, thank you. And I think the transcript from before about what Senator Wayne was talking about, is specifically his statement here is: But LES is buying power across the river, just south of Omaha from Council Bluffs, and they weren't asked. So I'm asking the reason why. I'm asking is it, is I can't believe with all the technology and all the software that's being used that we don't have answers today. And that kind of rolls into a question that I have too, is, is if we're a surplus, we were told, according to SPP, we had-- let me find it. We had 15 minutes. Let's see, curtail generation in only 15 minutes, when it actually in Nebraska curtailed generation six hours. Then why is it to where, specific to Senator Wayne's question, where he said, why is it when we have excess power and yet must curtail generation, when at the same time we are purchasing power from Iowa in this case? Is there a case for emergency situations where we don't have to place power into the system in order for it to come back to a customer? In other words, if I'm in Lincoln and I'm generating power in Lincoln and Mos-- Senator Moser is in Columbus and they're shedding load, but I can generate all the power that he needs, why is it we can't deliver that since we're right here in Nebraska.

**LANNY NICKEL:** We should be able to.

**BOSTELMAN:** There seems to be a rule within SPP that we can't do that. Have you-- that kind of goes to what Senator Wayne is talking about.

**LANNY NICKEL:** I'm not. I'm not sure the context of the situation you're describing, but I do know that if you want to rely on generation outside of your, your footprint, let's think of Lincoln as an example. City of Lincoln was to be able to rely on generation that it's buying from some other entity and wants to treat that as capacity. They have every right to do that. And they can do that as long as they have transmission service across the facilities that are being used to deliver that. By the same token, if they want to build generation in Lincoln to meet their load needs, they can do that, too. That's all part of their choices they make, and we don't dictate-- the only thing we do is we just, we require that there be sufficient transmission capacity to enable whatever their resource plan is.

**BOSTELMAN:** So my, the question is, the question is the specific, OPPD was told to shed power. OPPD had got rolling blackouts at the same time.

**LANNY NICKEL:** Yes.

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**BOSTELMAN:** In that city. So they're there, they're there generating right there. But they're told, no, you can't. You have to shut down. So it's not that someone [INAUDIBLE].

**LANNY NICKEL:** They had a small-- yes, they had a small amount of load shedding obligation because of the regional load shedding plan that our stakeholders had approved.

**BOSTELMAN:** I appreciate that. But I think what the, what I think most of the committee members say that that's hard for us to explain and that's hard for our ratepayers to accept. Understand it's hard for us to accept. And that's the whole question, part of why we're here today, is we lost, unfortunately we weren't like ERCOT, who lost 100 people that died. We didn't lose anybody that I know of that, that died from the cold. But we had a significant fiscal impact. And as Senator Brewer said, their phones are ringing off the hook. Mine's ringing off the hook, saying, why is my power off. When I called my, [INAUDIBLE] city, Superior, and I called the city manager, the power manager there and he says, I have no idea why our power just went off. That is a problem. And so that's what we're trying to get out. So I appreciate you, again, I appreciate our discussion here and it's, it's informative. But we've still got more to go. So Senator Hughes.

**HUGHES:** Yes. Thank you, Mr. Nickel. We're roasting you extensively. Thank you for--

**LANNY NICKEL:** That's OK.

**HUGHES:** --putting up with that. Just for background information. We understand there's different types of generation. Is there different types of transmission? What, when, when we talk about transmission, is it one-size-fits-all? I know there's different kW lines.

**LANNY NICKEL:** Yes.

**HUGHES:** Just give me a CliffsNotes on transmission.

**LANNY NICKEL:** So there are different voltage classes. We have transmission voltages in SPP that range anywhere from 69,000 volts or kV, all the way up to 345,000 volts or 345 kV. There are also different design standards. Each utility kind of has their own approach for how they build the transmission infrastructure, the, you know, the-- whether it's in H-frame or a steel tower. So there's a lot of different variations as to how those lines can even be built. So that's kind of the CliffsNotes of transmission in SPP.

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**HUGHES:** So the, the transmission and then the, the I'll call it transformer substation to distribution, those are still the transmission companies' facilities?

**LANNY NICKEL:** That's right.

**HUGHES:** Yet, how hard is that to manage all of that different, the variations in transmission? I mean, I guess I'm trying to throw you a bone here that it looks to me like that's extremely difficult with all the different variations of transmission to manage that, you know, that this line will take a little, this line will take a lot, but they're going shorter distance. And then the fact that you said that, yeah, we were getting power from New Jersey, but yet we couldn't get power from North Dakota and Oklahoma. I mean, it's kind of about the same distance, but that's basically a transmission problem.

**LANNY NICKEL:** It is, and I only point that out to point out that there is room for improvement even in SPP in terms of additional transmission infrastructure. If we'd have had enough transmission infrastructure just in SPP, we would have had access to another almost 2,000 megawatts. Now that, I mean, that wouldn't have saved the day.

**HUGHES:** [INAUDIBLE].

**LANNY NICKEL:** No, I'm talking about within SPP. Yes. And basically the corridor from the northern part to the southern part, if that had been more-- if we had more capacity available on that corridor and set of hundreds of transmission facilities, then that would have given us access to another almost 2,000 megawatts.

**HUGHES:** Thank you.

**BOSTELMAN:** Senator Brewer.

**BREWER:** All right, and this may be a better question for someone who follows you. But if we're losing some of the power in transmission, is that a fair statement? That it doesn't move from A to B and stay exactly the same as it was or arrives?

**LANNY NICKEL:** That's correct. That's correct.

**BREWER:** Is there a way to figure a percentage per mile or how do you how do you know how much you lose when you flip the switch on and you're sending it across the state?



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**LANNY NICKEL:** It generally depends on the nature of the transmission facility, the characteristics of the facility, as to how much energy is lost. We call it power losses. Usually, the higher-voltage facilities, well, not usually, the, the higher-voltage facilities on a percentage basis produce less losses than lower-voltage facilities.

**BREWER:** OK, now, now tracking. So if you had a lot of things that are generating a little bit of electricity, but they have to send power a long ways, it's not going to be very efficient. You're going to be losing a lot of it in the lines.

**LANNY NICKEL:** That's correct.

**BREWER:** So with that said, if we have a fixed facility, whether it be coal, gas, nuclear or whatever, it's going to be there and it's going to go out, it's going to hit a mainline is going to push it where it needs to be. But if you have a wind farm scattered over thousands of acres with all kinds of feeder lines coming in and out, aren't you eating all kinds of power going--

**LANNY NICKEL:** Well, the same is going to be true of any generation in our footprint.

**BREWER:** Yeah, but if you have one point, as opposed to 250, wouldn't you be--

**LANNY NICKEL:** If you have, if you have enough transmission that can disperse the energy out of that one single point, it would require a lot more transmission to do that, as opposed to having smaller points dispersed throughout the footprint. And you get a lot more diversity, less potential for the loss of one single event to result in a problem.

**BREWER:** But when we had a nuclear conference last week, and a lot of us learned a lot about nuclear energy, and it was actually an excellent conference. I'm really glad I went, because--

**LANNY NICKEL:** I've gotten the handout on that, by the way.

**BREWER:** Well, I wish you could have went, because I think that probably, that single event did a lot to help folks just to understand. Because mostly you fear of nuclear energy, because just the word and Chernobyl and all this, well, you know, there's, there's another side to it that seems like maybe as much as we'd like to think the wave of the future is got to be solar or whatever, that looks like

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a option that has to be in the package. And then when you talked about how out of all those that met the standard, the one that was there spot on was, was your nuclear package. So, you know, hopefully that is part of what they're looking, I assume it is. But you know, for your defense, I will tell you this, you've been grilled hard on a lot of stuff. Some of it was, was probably really asking you to clean out their on stuff that really wasn't necessarily in your wheelhouse because of the nature of the beast. In the military, we used to have what was called a maneuver damage officer. And that maneuver damage officer, his job was when we ripped through Germany and ran over Mercedes and tore up streets and villages, he'd go behind and he would pay people and he'd fix all the messes that we made. That's your job, and you're doing a good job on that, OK?

**GROENE:** Question.

**BOSTELMAN:** Senator Groene.

**LANNY NICKEL:** I'll have to think, I'll have to think about that more. But thank you for that analogy.

**BOSTELMAN:** Senator Groene.

**GROENE:** Sir, most of this believe, I believe, correct me, Nebraska was a net exporter during this crisis and transmission was a problem. Have you identified the spots on the map where the transmission chokeholds were, the bottlenecks were? Was it on the receivers' end or was it on our product-- on the production end?

**LANNY NICKEL:** Neither. It's, it's, it's just the facilities that connect the, the grid together. Those facilities are what caused the constraints.

**GROENE:** No, these are just--

**LANNY NICKEL:** We have identified them. In fact, they're in, I think they're in our report. There were 54, I believe, different constraints.

**GROENE:** Were we they located, mostly in the south or the north?

**LANNY NICKEL:** All over the place. There were some between Nebraska and Kansas, there were some in North Dakota. I think we had some isolated constraints in Texas and Louisiana, that our portion of, of Texas, which is the northeastern part.

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**GROENE:** So now as we created this huge grid, the Southwest Power Pool, each district or power company was responsible for draw-- for building and connecting to the grid. If they didn't have the right connections that flowed from here to Kansas to Arkansas.

**LANNY NICKEL:** Yeah.

**GROENE:** Each one built their own as part of the--

**LANNY NICKEL:** That's correct.

**GROENE:** --agreement to be part of it.

**LANNY NICKEL:** That's correct. Now, and then since joining SPP and really since 2004, when SPP became a regional transmission organization, SPP now has the responsibility to plan for future upgrades. And we've done that and we've, in fact, we've got about \$10 billion of investment that's been put into service since we kind of took over that role. Having said that, we don't typically perform transmission planning, taking into account what we need during the most extreme weather event we've ever seen. We just, that's-- we usually plan based on what happens if we lose a single transmission line.

**GROENE:** So you plan on addressing those choke points with each individual.

**LANNY NICKEL:** One of our recommendations is to increase the amount of extreme scenario planning in the future. That is not something that--

**GROENE:** But those choke points--

**LANNY NICKEL:** --we do.

**GROENE:** --will going both ways will still be there, right?

**LANNY NICKEL:** They won't be recognized as much during normal conditions or even single condition-- contingency conditions. Those choke points don't typically show up in routine transmission planning scenarios because we just don't usually take into account these kinds of extreme conditions.

**GROENE:** This is coming from a free enterprise guy, but exceptions to every rule, our public power has worked out to be a blessing. And it's been built on reliability and efficiently-- efficiency for our

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consumers. All right? Not on profit. So we build coal plants, efficient coal plants. We build transmission lines and then we join for-profit organizations who are going to bottom dollar are going to take the cheapest thing, shut down their production, buy the wind from other places. And then when we get hit, we're sitting here with reliability and efficiency, and we're bailing out people who took the profit motive and didn't build the transmission line because it wasn't the bottom dollar. I don't, I think there's, there's a disconnect there with the way we operate and the other members of the Southwest Power Pool. And going back to what Senator Wayne said, we did it right. We had the production. We had the transmission lines and you had us shutting down electricity and shutting down production, five miles, 10 miles from a power plant. Made no sense.

**LANNY NICKEL:** Yeah, and I understand the frustration. I really do. And but I want to remind you that there was a situation not that long ago when we had extreme flooding, and by we, I mean Nebraska and some of the states alone. The, was it the Platte River that was flooding?

**MOSER:** Missouri.

**LANNY NICKEL:** Missouri River. Anyway, that shut down a lot of nuclear and a lot of power plants along the way. And Nebraska benefited by being part of SPP at that time. So I just you, just caution you to not think of every emergency event as being the only emergency event. The next emergency event we happen could very well result in Nebraska needing the rest of SPP. So just again, I, I don't want to under--undermine what your frustrations and concern are about. I get it. I understand that, I would be frustrated as well. Just keep in mind that there is value in being part of a larger community, because there are going to be times when you have to rely on the rest of the community just as much as the rest of the community relied on you this winter.

**BOSTELMAN:** Senator Moser.

**MOSER:** So this balancing act between generation and load, is it humanly balanced or do you have--

**LANNY NICKEL:** Systems.

**MOSER:** --computer programs to do it with certain algorithms? Because wouldn't it happen so fast that humans aren't probably going to keep all the balls in the air?

**LANNY NICKEL:** Yeah, that's correct. We have systems.

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**MOSER:** Some may bounce on the stage.

**LANNY NICKEL:** Yes.

**MOSER:** So have you looked at your algorithms to see if you want to change any of your basic decision-making models in those algorithms?

**LANNY NICKEL:** Yes, sir, we have. And in fact, one of them is the very situation you're talking about now, the fact that Nebraska and some of our other states and utilities who had excess generation were being asked to shed load. That is one of the algorithms that we're looking at.

**MOSER:** Do you tell members what transmission lines to build? Do they ask your permission to build transmission lines?

**LANNY NICKEL:** It depends. Those members that have their own infrastructure that they brought into the RTO, so these are facilities that were in place even before they joined SPP, they do have an obligation to maintain those.

**MOSER:** Some of your transmission lines belong to the SPP?

**LANNY NICKEL:** No, they don't belong to us.

**MOSER:** As a group?

**LANNY NICKEL:** None, none of the transmission facilities belong to us. We just have authority over the planning process, which can identify the need for new transmission lines. And if so, we have the authority to direct construction of those new transmission lines.

**MOSER:** Yeah, I think.

**LANNY NICKEL:** But we don't have authority over the existing facilities and whether or not that needs to be maintained, whether or not an existing facility should be removed. We don't have that authority.

**MOSER:** Yeah, in this particular case, we had more capacity to generate more electricity, but it just there wasn't a good system to make it all work out. And so people are frustrated that, you know, we had excess power, yet we had brownouts or blackouts.

**BOSTELMAN:** So real quick, then I'll go to Senator Cavanaugh. Cooper did not shut down during that flood event.

**LANNY NICKEL:** It didn't.

**BOSTELMAN:** They stayed running the entire time. Senator Cavanaugh.

**J. CAVANAUGH:** Well, thank you, Chairman Bostelman. Thank you for being here. Kind of piggyback on that. So I recognize that the benefit of being part of a larger group. In that situation, were any of the other parts of SPP required to shed load in the pursuit of helping Nebraska?

**LANNY NICKEL:** No, they, that wasn't as much of a load. I mean, we had enough generation in the rest of the footprint that we could supply the demand in Nebraska from other parts of the footprint. So we weren't in a, we didn't have more load than we had generation at that time. We had enough generation. It was just outside of Nebraska to help Nebraska serve its load.

**J. CAVANAUGH:** Gotcha. So admitted, so admittedly, that it's different than this scenario we're talking about--

**LANNY NICKEL:** It is a different scenario.

**J. CAVANAUGH:** --where we were required to shed load in the pursuit of helping somebody.

**LANNY NICKEL:** That's correct.

**J. CAVANAUGH:** OK. I just wanted to make sure. I mean, I appreciate the your point about the mutual aid, but I think it's important to kind of what Senator Groene was talking about, and I think everybody has addressed, is that we were basically formed-- forced to harm ourselves in the pursuit of helping other people. And when you're talking about that being, to be careful about how we pursue that going forward, that's an important distinction to say is that other people helped us at no risk or loss to themselves, and we had to do the opposite. But switching gears of a different question, I guess, you listed out 22 recommendations and you listed out the four priorities. And I just kind of wanted to touch on the fuel assurance, is that, is that trying to increase storage capacity, increase availability of purchase agreements, long-term risk? How, how, what is exactly the nature of that recommendation?

**LANNY NICKEL:** Well, there's there's a number of options that need to be considered. We don't have the answers yet. What we know is we just need to have more fuel assurance. And some of the ideas that I've heard are to do what you just described. I just, I can't tell you

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today that that will be the idea that gets implemented. You know, one of the things that has been considered is giving credit in terms of capacity for those who can demonstrate that they have the dual fuel. That's a way to assure that you've got the fuel. So there's a lot of different ideas that are on the table. The responsibility of the task force that I mentioned is to figure out which idea is best that ultimately produces what that outcome, which is to increase our fuel assurance.

**J. CAVANAUGH:** And I may have, obviously I missed some of the recommendations, but I guess you didn't list all of them. Is it anywhere in those recommendations, things like efficiency decreasing just the necessity? I mean, obviously, we live in a world that's more and more dependent on electric generation. One of the problems we had in this particular situation in terms of availability is the amount of heat generation from natural gas. I mean, my home is heated by natural gas by, you know, for electricity, you know, could be relied. So I guess my question is, is there part of that pursuing more, I don't know, insulation, more energy-efficient homes, that kind of stuff, to decrease individual consumption or something along those lines, or distributed generation or any of those types of alternatives aside from just addressing these kind of bigger structural problems?

**LANNY NICKEL:** I certainly hope so. I don't think that's something that SPP as the RTO can dictate, but I do hope that our utilities are considering those kinds of initiatives as part of their resource planning.

**J. CAVANAUGH:** Was SPP dictating at any or all of these 22 recommendations, or are they more guidelines to say these are problem solving?

**LANNY NICKEL:** Once, once any of those turn into a policy that is then turned into a requirement that is approved by FERC. And I say all of that to say it takes a while for any of that to turn into a requirement because of the fact that we're subject to FERC's jurisdiction and they have to approve anything that goes into our set of requirements. If that happens, then yes, it will be a dictation. But right now and, and I don't know how much of this will change, but right now, all we dictate is that each load-serving entity provides enough generation to meet their peak demand, plus an additional 12 percent. That's what we call planning reserve margin. But we don't tell them how to do that. We don't tell them, hey, look, you got a certain amount of that's got to be efficiency, certain amount of it's

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got to be demand response, certain amount of it's got to be wind. So we don't, we don't tell them how to do it. We just say, you have to have at least 12 percent above your, yeah.

**J. CAVANAUGH:** But that, that is capacity that's not actuality, right?

**LANNY NICKEL:** Yes.

**J. CAVANAUGH:** As Senator Hughes asked about things that are scheduled outages and other things like that.

**LANNY NICKEL:** Yeah.

**J. CAVANAUGH:** That, that is just a nameplate capacity.

**LANNY NICKEL:** Well, not necessarily. I mean, in order for us, because we do a check every year of whether or not they're complying, and they provide us data. That data includes not only their projected peak demand, but also how they're supplying the capacity. And it's got to be accredited capacity, which is different from nameplate capacity. And accredited capacity considers, for example, for wind, just because you've got nameplate, you're not, you're not going to get full credit for that. Across the footprint--

**J. CAVANAUGH:** That's baked in.

**LANNY NICKEL:** -- we got 27-- yeah, that's baked in. We've got 27,000 megawatts of nameplate wind capacity. We accredit about 4,000 megawatts. That's across the footprint, not only utility-by-utility basis. So for gas, as an example, in order for it to be accredited, it's got to show, it's got-- there's a performance test that the gas unit has to perform, I think, once every three years. And then it also has to demonstrate that it's got a firm supply on the fuel side and then it gets, you know, however many megawatts that can show and demonstrate that they've met that criteria. That's what we would consider as accredited capacity.

**J. CAVANAUGH:** So I guess that kind of brings back to my point about the efficiency. I mean, if it's you're required to be 112 percent of your, your estimated peak, right? Efficiency is you could lower what that estimated peak--

**LANNY NICKEL:** Yep.



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**J. CAVANAUGH:** --total megawatt hour consumption is. So somebody had missed it heavily, they would in effect, change their peak demand.

**LANNY NICKEL:** Absolutely.

**J. CAVANAUGH:** And so I mean, in a roundabout way, you do have some control over that, I guess.

**LANNY NICKEL:** Well--

**J. CAVANAUGH:** You just don't have a control of how they achieve it.

**LANNY NICKEL:** Yeah, we can't tell them specifically how to do it. But I mean, they've got to figure out from a value proposition perspective, how can I meet my obligations to SPP reliably and affordably? Thank you.

**J. CAVANAUGH:** Thank you.

**BOSTELMAN:** Senator Wayne.

**WAYNE:** So let's say there's a growing city and so that demand goes up. Who, who, who, who controls how that, where we have to take on more generation?

**LANNY NICKEL:** The utility has the responsibility to meet its capacity obligations to, for that load. So it, if it's growing and it's projecting to grow its load, then it's going to have to make sure that it's lining up and planning the appropriate amount of generating capacity to not only serve that load but have an additional 12 percent reserve.

**WAYNE:** You said that you have the authority to tell individuals or utilities to build new transmission?

**LANNY NICKEL:** Yes.

**WAYNE:** But if they want to build new transmission, they have to get approval from you?

**LANNY NICKEL:** It depends. If it's, if it's new transmission, yeah, they got to come to us because we have to make sure that the new transmission they're building doesn't create harm somewhere else. So even if they're willing to pay for it, we call that a sponsored upgrade. Even if they're willing to pay for it, we have to at least

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study it. We won't, we won't deny it, but we'll study it and we'll tell them whether or not there are reliability implications because of that new transmission. Generally, there aren't. But if there are, then they would have to address those reliability implications before they can build that new one.

**WAYNE:** And if you, if you direct somebody to build a new transmission, which sounds like may happen out of the recommendations, who bears that cost?

**LANNY NICKEL:** It depends on the voltage class. If, if the, the voltage class of the new transmission is 300 kV or above, the entire footprint helps to pay for that. And that's on a load ratio-share basis. So a new transmission line in Nebraska that's 300 kV and above and if we directed it, the rest of, I mean, Kansas, Oklahoma, all of the 14 states will chip in and help pay for that.

**WAYNE:** Now, is that an additional charge that you send to the members?

**LANNY NICKEL:** It's really, it, it rolls into their rates. So basically it just means that their retail customers are going to pick that up because of the fact that their rates will go up to help fund that facility. Now Nebraska is going to pay its fair share, too--

**WAYNE:** Right.

**LANNY NICKEL:** --but it's just that that line, even though it's in Nebraska and being built by a Nebraska utility in this example, would be funded by all of the region on a [INAUDIBLE] basis.

**WAYNE:** So how many projects is Nebraska funding right now across the system?

**LANNY NICKEL:** I don't know. I have to--

**WAYNE:** But there are projects?

**LANNY NICKEL:** Oh yeah, yeah. There's projects all across the footprint that are being funded in that manner now. So that's the 300 kV and above, we call that the highway cost allocation. If it's a new line between 100 kV and 300 kV, that's what we call biway. And it's two-thirds of the cost of that line is funded by the zone wherein that line is being located. And then one-third would be funded regionally. If it's below 100 kV, then the zone that's building that line, it funds it entirely.

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**WAYNE:** Out of the 59 recommendations are any of those things outside your current contract?

**LANNY NICKEL:** No. Although I'll say that one of the recommendations is to advocate for change in the gas industry. So we can't, we can't force the gas industry to do anything. But we do think that together, through community, you can have a louder voice and maybe we can educate and inform enough decisionmakers that they can maybe, maybe change will happen.

**WAYNE:** Speaking of gas. So since February, has there been any issues where gas hasn't been able to meet its demand up until today, and then we'll go wind and everybody else side by side?

**LANNY NICKEL:** No, not that I know of. We haven't had, you know, nearly the extreme events since then, but--

**WAYNE:** Well, have they, has there been any time since February where any of the sources have failed to meet their demand or they're projected demand?

**LANNY NICKEL:** So I'm assuming you're asking about have they failed to meet their accredited--

**WAYNE:** Correct.

**LANNY NICKEL:** --value? I don't know. I don't think there have been. I know we set a new summer peak this year as well, 51, a little over 51,000 megawatts. So that was an all-time summer peak for us as well. And I think, even in that scenario, all resources perform pretty well. But again, and in the summertime, you don't have the situation you have in the wintertime where homes are being heated by gas and generators need that same gas. In the summertime, nobody's using gas for residential, I mean, not as much.

**WAYNE:** Would you say the most important thing about load generation is delivering to the customers, so I guess that's not only to be able to produce it, but to be able to deliver it to the customer, those type of things?

**LANNY NICKEL:** For gas?

**WAYNE:** Well, for any--

**LANNY NICKEL:** Oh.

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**WAYNE:** --any source, right? Those are, fundamentally if you are the energy company, it's about generating and delivering to the customer.

**LANNY NICKEL:** Yeah.

**WAYNE:** Is it fair to say that you control both of those throughout Nebraska?

**LANNY NICKEL:** No.

**WAYNE:** Well, you tell us to turn it down.

**LANNY NICKEL:** Yeah.

**WAYNE:** And you, well, you basically tell us where to put it.

**LANNY NICKEL:** So not sure I'll appreciate the "where to put it" part of that, but--

**WAYNE:** That's what it is, right?

**LANNY NICKEL:** Never mind. Let me respond. [LAUGHTER]. So it gets back to my, you know, SPP's mission statement is working together to keep the lights on in an affordable, responsible, affordable manner. It's that working together that's important to remember. I mean, SPP does have a role, and our role is to make sure that the energy is balanced on the transmission grid and that the transmission system is protected. That once it's delivered to the distribution system, we have no control over that. That's where the utilities pick up.

**WAYNE:** I'm not, I'm not saying that. What I'm basically saying, though, is at the end of the day, you tell us whether to throttle up or throttle down.

**LANNY NICKEL:** On generation.

**WAYNE:** And if you direct where things should go as far as transmission because of congestion or whatever, you direct that.

**LANNY NICKEL:** Yeah.

**WAYNE:** Those are the two most important things when it comes to--

**LANNY NICKEL:** When it comes to the transmission grid, yes.

**WAYNE:** Well, when it comes to energy.

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**LANNY NICKEL:** Yeah.

**WAYNE:** If you don't have those two things, you don't have anything.

**LANNY NICKEL:** Yeah.

**WAYNE:** And then what I heard today is there's multiple projects outside of Nebraska that Nebraska taxpayers are paying for because we share in those costs. And if you direct those, we have no say whether we can, we can do that or not. So I'm not saying maybe Nebraska shouldn't participate in SPP. I'm just saying it might make more sense to just have, like Wyoming and Nebraska Energy Authority, instead of three different elected boards.

**LANNY NICKEL:** I will say, though, that even though we direct the transmission to be built, there are other processes at each of the states that then have a role. In a, in a lot of cases, those state authorities are over the, for example, the routing. And they can approve or disapprove where that transmission line is built. And if there is a situation where a line is not approved at that state level, we may have to find another alternative. So we, we can't, we can't, I mean, we can-- we have a lot of authority and a lot of influence in that regard, but we do recognize there are other jurisdictional authorities that that are in play as well.

**WAYNE:** Thank you.

**BOSTELMAN:** So I'm going to have a page deliver a slide to you. And for members, if you go in your booklet, it's on graph. We've been talking about renewables a little bit there. And I just, this was an illustration that was present a 3D actually did this. That's modeled, actual modeling of the weather event in, in February of 2019. And currently, one comment I guess I have is right now is the wind is a first-in-must-run, and does not-- it's really not low cost. So you require that, so hopefully you're looking at that in the thing is that, that's not exactly the, the only source you have to take right away. But if you look at this, what this graph does, is if you take wind, solar and storage in the future, then you take that event and you do the modeling here, it actually shows you that the load that was needed at the time was 45.5 gigawatts, I think. And there's actually 19.5 and 2-- 19.7 gigs available or average at the time. But if we include all those and we go across the spectrum of the day's actual weather events at that time, wind, solar or whatever, if those were our only assets that we were using for generation from February 7 to

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February 14, there are some significant drop-offs. And my point being here is, is, is baseload generation. If we don't have that baseload generation, and MISO has had this problem in the summer and I've had a couple other calls this has come up this summer. And I think we'll hear from natural gas we got issues this summer. So we're relying on basically one form of energy in a sense, backed up by gas, which we don't, I don't think we have enough natural gas in this country at all. Residential should come first. So I'm hoping what what this model shows you and the model shows the, the committee here, and this is actual modeling of actual data, weather data from the 3rd of February to the 15th of February of 2021. If those were the resources were there, that we would fail to have met those needs and we would have had, our grid would have went down, plain and simple. So I bring this to you in the sense and show you and maybe you want to comment on it or not. But I think it's important for us to understand that, that the baseload generation, a variety of baseload generation, we don't have it. This is going to become commonplace. It's happened in the northeast, their grid. It's happened up there and we haven't learned from that. And we have it happened in here, it's probably happening on the west coast. So there has to be some significant consideration, maybe changes as to what's going on from here forward. If you want a make comment to that or not? Have you seen this?

**LANNY NICKEL:** I haven't. It's interesting. My, my only comment is that until some of these other technologies are more mature and fully developed, we're going to have to rely on a lot of what we have now.

**BOSTELMAN:** And I, I don't disagree in that sense. But my concern is, is we can continually see baseload generation being shut down. And what this shows us, and what we saw in February, it concerns me a great deal that next time we won't have those. We won't come in however many minutes it was between total failure on the grid and hard, hard-- I don't know the term used, but you know, hard shutdown where it's going to break equipment and we are going to be down for a while. And that would be catastrophic across several states. I'm just concerned in that area that, that as you look at things as SPP, as your task force looks at things, baseload generation has to be a pretty significant part of that. And when you look at resiliency, obviously if we continue to add and add and add, we're going to see more problems. And that's, that's been identified. So I appreciate that. Are there any other questions that we have from the committee? Senator Hughes.

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**HUGHES:** Thank you. In listening to the discussion here about, and Senator Cavanaugh brought it up, potential of storage at some point, and I'm still going to get back on harping on the reliability. And maybe you can't answer this, but do you know how many days' worth of coal a coal plant has to have on hand or weeks? I think it's probably weeks.

**LANNY NICKEL:** I think it varies depending on the coal plant, where it's located.

**HUGHES:** OK.

**LANNY NICKEL:** But days to weeks.

**HUGHES:** So in essence, that is their storage--

**LANNY NICKEL:** Yes.

**HUGHES:** --for power. And there's no storage as of yet, economically viable storage, for wind or solar. That's what the the Green Movement is hanging their hat on, that we're going to have storage. But yet that, there hasn't-- there's a cost to that. Somebody is going to have to pay that. And, you know, maybe it comes at some point, maybe the price is too high. But my point is I think that coal and certainly nuclear has storage capacity built in, i.e. reliability, and that there has to be a factor given when determining the cost of generation. It can't just be fuel or what they're willing to bid it into of the market, even if that becomes a negative. Because you're not comparing apples to apples, that's, you know, in the past, SPP has chosen the cheapest source of power to go on the grid. But you're not comparing apples to apples because there's no storage capacity or reliability factor, if you will, to wind and solar like, like there is to coal and nuclear. Now, gas kind of fits into a different thing. There is storage there, but you know, so it's a very complicated issue. But I would suggest, and, and for those in the room as well, when you look at new generation, that reliability factor has to be--

**LANNY NICKEL:** Yep.

**HUGHES:** --of a higher priority.

**LANNY NICKEL:** Yeah. And, and I agree with you. We don't, we don't make the-- we don't make that value judgment when it comes to planning of those resources. And today, when we compensate resources for producing

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energy, we don't recognize that reliability attribute either. And so that may be something that should be on the table as we discuss--

**HUGHES:** I definitely think it should.

**LANNY NICKEL:** --what we do going forward.

**HUGHES:** Thank you.

**BOSTELMAN:** Any other questions? Seeing none at this time, Mr. Nickel, I greatly appreciate you coming forward. There will probably be other questions we may send you, or maybe we'll get you on the phone and talk about them. But thank you for coming. Thank you for your patience with us and answering many questions--

**LANNY NICKEL:** No problem at all.

**BOSTELMAN:** --back and forth. But we appreciate that. Thank you.

**LANNY NICKEL:** No problem at all. Appreciate the opportunity.

**BOSTELMAN:** OK, thank you. Our next testifier will be Jill Becker. And I'll enter real quick before we start, for those who weren't here earlier at the mention, we did ask each of the testifiers some questions to speak on when they come. And those questions you'll find in your, in your notebook here behind your first tab, at the back of it. Those questions are there. So with that, welcome. Please state and spell your name.

**JILL BECKER:** Thank you. Good afternoon, members of the committee and Chairman Bostelman. I am Jill Becker, J-i-l-l B-e-c-k-e-r, and I'm a registered lobbyist for Black Hills Energy, and appreciate the opportunity to talk with you today. We proudly serve natural gas to nearly 300,000 customers across 319 communities in the state. And along with our operations in Nebraska, we serve 1.3 million natural gas and electric customers in 800 communities in 8 states. I'm going to try to go through my testimony kind of quickly in, like Senator Bostelman said, anticipation of the questions that you're going to ask. And then I'd be happy to answer your questions. At one point, during last February's extraordinary weather, every Black Hills Energy customer, both electric and natural gas, from western Wyoming to northeastern Arkansas, simultaneously endured temperatures significantly below zero. During that period, Black Hills Energy also experienced extraordinary demand for gas supply. At the same time, that gas supply was low and natural gas prices were extraordinarily



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high for the gas supply that was available. Nevertheless, we were able to keep energy flowing to customers in our states, including here in Nebraska. So I appreciate the opportunity to share with you what our team did and how some of the efforts that we undertook helped keep our customers homes and businesses warm and safe during the extreme weather conditions. And especially, I want to recognize our team members, and I'm sure that all of the utilities share this too, designate-- dedicated to physically inspecting and monitoring our key infrastructure, ensuring system integrity and meeting that extraordinary customer demand. One of the things that this committee may be interested in is how much natural gas infrastructure we have invested in over the last decade. We have invested hundreds of millions of dollars in system integrity here in Nebraska. These system improvements are rarely seen and may not be top of mind to others, but they're really critical to us and represent our commitment to safety and reliability. Our gas distribution system, which was designed for peak winter conditions, performed as intended. We kept our customers warm and safe. There were no widespread service outages or service interruptions in Nebraska, except for those customers on interruptible service who were asked to curtail. We kept residential customers online. Dozens of recent projects statewide played key roles in that result, and you may be familiar with some of these examples. We replaced over 200 miles of vintage pipe in central and western Nebraska. The Lincoln Resiliency Project, which was completed about two years ago, replaced nearly 90-year-old pipeline with newer, safer, more efficient pipeline. And we also completed the northeast Nebraska line, extending service from Bancroft into Norfolk over the past couple of years. All of those system improvements were absolutely critical to our natural gas infrastructure. During the storm, we also took steps to protect our customers. Before and after the storm, we communicated with our customers directly, as well as through media, email, social media and our Web site. We maintained those outreach efforts and informed customers about increased demand and higher usage and what they, most importantly, could do about it. Based on preliminary information that we received as a result of that storm, many of our communities experienced new or near-new peaks in both low temperatures and in consumption. As part of our obligation to serve and as a sound business practice, Black Hills Energy takes an intentional and deliberate approach to developing our natural gas supply strategy. Our goal is to achieve a diversified natural gas portfolio. Through continuous planning, our natural gas supply portfolio for any given day addresses normal consumption expectations. Our supply portfolio must be rigid enough to deliver

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during peak consumption situations, but also be flexible enough to manage through periods of warmer-than-normal consumption and weather. And as all of you know, we've got a lot of variability in both of those things, in both consumption and weather. Then demand on natural gas last February was unique not only for the level of gas supply demand, but also the unprecedented pricing of gas supply during that time. There was no reasonable way to avoid buying gas during peak periods when the physical gas supply had to continue to flow to keep our customers warm and safe. One of the things you should also know, and I'm sure you're aware, that we are a regulated utility and we have and will continue to work with the Nebraska Public Service Commission regarding the costs attributed to storm Uri. The Nebraska Public Service Commission approved Black Hills Energy's cost recovery plan on May 25, 2021. Importantly, we as a utility do not profit from the natural gas prices as there is no markup to those gas prices. Like many other utilities, Black Hills Energy was a pricetaker during the winter weather event. And this is the challenge facing our industry, not just a Black Hills Energy or even a regional issue. Like all commodities, current pricing is a direct result of the market forces affecting supply and demand. We have every incentive to ensure that the natural gas we acquire is prudently incurred to ensure service, service reliability. We take all prudent and reasonable steps to manage our gas supply portfolio, to balance natural gas supply, demand and pricing, and we will continue to do that going forward. We are aware of and closely monitoring the natural gas market environment, including current and forecasted prices of natural gas. We have a dedicated supply, gas supply team that execute strategies that balance our commitment to providing safe, reliable service to our customers, while also mitigating the financial impacts of market volatility. Delivering safe renewable energy is our priority. Our systems performed as intended during the extreme cold weather, and we continue to work diligently to ensure we have the needed supply while mitigating cost impacts on customers. Our natural gas plans are renew-- are reviewed and adjusted annually, and there are several factors that may warrant adjustments to that plan on a monthly and a daily basis. Those factors include weather, customer demand, supply availability, operational conditions and price factors. During that weather event last February, we were forced into purchasing additional daily supply during the peak to protect our customers. We cannot predict if the storm pricing will repeat itself. We can't predict if the storm or its impact will repeat, as there are many variables that cause their unique event. But we're doing everything reasonably possible to manage our system and pricing for the upcoming winter. We

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recognize that potential cost increases will have an impact on our customers, and we're here to help. We've been making major efforts to help our customers across our states use less energy through conservation and energy efficiency. We also encourage customers struggling to pay their bills to reach out to customer service teams, visit our Web site for additional options, and most importantly, we're using our data and experience to respond to a very dynamic natural gas marketplace. Thank you for the opportunity to speak with you today, and I'd be happy to answer any questions you may have.

**BOSTELMAN:** Thank you, Ms. Becker, for your testimony. Senator Brewer.

**BREWER:** Thank you, Mr. Chairman. First off, Jill, I represent most of western Nebraska. And through all the melee of everything, I have not had a single call of any issues or problem with Black Hills. So you must be doing a good job because nobody's complaining so.

**JILL BECKER:** Great. Good.

**BREWER:** Question for you. In the events that happened in February, we heard comments about how natural gas was freezing up and it being a factor in how they weren't able to do some of the providing in southern states. Do they have a failure to be able to heat it at the end that doesn't let it distribute? Or how does that work?

**JILL BECKER:** It's my understanding, and take it with the fact that I am not an operational engineer.

**BREWER:** I understand.

**JILL BECKER:** Certainly, we saw extremely cold temperatures in Texas where we would have been doing a lot of production. And I say we, as the gas industry, not be we as Black Hills.

**BREWER:** Where you're bringing it out of the ground and distributing it.

**JILL BECKER:** So I think that there were, yes, gathering and production issues. We, as Black Hills Energy are the distribution company. So once that gas gets to us, we were able to distribute it. So that's about all I can say. We know that there were production issues, and I think you heard that from the electric side too.

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**BREWER:** Which makes sense. So it's the ability to take it from the ground, get it to a hub somewhere where then it can go to you is where it broke down?

**JILL BECKER:** That's correct. Yep.

**BREWER:** OK. Thank you.

**JILL BECKER:** Yeah.

**BOSTELMAN:** Senator Cavanaugh.

**J. CAVANAUGH:** Thank you, Chairman Bostelman. And thank you for being here, Ms. Becker. Oh, I heard you mentioned deficiency, which of course I like to hear. So I appreciate that. Kind of to Senator Brewer's point, there, this was a, I don't know if they call it a black swan sort of event, whatever, like something that people didn't really plan for. And what you just said, what I heard was production was slowed as a result of the weather event. Which sounds to me almost like even if we scaled up production, that's not necessarily going to head off the problem we had here. Because all that the production was itself hampered by the event.

**JILL BECKER:** So again, this is my understanding. It is my understanding that we had production issues. So if you've got production issues, you're not going to have the supply that you want. And as we had more demand and needed more supply, we didn't have that additional supply within the industry as a whole. No matter whether we're using it as the gas distribution company or to provide electricity.

**J. CAVANAUGH:** Right, but my question is, say you have 100 wells. That's how you produce natural gas, right? You call it a well?

**JILL BECKER:** Yeah.

**J. CAVANAUGH:** And you were have-- basically weren't able to get gas out of the wells. So it doesn't, if you're not getting gas out of a well, it doesn't matter how many you have, right?

**JILL BECKER:** That, I would say that's correct. If you need one and don't have one, it doesn't matter if you have 100 and you don't have 100 either, right? I would agree with that.

**J. CAVANAUGH:** So--

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**JILL BECKER:** I would agree.

**J. CAVANAUGH:** And maybe you don't know the answer to this. Were the, was it wells were not producing at all, or they were producing at 10 percent capacity?

**JILL BECKER:** I'm going to, I'm going to, I'm going to assume there's some variance there. I'm going to assume that there were some not hitting production levels and I'm going to assume there were some that probably could not produce at all. You probably heard from the earlier testimony Tex-- the state of Texas and really what happened there is also under consideration by their state and by their regulators. So I don't want to be too far out in front saying that I know what happened, because I don't. And but they too are very concerned about what happened. And so I would definitely point us, and especially your legal counsel, definitely something to pay attention to with their findings and what they are doing about it and in response to the event.

**J. CAVANAUGH:** And just as a, I guess, a side question, where does Black Hills get most of its energy [RECORDER MALFUNCTION]-- market, are you buying from wells in Texas? You buying from--

**JILL BECKER:** So we have three major pipelines that we purchase gas from that come from different parts of the country. Texas is certainly just that area generally is definitely one of our-- one of our suppliers for sure.

**J. CAVANAUGH:** What are the other ones?

**JILL BECKER:** It will depend on the line, but we also have some gas that comes from the Rocky Mountains, and I can provide more details about that. But I think it's important to know it basically comes from three pipelines. Those pipelines, depending on where they are, can get [INAUDIBLE], can get gas from different locations of the country, different parts of the country.

**J. CAVANAUGH:** Do you know, presumably gas fields in the Rockies are more robust towards cold weather than ones in Texas?

**JILL BECKER:** So--

**J. CAVANAUGH:** You might not [INAUDIBLE]

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**JILL BECKER:** So I think that there-- let's just say that there are differences. There are anticipated differences in how you build your system. And I think the word that we heard after the winter weather event was weatherization. Is the Texas system-- is the-- are the southern systems winterized appropriately? I can't speak to that. I will just say that our system where we serve is based on the conditions that we serve in. Gas here, a gas system here because of the winter weather that we have is going to have to be a different system than Florida that doesn't typically see 30 below, you know. So I can't offer you the details around that other than from an operational perspective, those systems are going to reflect the conditions that they have to operate under.

**J. CAVANAUGH:** Normal conditions.

**JILL BECKER:** That's right, normal conditions.

**J. CAVANAUGH:** Thank you.

**BOSTELMAN:** Senator Groene.

**GROENE:** Thank you, Mr. Chairman. Would you agree or am I wrong by this statement that the huge spike in natural gas prices originated with the electrical industry's problem and use?

**JILL BECKER:** During that, during that time? I can't say. I can't pinpoint what exactly caused it, but it was certainly a supply and demand issue. There was not enough natural gas, not enough.

**GROENE:** What-- maybe I missed it. I was watching it. But what do you expect the price to do this winter?

**JILL BECKER:** So we have seen over the past, especially two months, some of the industry analysis. And by that, I mean, American Gas Association has provided some information, but particularly groups like the Energy Information EIA. So A is probably association. We, we expect prices to go up. We are seeing gas prices go up and expect them to go up over the winter months.

**GROENE:** How much have they come down since the crisis, I mean, compared to last year? I mean, I had heard \$1.50 to under \$2 for cubic foot or whatever it is, and now it's over \$6.

**JILL BECKER:** Yeah, I don't know that I can answer that, Senator. I would really feel more comfortable having a gas supply, really speak

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to how low those have gotten, but we are certainly seeing higher gas prices now, higher than we saw in July.

**GROENE:** So the expected energy price increase to the consumer, is that a cost average from what, what you had to pay last winter included?

**JILL BECKER:** It is not. We flow through whatever gas prices we pay, it is without markups. So on a monthly basis in front of the Public Service Commission, we provide a monthly called purchase gas adjustment. We adjust that price on a monthly basis based on the price of the gas that we pay.

**GROENE:** I don't know if you've been around long enough to know the history. Over the last 30 years since the conversion, I think I'm covering it, the area that your conversion of coal plants to natural gas, do you know what the percentage breakdown is of how much natural gas production is used for electrical energy versus fertilizer and chemicals and synthetic plastics and home heating? What part of the pie has been [INAUDIBLE]?

**JILL BECKER:** I don't know that, Senator. I could probably find some information to share with you, but I could not tell you off the top of my head. Really, you're asking how much natural gas is used by industry.

**GROENE:** What I'm getting at is the cause and effect of this mad rush to convert coal plants to natural gas has affected more than just electricity. It's affected the farmer. They're talking \$1,300 a ton for anhydrous in the spring. If you know anything about fertilizer prices, that is amazing. They're talking about little old ladies being out of their homes because they can't afford the heating bills, because an industry decided to convert without no rational economic reasons to a different fuel supply. And that does concern me with the big picture. Thank you.

**BOSTELMAN:** OK, I'll make a comment. It's in your binder to SPP response, just so you know where that's coming from. It's from the second question there. I was hoping that [INAUDIBLE] would still be here, but it's not. And I know you can't speak specifically for the industry. But in SPP's recent responses committee regarding natural gas generation, they responded with the following and I quote, This type of study requires detailed information of gas demand for home heating gas, demand for industrial customers and power plants, as well as available gas supply to the area. This is information that is not

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available to SPP, and SPP does not have the authority to request that data, end quote. And we heard Mr. Nickel speak of it earlier. My question is whether the industry has been contacted and you may not know this, but whether the industry has been contacted with regard to this issue. And would the industry be open to working with SPP to better understand natural gas generation supply capabilities? And if so, who would that be that we would contact, if you don't know?

**JILL BECKER:** So there are several natural gas distribution companies in the state. Black Hills is one of them, Metropolitan Utilities District is another, Northwestern is another one. For a public power district looking to have natural gas generation, they could also be talking to the natural gas pipelines. They've got to talk to us as their partner, right? And so I think to make that happen, everyone is going to have to make sure there's supply there.

**BOSTELMAN:** Yeah, yeah. Sorry to clarify my question, because question came to what we're talking about. They're talking about down in the South where there is no gas.

**JILL BECKER:** OK.

**BOSTELMAN:** And they don't know. So they're like, we don't know. We don't know who, you know, residential, commercial, whatever, we don't know any of that information. We don't dictate whether that is or not. But it seems to me like there would be someone in the-- in the natural gas world that they could coordinate with and ask those questions. I would think they'd be more than willing to discuss that.

**JILL BECKER:** Sure.

**BOSTELMAN:** And I don't know who that would be and I could relay that to.

**JILL BECKER:** So I'm trying to think how to answer that. So as natural gas pipelines are regulated also by FERC. Distribution companies are typically regulated by their states.

**BOSTELMAN:** Yeah.

**JILL BECKER:** And so I guess that's going to be my answer is that if you're wanting to talk to the distribution companies, it's going to be within the state.



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**BOSTELMAN:** OK. So the other question, only other question I have is what we're hearing is that fossil fuel generation is going to be replaced by natural gas nationwide. If that happens, will Nebraska have enough natural gas to supply to both residential and commercial customers?

**JILL BECKER:** Yeah. So again, we are the distribution provider. We would want to ensure that we have that gas to supply it to those customers, whether it's a residential customer, whether it's for generation. In, you know, if it's for generation, there's going to be some contracts in place there. There's going to have to be some discussion around the needs of another utility or whomever that might be.

**BOSTELMAN:** Well, right. But as we look at as a February event, heat-- gas first goes to residential, commercial second. And what I'm hearing from SPP and others is that we didn't have the, the gas in the southern part of the state. We didn't have the gas. I think in Nebraska, there's been times that maybe we didn't have that supply. And what we hear on the national level is we're wanting to reduce the number of, of drilling of that. So it seems like our natural gas supply may be shrinking, if you will, or be more competitive. So the price is going to go up and is there going to be enough in general?

**JILL BECKER:** So I will say this. Just because I happen to have this with me. The American Gas Association is-- has a-- I want to make sure this is affiliated with it-- has a committee. It's called the Potential Gas Committee, and they estimate those natural gas resources. So that might be something that you're interested in, Senator. They specifically look at that amount of gas supply that can be used. And what they are anticipating for-- from a usage standpoint. So I would offer that as a resource just because I think you're asking the million dollar question, and I'm not quite sure that I can answer it. But I think that's it, right? Are we going to have enough supply to meet the demand? And the answer is yes. From our natural gas industry, the answer is yes. We've got to make sure how to get it to the industry and the residential customers that want it.

**BOSTELMAN:** My understanding, though, when we talked previously, there were some concerns over the summer where some shortages were in there. So that's not necessarily always the case.

**JILL BECKER:** We definitely saw a lot of usage over the summer. I will, I will agree with that. There is some seasonality to the use of

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natural gas. Obviously, we have a lot higher use generally in the summer from those residential customers. But as industries use more natural gas, I think then we-- we may see less of a peak and to use your term earlier, more of a baseload, maybe just that overall consumption just goes up.

**BOSTELMAN:** OK.

**JILL BECKER:** That's entirely a possibility.

**BOSTELMAN:** OK. Any other questions? Seeing none, thank you for coming today.

**JILL BECKER:** Thank you.

**BOSTELMAN:** Appreciate your testimony. Next, we'll have Mary Harding from NPPD, chair of the board of directors. Good afternoon and welcome.

**MARY HARDING:** Good afternoon. How are you?

**BOSTELMAN:** We're doing great, thank you. Please state and spell your name when you're ready.

**MARY HARDING:** Let's get this all set up. Good afternoon, Chairman Bostelman, members of the Natural Resources Committee and Senator Brewer as well. My name is Mary Harding, M-a-r-y H-a-r-d-i-n-g. This year, I serve as chair of Nebraska Public Power District's Board of Directors, and I have been a member of NPPD's board of directors since January of 2003. NPPD is a public corporation and a political subdivision of the state of Nebraska. It operates an integrated electric utility system, including generation, transmission, and distribution facilities spanning all or parts of 86 of Nebraska's 93 counties. And we do so with approximately 1,950 employees. NPPD's diverse power resource mix produces energy from a variety of fuel sources, including coal, nuclear, natural gas, oil, hydro, wind, and solar. NPPD operates approximately 5,350 miles of transmission and approximately two hundred-- two thousand five-- 2,500 miles of distribution lines. Revenues are primarily derived from NPPD's wholesale contracts directly with 46 municipalities, 23 public power districts, and 1 cooperative. We also serve 77 communities at retail. NPPD provides electricity directly or indirectly to more than 400 Nebraska communities. Supplemental electricity and transmission services from NPPD benefit nearly every Nebraskan. Our 11-member board is elected from within our chartered territory, which is comprised of

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our direct and indirect wholesale customers and our retail customers. The board, in coordination with president and CEO, establishes the strategic direction for NPPD. The board as directed has developed numerous strategic directives which set forth the policy principles for the board and help delineate board and management responsibilities. Operational responsibilities are expressly delegated to the president and CEO and his leadership team. It's my understanding that the committee previously received extensive documentation regarding the February weather event and the decision of the three largest utilities to join SPP. So as requested, I will be answering the questions raised by the committee in the letter, the chairman's letter to me dated October 20. The first question was what, if any, inquiries or investigations did the NPPD Board of Directors do in response to the February 2021 blackouts? So the board was kept apprised by management during-- prior to, during, and following the extreme weather events and the consequences for the electric system. The board held two emergency meetings, one on February 13 and one on February 15 to approve the purchase of additional natural gas for our generation facilities and to receive briefings on generation status and system status. While the brief and limited distribution outages during Winter Storm Uri were unprecedented and certainly not something we ever want to experience again, the actions taken by highly trained transmission system operators under the extreme conditions did precisely what they were designed to do in order to prevent widespread, uncontrolled outages that could have lasted days rather than minutes. NPPD employees and our physical assets performed commendably during the event. It's a testimony to our employees' training and dedication to the customers they served. The board has relied on work done by SPP, FERC, and NERC, which all addressed fundamental fuel and generation issues to assure reliability well beyond the NPPD board's jurisdiction. NPPD management engaged with its customers to find ways to improve communications and operational coordination should an event like this ever happen again. And the board has been kept current with the implementation of communications and coordination improvements identified by management as a result of this review. Question 2, What impact did the board find that the event had on the provider, which I assume you mean us, NPPD, its service area, and NPPD ratepayers? First and foremost, the February extreme cold weather event created a major disruption in the supply of natural gas and the availability of natural gas fired generators, which were not adequately winterized in portions of the SPP footprint beyond Nebraska? This was the largest cause of generation shortage, with nearly one half the accredited natural gas generation within the SPP

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footprint being unavailable. Coal and nuclear energy are two of NPPD's largest generation sources, and they remained operational throughout the event to the benefit of our customers and the region. NPPD's natural gas and fuel oil fired resources also operated throughout the event. NPPD, like all system operators, was required to curtail loads on February 15 and 16 for limited amounts of electricity and time. The curtailments on the 15th totaled 1.5 percent of load and 6.5 percent on the 16th. The rotated outages averaged approximately 40 minutes on the 15th and under an hour on the 16th. Individual circuits may have experienced longer or shorter outages. As noted in the previous response, there were learning opportunities arising from the event. We recognized shortly after the event began to unfold that there were opportunities to improve communications and to improve with our customers, and also to improve our knowledge regarding the types of load on different electrical circuits and those of other utilities that are served by NPPD's transmission. NPPD convened meetings with customers soon after the event and developed in coordination with our customers, improved processes for addressing these issues, should there ever be a future need to curtail load. Despite the difficulties caused by the weather event, there was a financial silver lining in this event for NPPD customers. Due to the low cost of our energy mix and the performance of our generation, NPPD produced over \$150 million in market revenues, which will offset costs for customers on both the long-term and short-term basis. Question 3, have there been any recommendations for change discussed by the board as a result of the event? And how do you intend to keep this same type of event from happening in the future? The board has added resiliency to critical factors that we must consider in addition to reliability, affordability, and sustainability, which means we will pay increased attention to the ability of our system to ride through and respond to and recover from unanticipated events or acts of God. Question 4, does the board have any future generation plans in place for the next five to ten years? NPPD regularly explores new generation options based on several factors, including new technologies, the expected operational life of current generation, load growth, and other factors. NPPD began development of our next Integrated Resource Plan this fall, and it looks at future generation needs. An Integrated Resource Plan is completed by NPPD approximately every five years to meet Nebraska's statutory requirements and also our obligations under our power supply contract with the Western Area Power Administration. There are many important factors to consider in the next five to ten years. For example, NPPD currently has a request from a very large end use customer served by one of our wholesale customers for a significant

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supply of renewable energy, which is being explored now through an RFP process. In summary, I'm proud of the performance of the NPPD team during this unprecedented event. They acted quickly and decisively to maintain a strong supply of electricity under very challenging conditions. They worked diligently to manage short duration controlled outages in order to avoid potentially catastrophic, uncontrolled outages. While we are certainly not pleased that some customers were briefly without electricity during the extreme weather conditions, our employees were following emergency plans and federal regulatory requirements, which prevented more serious consequences. I'm happy to answer any questions you might have--

**BOSTELMAN:** Thank you,--

**MARY HARDING:** --to the best of my ability.

**BOSTELMAN:** --Chairman Harding. Thank you. Are there questions from committee members? Senator Brewer.

**BREWER:** Thank you, Mr. Chairman. All right. Where do we begin? I prepared so much for Tom Kent. You're here instead.

**MARY HARDING:** You've really got a downgrade, Senator.

**BREWER:** No, no. Let's see. Let's just run through and understand part of what we got to do here is we've got folks that are concerned and we've got to figure out how to kind of give them some peace of mind. This happened. It may be a rare thing, but if you're lambing or calving and it's the middle of February and it's bitter and, you know, I would hope some made a conscious decision to get some type of additional backup generation system so that they're not solely dependent on that. But yet we don't want them to have a mindset that they can't depend on NPPD--

**MARY HARDING:** Absolutely.

**BREWER:** --because we've, you know, you've got a pretty good track record. So with that said, let's just kind of slow walk through some things so we figure out where we're at. Now do you think that-- well, first off, so we understand your limitations on the power with, say, solar energy, which is a small package I understand, but with any volume of snow, it's pretty hard to remove that in a timely manner. So it's got some limitations there. Granted, when, when the sun's shining, it's warm and all, it's probably a pretty good source. Right now, you know, a lot of the wells out in my district are run off solar

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energy, and they work very well and they're very pleased with. With that, we'll hop over and look at wind. And again, we're going back to this-- the issue of, of dependability, reliability. You know, the affordability part of that comes from government subsidies. You know, that's, that's the secret to wind energy there. And if we're going to be in a position where we've got to worry about people's livelihoods, we have to address that. Now since you've been on the board through the 2000s and, well, what was it, 2--

**MARY HARDING:** 2003.

**BREWER:** Yeah, there you go, January 2003. You've been through this whole morphing to, to get into the, the renewables. Is there a point temperaturewise where wind tower is no longer effective, where there has to be special considerations taken in order for it to function properly?

**MARY HARDING:** So you're asking an engineering question of a secondary educator, but I will give you my best.

**BREWER:** OK.

**MARY HARDING:** I'll give you my best understanding, which is that the windfarms in our area tended to continue to perform as predicted and expected because they are winterized. And in other areas, they are not because in Oklahoma or, you know, Texas, north Texas, where you don't experience those cold temperatures as often. So that's my understanding. I'm going to-- I'm going to preface any other comments with if I'm wrong, somebody in the room will get back to you. OK?

**BREWER:** Well, and I can-- I can talk with, with Mr. Kent later and [INAUDIBLE] this. But we're just trying to set some groundwork here so we, we understand where we're at. So as long as the wind blows, the wind really isn't a huge factor. Whatever you're projecting is probably going to be there. That's the only variables is getting the wind to blow when you need it to. The wind, the solar we've talked about. You guys had no real issues with natural gas as far as having it available or did you?

**MARY HARDING:** We held an emergency board meeting on February 13 to approve the acquisition of more natural gas. We were spending over our approved budget amount at that point to supply to-- to have a supply of adequate gas.

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**BREWER:** So you were able to do it, it was more expensive and you, you were able to make the decision, get it put in. And it really wasn't a factor in your ability to produce and distribute electricity in a timely manner. It's just you did it at a higher rate.

**MARY HARDING:** I think you're correct.

**BREWER:** Good. All right. We're on the same sheet of music here. Now coal, whatever you were using, say in December, January, you were using in February, and that didn't really change throughout this whole process. So it kind of went through all of those. Cooper was kind of, according to SPP, the shining star, because whatever they said they were going to give, they gave it to them. And evidently it was, it was needed and timely. If we look at down the road, obviously the board will make a decision on what that new snapshot is going to look like. What's your thoughts? What is kind of the guiding light for your board? How do you see that developing?

**MARY HARDING:** So in terms of what's the resource mix going to be?

**BREWER:** Right.

**MARY HARDING:** At this point, just going into an Integrated Resource Plan, I'm going to say we are basically generation agnostic. We set forth expectations about reliability, about affordability, about sustainability, and now about resilience. And so what we're going to be doing is looking at the attributes of any particular generation rather than what the fuel source is. I can't tell you what management's going to come through with. I can say we have done, in my opinion, an outstanding job of exploring all kind of emergent technologies and opportunities. We haven't implemented very many of them. A lot of them turn out to be they look better in the store window than they do when you take them home. So we haven't implemented a lot of those, but we continue to keep looking at what's available.

**BREWER:** And with that, I assume that your staff probably helps to prepare and educate you on, for example, I made the comments about this nuclear conference we had and how-- and actually it was, I think everybody, most of the people in the room were at that. I think that took us from virtually no knowledge to a point where we started to feel comfortable with the possibilities there. Is that kind of part of that package you're looking at down the road because it takes a while to, to take that from nothing to where you're actually having a facility that you're using?

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**MARY HARDING:** Oh, so are you asking is nuclear a part of [INAUDIBLE]

**BREWER:** The, yeah, I guess more the new nuke, the--

**MARY HARDING:** I can't answer that question. It's in the realm of possibility for us. But whether it actually becomes something we decide to implement is going to depend a lot on expense, on availability of fuel, on transmission availability. There's the one thing I have really learned about the utility industry is that every generation asset is really site specific, what works and what doesn't. You can't just take something whole cloth and move it from one location to another. So is the board open to adding more nuclear or certainly extending the life of Cooper Nuclear Station? I would say that's definitely a yes.

**BREWER:** All right.

**MARY HARDING:** OK.

**BREWER:** You've been very helpful. Thank you.

**MARY HARDING:** Well, you're welcome.

**BOSTELMAN:** Senator Groene.

**GROENE:** What would you say? NPPD came out and gave a presentation about 50-year plan to go zero carbon emission. Was that a directive of the board? Or is that something management is pursuing?

**MARY HARDING:** Senator Groene, for the last two years, we have been examining a decarbonization strategy. And I really have to say it's in partnership, management and the board together. Ultimately, it's the board's responsibility to adopt a statement and a directive. But nearly everything we do is heavily informed by management as well, and we rely on their expertise a great deal. What we found--

**GROENE:** What--

**MARY HARDING:** Oh, go ahead.

**GROENE:** So why do we have elected board if you don't give them direction? Is the direction of the zero carbon from the board? Because we have a good system in place now, a mix of coal and natural gas and nuclear. I mean, I understand the pressures from the federal government.



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**MARY HARDING:** Yeah, what we found is and from the federal government, the regulatory pressures. There are also commercial pressures. We find that financial rating agencies are listing carbon risk when they issue bonds and bond ratings. We're finding that a number of commercial ventures: Wal-Mart, Pepsi, Target are setting zero carbon goals, so it affects kind of the demand of what our end-use customers want. So I have to say establishing a strategic directive is the work of the board.

**GROENE:** All right. Thank you. So what do I tell my constituents out there that live on coal, the trains, Sutherland power plant? But I do have a question on that. Do you know, which I didn't ask the individual from Southwest Power Pool, he said 23,000 was expected from coal and 17,000 was delivered systemwide. What I believe I'd heard, it wasn't Gerald Gentleman that didn't supply what they were expected. Is that true?

**MARY HARDING:** No, we continued to operate.

**GROENE:** So we were at full capacity and what we promised we delivered.

**MARY HARDING:** Absolutely.

**GROENE:** That's what I thought. So it was coal plants in other areas. Thank you.

**BOSTELMAN:** Senator Cavanaugh.

**J. CAVANAUGH:** Thank you, Chairman Bostelman. Thank you, Ms. Harding, for being here. So when you did the curtailment, I guess I'll do like a complete 360 change from whatever everybody's been talking about, the shed load, shedding load of the 1.5 percent and the 6.5 percent, was that predetermined who would get shed? Or how was that decided what the 1.5 percent is comprised of and the 6.5 percent?

**MARY HARDING:** Well, so we were told how much load to shed by SPP, and then we have emergency contingency plans in place that were brought out to determine where we would go to curtail load and how we could best meet this requirement. I think there's always some contingency planning in terms of what's going on today that comes into shaping that emergency plan and making it more accurate and appropriate for the specific time. But that's how that happens. We have an emergency plan in place.

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**J. CAVANAUGH:** So before you get the call or whatever from SPP, you could probably say who exactly, which house, which facility would lose power first?

**MARY HARDING:** So we're working at the level of electric circuits, so we'd be talking about neighborhoods or regions.

**J. CAVANAUGH:** Right, yeah.

**MARY HARDING:** And I really want to get more information from management to give you the best exact, you know, appropriate answer. But there is a hierarchy in place to say where critical loads are. We don't want to turn off a hospital or a first responder's office. So there is a hierarchy that management follows. And one of the things we learned out of this event is that we had to do a better job of communicating with our wholesale customers about what users are on which facilities so that we-- and we need to do it, you know, updated on a more routine basis than we had previously perhaps.

**J. CAVANAUGH:** Is it possible, I mean, since there's a hierarchy and a structure that the same circuit could get, be the first one turned off--

**MARY HARDING:** Every time?

**J. CAVANAUGH:** --each incident?

**MARY HARDING:** Anything's possible, but I think we made an extreme effort to avoid inconveniencing the same people twice. I know that it did happen, but we did our best to avoid that.

**J. CAVANAUGH:** Thank you.

**BOSTELMAN:** Senator Hughes.

**HUGHES:** Yes. Thank you for being here today. So I'll ask you the same question I asked Mr. Nickel. Do you know how many days of coal you have in stockpile [INAUDIBLE]?

**MARY HARDING:** I'm sorry, I can't tell you.

**HUGHES:** OK. That's fine.

**MARY HARDING:** It's a big pile.

**HUGHES:** And a lot of capital wrapped up there.

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**MARY HARDING:** Yeah.

**HUGHES:** And has NPPD looked at carbon capture?

**MARY HARDING:** Yes, sir. We actually have ongoing research funded by the Department of Energy, the DOE, on the practicality and the feasibility of carbon capture at Gerald Gentleman Station.

**HUGHES:** OK. Do you have any idea of where? You know, recently they announced that I think the Trailblazer Pipeline was going to be converted from natural gas to CO<sub>2</sub>, which doesn't run too far from Gerald Gentleman. I'm assuming that would be a possibility. Or have you gotten that far in the thought process?

**MARY HARDING:** As the board, we're not that far along in terms of what we have been briefed on.

**HUGHES:** OK, thank you.

**BOSTELMAN:** Senator Wayne.

**WAYNE:** I'm just curious in the last two years, how many board votes have been split votes?

**MARY HARDING:** Several.

**WAYNE:** --because it seems like you've had some controversial stuff, so I'm just wondering.

**MARY HARDING:** Only several.

**WAYNE:** Only several.

**MARY HARDING:** Only several. We work hard to build consensus before we get to a decision point.

**WAYNE:** Do you consider your model board led or CEO management led?

**MARY HARDING:** I consider it a hybrid. I am an actively engaged board member. And so I think-- I think our CEO will tell you he spends more time with the board than he anticipated he would before he became CEO. And we have a number of board members who are deeply engaged in the business of the utility.

**WAYNE:** What is your--

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**MARY HARDING:** But there's a, I'm sorry.

**WAYNE:** Go ahead. You're fine.

**MARY HARDING:** There's a line, you know, and when we get into technical issues and operational issues, that's not our business and our job is to set boundaries, guidelines, expectations. Our job is to audit to be sure that those boundaries, guidelines, expectations are met. And our job is to hire the person to lead that effort.

**WAYNE:** So if you want to do a nuclear initiative, where would that-- where would that start?

**MARY HARDING:** That would start with our Integrated Resource Plan that just got started this fall. So what happens in that is that a wide variety of options are examined from a technical standpoint and from a financial standpoint, a number of other issues, reliability and cost. So all of those options that might be possible for us at this time are examined by management and sometimes by outside consultants, too. We've brought them in. And then the recommendations for a plan to move forward over the next five years is brought to the board.

**WAYNE:** How much debt do you guys currently have?

**MARY HARDING:** Boy, we've been buying that down really steadily. I'll have to get back to you.

**WAYNE:** When you say buying it down, where does that, where does that, where do those dollars come from?

**MARY HARDING:** All of our revenue comes either from ratepayers or the market, SPP market.

**WAYNE:** Did the, did you guys make money during-- on the market during this time?

**MARY HARDING:** We did.

**WAYNE:** And would that cycle back into your operations or where does that go?

**MARY HARDING:** Well, I think the deci-- the final decision is scheduled to be made next month. But at this time, my anticipation is that half of that money will be set aside to be returned to wholesale customers so they can use that directly to lower their costs to their end users

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and ratepayers. And half of it will be used by us to lower future operating costs.

**WAYNE:** So during the rolling blackouts and the time that the areas were off line, were you selling during the market during that time?

**MARY HARDING:** I can't answer that specifically. I need to get the answer for you.

**WAYNE:** OK. Thank you.

**BOSTELMAN:** Senator Groene.

**MARY HARDING:** He's back there taking notes about what I said  
[INAUDIBLE]

**BOSTELMAN:** I'm sorry, excuse me.

**WAYNE:** I appreciate it.

**MARY HARDING:** Thank you.

**BOSTELMAN:** We can-- we can follow up with you or work with management with that, so you're fine. Thank you.

**GROENE:** Right now, people in Nebraska own their production capacity. They own Gerald Gentleman. They own Cooper. They own all of it. Because of the way the federal subsidies run on the windmills, it'd be foolish for NPPD to build a windmill field because you don't qualify for the federal subsidies. So as you shift away from our ownership of our production to somebody-- buying from somebody else's windfarm, how does that fit into public power's philosophy of we own it, we use it? That doesn't look like a good model to me.

**MARY HARDING:** So I think our board would agree with you. We just recently received two consultants' reports that recommended that we could go pretty fast on decarbonizing our generation mix if we move to relying on the market for energy. And when we received those reports, pretty much around the room everybody went, no, we're not going to give up our ownership of our generation assets. That control is really important, we feel, to our ability to serve our customers well. So in terms of what the mix is going to be and whether we have, you know, power purchase agreements from other, other energy companies for wind, I think the process is going to be somewhat like how you build your own retirement portfolio. You know, you might decide you want 50

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percent in bonds because it's very safe and secure and you want to take a risk a little bit here so that the portfolio gets managed that way.

**GROENE:** How much right now of our usage in production, our usage is production by NPPD versus purchased outside the market? And I'm assuming all the wind is purchased outside the market. I know Custer Power has their own pow-- well, they don't really.

**MARY HARDING:** It's a PPA I think. Yeah.

**GROENE:** So what? What is it now?

**MARY HARDING:** Well, I can't tell you exactly how much we get from the market, and I did ask, you know, can we-- can we break down how much we get from the market is from renewable energy and how much is from other sources? And the answer is we can get that information annually.

**GROENE:** Do you own the Atkinson windfarm?

**MARY HARDING:** Yes.

**GROENE:** So NPPD did build their own--

**MARY HARDING:** We did.

**GROENE:** --without federal subsidies. Was that very cost effective?

**MARY HARDING:** It was before I came on the board, but at that time it looked like that was a growing trend for the future and we kind of dipped our toe in.

**GROENE:** And so how do you bid wind energy into the market that we own with no subsidies at a lower-- at the same cost as those farms that can factor in the federal subsidies? It sounds like we have a heck of a disadvantage.

**MARY HARDING:** Well, which is why we haven't built any more windfarms.

**GROENE:** So other windfarms are running. That one's shut down because we can't be the lowest cost.

**MARY HARDING:** I'm not sure that's the case. It may still bid in at a low cost and be taken up by the market.

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**GROENE:** How can it? It can't offset the costs. The other ones can go below zero cost because the subsidies are so generous,

**MARY HARDING:** But it's-- the market is based on fuel cost--

**GROENE:** I understand.

**MARY HARDING:** --at this time. So our fuel cost on those is the cost of the wind. So that's I mean, you got on to the idea of capacity markets and, and having credit given for dispatchability, if you will, being available all the time when needed. I think that hasn't worked very well in other RTOs yet, but it's something I think we would welcome because we're in a position to benefit from that, my opinion only.

**GROENE:** It just seems to me if we lose, if we start buying instead of producing ourselves [INAUDIBLE] reliability. Thank you.

**BOSTELMAN:** A few questions for you. [INAUDIBLE] I think the discussion you and Senator Groene had a little earlier. When I talked to your CEO and your management, they say the board directs us what to do. You seem to say that you don't. So which is it? Because--

**MARY HARDING:** [LAUGH]

**BOSTELMAN:** I mean, the chairs are here for a reason. We talked to the CEOs back earlier in the year, and we've talked with them since. But I'll tell you, when I hear from CEOs and others, they say that the board tells us what to do. They direct us and we do what they say. There's nothing we can do. They're the ones that tell us what to do and we have to do that. So could you explain? Can you help me understand that relationship?

**MARY HARDING:** Well, let me try again.

**BOSTELMAN:** Yeah.

**MARY HARDING:** Let me try again, because there's a, there's a line of-- between the authority where in terms of policy, that's our job. Operations, that's not our job. So there's that line. We adopt policy. We at this time have, I believe, 11 strategic directives, and I know we're working on 2 more. So that's our job, but we don't do anything in a vacuum, Senator Bostelman, because I mean, this industry is so complex. And with one exception on our board, every last one of us is an amateur. So we definitely want the technical input and the expertise of management to help us in shaping policy. It's our job. We

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can't pass it off to somebody else, but we don't want to make that decision in a vacuum.

**BOSTELMAN:** So if the management doesn't like your policy and they don't want to do it, you can fire them, right?

**MARY HARDING:** Sure.

**BOSTELMAN:** So then they have no choice. They need to do your policy.

**MARY HARDING:** I suppose, I suppose in worst-case scenario, we could come down to a situation like that.

**BOSTELMAN:** Sure. So I attended your forum in Seward that you had on decarbonization and what was disappointing to me at that thing, over half the people that you heard from that you, you as in, not you specifically.

**MARY HARDING:** The group.

**BOSTELMAN:** I'm not trying to say that. But the responses that, that was received and was recorded at the forum, at least half the people were not ratepayers. And that bothers me a bit. And, and, and I see that happening over and over again is that your ratepayers aren't being heard, but what's being heard is those from outside of the area coming in and trying to influence. And that's more of a comment. If you want to speak to that, that's fine. But that's a little bit-- that was-- that was bothersome for me to see that happen.

**MARY HARDING:** Just-- I understand your concern. Just to be clear, we did identify to the best of our ability the input we got from ratepayers within our service territory and people who we could identify who weren't from within our service territory. And then there's another group that we don't know if they are or not.

**BOSTELMAN:** So when I was there, there was a survey that was getting and everybody there that-- that was there, ratepayer or not, contributed to that and that scored and you used that and that later came out in a report. So then you didn't do that.

**MARY HARDING:** But it is-- it is a weighted consideration, sir.

**BOSTELMAN:** OK. So your consultant now has told you that you need to stop generation of baseload, you need to buy off the grid. So with that comment I have, that specific fact that your consultant has told



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you do this, if NPPD-- NPPD's future plans to point to zero carbon goals and include divestment of fossil fuels, Gerald Gentleman Station in Beatrice and other facilities must be shut down. The concern, of course, is that Gerald Gentleman Station, for example, seldom supplies less than one half of the state's electricity. As a load serving entity in the Southwest Power Pool, what would NPPD replace Gerald Gentleman Station with? And how does it intend to maintain reliability and affordability for residents in Nebraska?

**MARY HARDING:** Well, you're way ahead of me on that. I can't tell you the answer to that. At this point, we're still deciding whether to adopt a zero, net zero carbon goal. I want to be clear, we're not talking about producing zero carbon. That is an option, but we decided to go with net zero so that we could allow for new and emerging technologies like carbon capture, like sequestration in the soil, working with agricultural entities. We, you know, we wanted to be as broad as we possibly could be in setting that goal.

**BOSTELMAN:** Well, what would be the-- what would you replace that with? I mean, even--

**MARY HARDING:** I cannot-- I can't answer that question. And we're not-- we're not considering at this point saying Gerald Gentleman or any other asset is history. What we're saying is that we believe in the future we're going to need to continually reduce our carbon footprint in order to meet the business risks that we've identified over the last two years in our research.

**BOSTELMAN:** So what is NPPD's definition of a business risk when describing CO2 as a pollutant?

**MARY HARDING:** A couple of things. One is regulation. Since the Nixon administration, the Clean Air Act is ratcheted up every five years and becomes incredibly more expensive each time. I think the next step for Gerald Gentleman in one scenario with the Clean Air Act being ratcheted up is that we have to put scrubbers in and that's more than a billion dollars. So that significantly changes the economic equation for that asset. That'd be an example of a business risk.

**BOSTELMAN:** The last comment or question I have is and you mentioned it before and I appreciate the comment you made. And I would encourage you to do more of it because we did see a significant cost to ratepayers across the state in February, and NPPD did benefit financially by having generation you could sell onto the market by--

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by quite a bit of money into the over 100 million or whatever it was. And I would encourage that there would be strong emphasis early to help our ratepayers out, you know, to help, help those out there that, that have a significant-- had to pay a significant amount to this, that some way you figure out to do the best benefit you can, the most benefit you can to your ratepayers. So--

**MARY HARDING:** Thank you. I really appreciate that.

**BOSTELMAN:** --I hope you can do that.

**MARY HARDING:** Of course, it's kind of the fundamental of public power, isn't it?

**BOSTELMAN:** Well, I hope so. But you also, I guess that is the key is that public power is owned by the ratepayers. And so you probably have about a half a billion dollars in the bank that's the ratepayers' money that you keep. So should that come out, my question would be, should that be then come out, be given back to the ratepayers instead of keeping in the bank, if you will?

**MARY HARDING:** You're really going deep in the weeds, Senator Bostelman. Some funds that we have in the bank are required by federal regulation, for example, the nuclear decommissioning fund. There are other funds that we have opted to create, such as the Fossil Decommissioning Fund, because eventually we know there will be some cost at that point. We don't know what the point is yet, but we know we want to be prepared for that in order to avoid rate spikes. You know, I think we're really proud of the fact that we haven't had a retail rate increase for eight years now and that our wholesale rates have been flat for seven years and we look forward to that again next year. So we have to have a certain amount of reserve in order to maintain our rating with the bond agencies. But this 150 mill-- this \$150 million, it's going back to either pay off debt or return to the wholesale customers.

**BOSTELMAN:** OK, thank you.

**MARY HARDING:** Yeah.

**BOSTELMAN:** Senator Moser.

**MOSER:** I-- according the way I remember it, I think that-- I think NPPD sells all their power to the SPP and that they buy it back from the SPP.

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**MARY HARDING:** That's how it works, to my understanding now.

**MOSER:** So that they can supply it when it's economically wise for the district to sell it and they can buy it when it's economically feasible to buy it cheaper on the-- on the market or if they need to for some reason. And I think you're wise when your consultant said that you should rely more on the market than your own generation, that we keep in mind some of those people who were buying power from public power. And then they went on their own and bought power on the open market because it was cheaper. And then all of a sudden we had this catastrophic, cataclysmic, however you want to describe it, event and costs went crazy. And some of those who went off on their own kind of carried their own insurance had some big losses.

**MARY HARDING:** You're right. You're absolutely right.

**MOSER:** And, and I think I can, well, this is dangerous any time I try to summarize our, our advice to the board. But over time, public power was interested in providing electricity. This is my suggestion. You can apply whatever filters to it you want, but it was primarily interested in generating power at the lowest possible cost and, and in the most reliable manner. And then over time, public attitudes toward power have changed and gotten greener. And so we're-- now some boards are getting more interested in solar and wind and other forms of power because they feel like that's more responsible ecologically. And I think that some of us, and I would say I'm probably one of those too, are concerned about reliability. And when we have these cataclysmic events that we have base generation, as Senator Bostelman has talked about, to help us keep the system in balance. So if there's anything you can take back to your board, I would say, yes, it's wonderful to, you know, attempt to be green and be on the cutting edge for what green energy can do to our conscience. But in the long run, we all like to flip the switch and have the lights come on, and--

**MARY HARDING:** We're not an optional service. We have got to be there, you know, and it's been our motto for a long time, always there when you need us. So, so thank you for the advice. I'll take it back.

**MOSER:** Well, it was free.

**BOSTELMAN:** Senator Wayne.

**WAYNE:** So where I'm struggling with all of this and I'm asking the same question to anybody from OPPD is what do you say to the person

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who lost part of their livelihood or their livestock that I heard out in the Third District, while at the same time during those outages, you are making money?

**MARY HARDING:** Well, that's pretty difficult, you know, running a public service because sometimes individuals pay a much larger price than the rest of the, the balance of the service territory. But what I would say is I just attended a conference and heard from two providers of electricity, two different utilities in Texas, and the session was called What We Learned from the February Event. So what I would say to the individual who regrettably lost livestock is instead of 40 minutes or however long it was minutes, you didn't go out for three or four days. We prevented that and it was clearly through our participation in the power pool and the excellent skill of our operators that that happened.

**WAYNE:** But we had enough power in Nebraska to keep all that going. We said, in fact, you guys were told to scale down twice, once on the 15th and once on the 16th. So power in Nebraska wasn't the issue. My, my second question is not necessarily, but it is kind of connected, not necessarily connected. I see lobbyists from all the public powers come down here and lobby for or against bills. But I've never seen a public vote from a board on which bills they want to take up to lobby. I say that because when I was on the school board, the one thing we did differently is we gave guidelines on what we were going to support and what we were going to tell our lobbyist. Why is it, why is it that you guys don't?

**MARY HARDING:** We do. Every year we do. We adopt legis-- a legislative resolution with guidelines. And if there are bills that are in a gray area, that staff's not clear whether it's inside or outside the lines, they bring it back to the executive committee for consultation and direction.

**WAYNE:** The executive committee, that's not a public vote though, not a public--

**MARY HARDING:** Well, the adoption of the resolution is a public vote.

**WAYNE:** So if there was a-- if there was a bill introduced to say we should leave the SPP, where would that fall on your current guidance and procedures?

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**MARY HARDING:** I don't believe we have a provision about participating in a market in our legislative resolutions at this time.

**WAYNE:** Do you have a position on whether you should continue in the SPP?

**MARY HARDING:** In my personal opinion?

**WAYNE:** Yes.

**MARY HARDING:** Yes, I definitely think we should.

**WAYNE:** Do you have a resolution on it?

**MARY HARDING:** No.

**WAYNE:** Why the SPP over MISO or any other one?

**MARY HARDING:** Well, there are a lot of reasons, and a lot of it goes back a long way. I've kind of, getting ready for this, read presentations back to 2006 and '07 and '08. So there's, there's a lot there, but essentially there were two things that struck me as I look back through it. And one is that in SPP, as a member, we have a much greater voice in operations than MISO affords its members. So that kind of concept of having some control is very appealing to us. The other is that those analyses of what would happen to us if we joined one or the other that were done for 2006, 2010, and I think looking forward into 2015, they all showed either revenue neutrality or a savings in costs by joining SPP, and they showed an increase in expenditure that we pass on to the ratepayer by joining MISO.

**WAYNE:** So do you think the public knows that when or understands that when they turn their light on, it necessarily isn't controlled anymore by?

**MARY HARDING:** Senator, I've had people call me and ask me why their lights are out and they're not even an NPPD customer. I don't think people generally know a lot about their utility system, except they know it's reliable, they know it's affordable, and they know they're got to pay a bill every month. Honestly, going door to door, I run into people who say, yes, I'm an NPPD customer and absolutely not. So I, you know.

**WAYNE:** Thank you.

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**MARY HARDING:** And I think that speaks well for us in a way because people can take it for granted. They don't have to think about all that.

**BOSTELMAN:** Senator Brewer.

**BREWER:** Thank you, Mr. Chairman. Well, I know with Black Hills Energy because I get that bill every month, it's pretty clear where it goes there. But going back to the point that Senator Wayne made, is there an annual report that comes out that is accessible to everyone that shows the debt, shows where money is, how much came in and when, kind of a general overview of where you're at so that people would feel comfortable?

**MARY HARDING:** Absolutely. An annual report for NPPD?

**BREWER:** Yeah, that breaks out the financials and shows where--

**MARY HARDING:** Yes.

**BREWER:** --everything is.

**MARY HARDING:** Yes.

**BREWER:** And is that all like on the website?

**MARY HARDING:** I think it's on the website.

**BREWER:** I got-- I got a yes back there somewhere, close enough for government work.

**MARY HARDING:** I think it's on the website.

**BREWER:** All right.

**MARY HARDING:** OK.

**BREWER:** And I know we've been grueling you here. But again, a lot of this is just understanding what right looks like, you know, where are we and how do we get there? And, and how do we-- how do we move from here farther down the road? So thank you for your patience.

**MARY HARDING:** Oh, absolutely. I mean, I remember joining the board and I felt like I was drinking from a fire hose for years. There's so much to know about this industry, like many others, I guess but.

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**BREWER:** Well, the great part is, you've got like 49 of us trying to help you.

**MARY HARDING:** [LAUGH] OK.

**BOSTELMAN:** Question I would have that would be are there some, I'll call them protections, we can use a different word, that may be considered in the best interests of Nebraska ratepayers? Are there some-- is there something out there that you see that we could do or should be done for and we struggled with the word, but we kind of came up with protections. I had to use fences, but that's not a good word, either. But is there something that you see that, that we might want to do, we should do, we should be thinking about for-- to help protect our people in Nebraska?

**MARY HARDING:** You're asking me to give you policy advice, in other words.

**BOSTELMAN:** In your personal opinion.

**MARY HARDING:** You know, we worked so hard to try to abide by the laws you set down for us. I don't have much time to think about what we ought to do differently. Mostly, we're just trying to pay attention to how do we do what we're supposed to do now?

**BOSTELMAN:** OK. Seeing no other questions, thank you very much for being here today. Appreciate it.

**MARY HARDING:** You're welcome. Good luck with all of this. It's a big thing.

**BOSTELMAN:** Thank you.

**MARY HARDING:** It's a big bite.

**BOSTELMAN:** Next, we'll have Amanda Bogner, is that correct, chair of the OPPD board. Good afternoon, and thank you for being with us today. Please spell and state your name.

**AMANDA BOGNER:** Yeah, just give me a moment here and organize myself. All right. Chairman Bostelman, Senator Brewer, and members of the committee, my name is Amanda Bogner, A-m-a-n-d-a B-o-g-n-e-r. I am the chair of the Board of Directors for the Omaha Public Power District, OPPD. I am also a small business owner and a licensed mechanical engineer. This is my-- this is the third year of my service on the

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OPPD board and tenth month in the chair position. I thank you for the opportunity to testify on LR136 to examine and evaluate the causes, costs, and impacts of rolling electrical power outages during the extreme weather events of February 2021. This is my first time providing testimony to the Legislature and I look forward to our conversation today. OPPD is a public power electric utility that is governed by a publicly elected board and is engaged in the generation, transmission, and distribution of electricity. OPPD serves an estimated population of approximately 855,000 in the 13 county, 5,000 square mile service area in southeast Nebraska. On March 3 of this year, Tim Burke, OPPD's previous president and CEO, gave a great accounting of what happened during the February storm and our response to this committee. So I'm going to focus my testimony on the questions the committee provided and our next steps. The first question: What, if any, inquiries or investigations did the OPPD Board of Directors do in response to the February 2021 blackouts? OPPD leadership and the board agreed that there should be a full after action review of the events and OPPD's actions during the event. Our staff spent hundreds of hours conducting this review and reported the results at the OPPD Board committee meeting on September 14, 2021. We also posted the report on OPPD.com so our customers and others can review. We learned from our review that OPPD was well prepared, that our team performed well during the event, and that there are lessons learned that will be applied going forward to improve our performance even more. What impact did the board find that the event had on the provider, its service area and OPPD ratepayers? Through advanced communication with the Southwest Power Pool, or SPP, it was determined that generation capacity was projected to be tight during the winter weather event and OPPD prepared to-- worked to prepare its generation assets for the event. The week before the event, OPPD's generation staff worked around the clock to successfully return our Nebraska City units from unplanned outages and a north Omaha unit from a planned maintenance outage to get them online for the winter weather event. They were available and served load during this event. OPPD also made public requests to our customers for energy conservation to help reduce the OPPD load, and we made requests to large customers for voluntary load reductions or self-generation to lessen the demand on the grid. As previously reported, OPPD set a winter peak during this event. Yet our generation was available to serve that load, plus an additional 5 percent. As a member of the Southwest Power Pool, OPPD benefits from the resources within the SPP footprint. We lean on these resources when we need to. During the February event, OPPD was directed by SPP to enact short-term control service interruptions to protect the



overall regional grid, which carried out according to OPPD's load shedding plan. On February 15, OPPD was redec-- excuse me, directed to shed 28 megawatts of load, and the interruption lasted approximately one hour. On February 16, OPPD was directed to shed a total of 126 megawatts of load, and that interruption lasted approximately four hours. OPPD rotated the controlled service interruptions to different areas every hour to minimize the impacts to customers. At the time, the winter weather event caused a 2021 projected net revenue deficit of \$10 million. But due to positive financial outcomes since the weather event, OPPD has been able to mitigate its effects on year end financial projections. Have there been any recommendations for change discussed by the board as a result of the event? And how do you intend to keep the same type of event from happening in the future? There were several recommendations for change discussed by the board. We believe these recommendations, once applied, will help our future operations during severe storms. The five key takeaways from OPPD's after action review are (1) more accessible and timely communication is critical to our customers during an emergency, an energy emergency; (2) our enhance-- enhance our emergency event plan to better support grid reliability during extreme events; (3) consider expansion of energy and fuel risk mitigation options; (4) review customer products and services to increase the usage and flexibility of self-generation and curtailment programs. And finally, (5) continue to use its SPP membership to enact positive change to the benefits of our customers. The next steps we will be taking as a utility are OPPD's executive leadership team will guide the execution of 24 recommendations based on priorities established in our after action report, and OPPD representatives will continue to support SPP working groups to implement SPP recommendations. The 24 internal recommendations were broken down into three tiers of importance and focused on the following four areas: customer experience, internal process improvement, financial, and technology-- technology improvements. There are five tier one recommendations as follows: (1) improve technology to better serve employees and customers, including improved communications; (2) develop comprehensive, sustainable operations blueprint to improve resilience; (3) establish methods of preferred communication with customers; (4) define resilience with possible adjustments to our strategic directives. And finally, (5) evaluate additional customer products and services, including rates and information sharing systems needed to provide OPPD with additional tools to mitigate reliability and financial impacts from extreme events. The additional products and services could include distributed energy resources and demand side management. There were also 12 tier

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two and seven tier three recommendations. In addition to the internal review, OPPD was heavily involved in SPP's comprehensive review. OPPD had Nebraska's sole member on the comprehensive review steering committee, which oversaw the development of the SPP report. OPPD also had active participation and contributions in the investigation, reviewing, resource adequacy and fuel supply, market operations, reliability operations, and transmission planning. We recognize that not all of the recommendations can happen immediately, and they will require time to develop the rules properly to have the intended effect. Overall, OPPD is satisfied with the recommendations that have been made in the SPP report, and we plan to continue to participate in the implementation of the recommendations to ensure that OPPD's customers are protected in the future. Does the board have any future generation plans in place for the next five to ten years? OPPD conducts resource planning as part of its regular business operations and to stay ahead of projected low growth. OPPD is in the midst of implementing its Power with Purpose Solar Plus Natural Gas Project, which supports OPPD's unwavering mission to provide affordable, reliable, and environmentally sensitive energy services to customers. This project also supports OPPD's Decarbonization Strategic Initiative and our board adopt a goal of net zero carbon production by 2050. OPPD has committed to 400 to 600 megawatts of utility scale solar generation and 600 megawatts of backup natural gas resources. The solar generation will be one of the largest renewable energy investments of its kind in the Midwest. Power with Purpose allows us to retire our oldest north Omaha station, natural gas fired units and refuel the remaining units from coal to natural gas, allowing OPPD to integrate more renewable clean energy into our system. So far, OPPD has executed an 81 megawatt agreement with the Platteview Solar Farm, and we are continuing to evaluate the best options for procurement to reach the solar generation goal. As for the natural gas units, the Power Review Board has approved OPPD's application to acquire natural gas resources. Approximately 150 megawatts of reciprocating engines will be built at the Standing Bear Lake site. These are quick-start resources with fast ramping, ramping capabilities to react to solar variability and will have dual fuel resource capability that will have backup fuel on site to mitigate potential natural gas limitations. Approximately 450 megawatts of simple cycle combustion turbines will be built at the Turtle Creek site. This will also have dual fuel capabilities with backup fuel on site. We are also embarking on OPPD's next Integrated Resource Plan, IRP, to satisfy contractual requirements with the Western Area Power Administration, or WAPA. I want to thank Senator Brewer, who is not here, for introducing the LR

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and providing the opportunity for the Legislature and the public to learn more about OPPD and how we successfully navigate the winter weather event in February 2021. Chairman Bostelman and members of the committee, thank you for your consideration of my testimony. I will answer any questions you have.

**BOSTELMAN:** Thank you, Chair Bogner. Are there questions from the committee? Senator Wayne.

**WAYNE:** Since you guys adopted a goal of net zero by 2050, would the board be in a position to support legislation for the state going 2050 to net zero?

**AMANDA BOGNER:** So, so you had asked a question earlier. I'll get to this question. I think it's related to a previous question you asked about how our staff knows what to advocate for and our strategic directives definitely align with what we want our staff to be advocating for and supporting here at the Legislature and at the federal government. So with that directive in place, our staff definitely has the direction that they need to work with, with senators to support goals that have a common interest that way.

**WAYNE:** That didn't answer my question. Does the board support-- you guys have already said you wanted 2050 net zero. Would the board support legislation to do the same?

**AMANDA BOGNER:** I believe it would.

**WAYNE:** When it comes to your organization, is it top down board down or is it management, management led?

**AMANDA BOGNER:** I believe it is board led. We set strategic directives that our, our CEO and our executive leadership team have to work to carry out.

**WAYNE:** Did you guys, I'm asking pretty much the same question, did you all make money during this event?

**AMANDA BOGNER:** No, we had a deficit of \$10 million.

**WAYNE:** And where did that deficit come from and from kind of what?

**AMANDA BOGNER:** That's a great question. So similar to all the other utilities in our state, we sell power into the marketplace and then we have to buy that power back. So that deficit was a combination of

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natural gas prices on that day, ahead market pricing and then what we had to buy in order to serve our load.

**WAYNE:** Interesting. How have-- the same tough question, how do you-- I know you just recently, I guess, you were there, the chair ten months ago, when--

**AMANDA BOGNER:** Three weeks before this event.

**WAYNE:** How do you explain to constituents that we had enough power, but were told to shed power during the time of the rolling blackouts?

**AMANDA BOGNER:** Yeah, that's a hard one to understand because this is the most complicated machine in the world, right? So it's hard to understand that, that technical component. So similar to some of the other testimony that you've heard today, I think part of that explanation is that we're part-- we're part of a bigger grid, literally part of a bigger grid, and we needed to help a neighbor in need. So where we had capacity, we had a surplus of, of power, we had 105 percent of generation capacity during those events, we were asked to shed load because our other neighbors didn't have 100 percent capacity available to them in their areas. And so one of the-- so an hour of-- hour-- an hour of outage for some of our customers resulted in I believe removing the possibility of having days without power. And I think when, when my constituents hear it in that context, they think that that hour was worthwhile as opposed to being without power for days and, and having a much more catastrophic, catastrophic, catastrophic event across our city in Omaha, our service territory, and our 13 counties and then the greater grid at large.

**WAYNE:** This question is unfair. It's not part of the questions, but my community was, particularly my neighborhood was very upset. So we had the big storm and lost power for four to five days after this event.

**AMANDA BOGNER:** In July, yes.

**WAYNE:** But within eight hours, Omaha Country Club, which is literally not even half a mile from me, had power the next day and my community, particularly around Omaha Country Club, had no power for four days. How do I answer those questions?

**AMANDA BOGNER:** That, that storm was a very different event from the one that we're-- that we were brought here today to talk about.

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**WAYNE:** And it's fair we had the Senior Open going. So for me, I guess that that probably factored into it. But how do we [INAUDIBLE]

**AMANDA BOGNER:** And I don't know from like the technical, the boots-on-the-ground strategy of who got service first. That storm in particular, was extremely widespread across our entire service territory and unusual in that way. Usually, when we have summer weather events like that, they, they are, you know, a tornado touched down in this location and maybe this mile of area is torn up. This was much more significant. So I don't have a great answer for you on that. We brought in as much mutual aid as we possibly could get ahold of. We worked around the clock for days on end to get as many customers back up as possible. We looked at circuits, so at, at the circuit level, how many customers were on that circuit and, and then also paired that with how quickly do we think repairs can happen to get those people up and going? So the circuits that had more people on it with easier fixes got service quicker and then we had to prioritize the longer term fewer customers for later in the week on that restoration process.

**WAYNE:** That process resulted in OPPD working west to east and east being the part-- some of the poorest areas in Omaha.

**AMANDA BOGNER:** And with some of the heaviest damage.

**WAYNE:** So [INAUDIBLE] the most--

**AMANDA BOGNER:** So from a, just from like a how to do the work, it was the most dangerous and most intense.

**WAYNE:** I understand, but arguably the people who need it the most got served the least during that storm.

**AMANDA BOGNER:** And we're in the process of an after-action review on that event as well, which, which is fairly common practice at our utility so we can come back and testify about that event at another time perhaps.

**WAYNE:** Thank you.

**BOSTELMAN:** Senator Brewer.

**BREWER:** OK, first off, just so you know, I was in my office listening on TV.

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**AMANDA BOGNER:** Sorry, I didn't know that. I didn't know you could hear that.

**BREWER:** It was time for my staff's afternoon meeting, so I had to be there. Now we're going to do good cop, bad cop. And unfortunately, Wayne's the good cop.

**AMANDA BOGNER:** Oh, my goodness.

**WAYNE:** I got my life insurance today for the travel. So--

**BREWER:** Yeah, just so, you know, if there's an avalanche in a couple of weeks, you guys' lives will be a whole lot better, OK? All right. Actually, mine's pretty simple. Again, you know, there's a lot of the state listening into this today if you don't know that. My phone is exploding.

**AMANDA BOGNER:** Sure. He's here now, people.

**BREWER:** Yeah. Well, and there's questions that again, we're trying to make sure everybody understands. If we-- when we talk about Fort Calhoun, that was a OPPD facility.

**AMANDA BOGNER:** That's right.

**BREWER:** And help us to understand just in Reader's Digest terms here, why was it necessary to shut it down?

**AMANDA BOGNER:** You want to start with that?

**BREWER:** Yeah, go ahead.

**AMANDA BOGNER:** We can start with that for sure. So Fort Calhoun was struck by a flood that was catastrophic to that station, and then we worked to repair that and then we had a fire that caused even more damage. And as we were evaluating the economics of what that generation asset was worth to the district versus the costs to repair and then also weighing future risks of additional flooding being right on the river, the district felt that it was not in the ratepayers' best interest to continue to operate and maintain that facility. Maintaining a nuclear facility is far different and far more complicated than maintaining a coal or natural gas or renewable type of facility. There's a whole nother level of licensing and complexity that comes with that, that type of system.

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**BREWER:** And I totally agree, because I had a nephew who worked with security there, just understanding the security of one of those facilities opposed to a coal facility.

**AMANDA BOGNER:** Right. They carry guns. It's, it's, it's a bigger deal.

**BREWER:** And so the plan had existed for how long?

**AMANDA BOGNER:** That's a great question that I do not know the answer to.

**BREWER:** Quite a while.

**AMANDA BOGNER:** Quite a while.

**BREWER:** But it wasn't until that flood that it really was a factor where it was and the fact that the flooding impacted its ability to operate. So when SPP was talking about essentially pulling Nebraska's backside out of the fire and flooding, was that the facility they were referencing that they came to our rescue in flooding?

**AMANDA BOGNER:** So I think that they are probably-- I think that that reference was more about the 2019 flood because we had already shut down Fort Calhoun. That got shut down in 2016.

**BREWER:** OK, you're getting to where I want to be here.

**AMANDA BOGNER:** Yeah.

**BREWER:** So when they referenced SPP-- SPP making sure Nebraska was taken care of in this flooding, what facilities in Nebraska and I may have to ask others because I understand you only have a piece of the pie.

**AMANDA BOGNER:** Yep.

**BREWER:** What facilities in Nebraska did we lose that impacted things during the flooding?

**AMANDA BOGNER:** Yeah. So we had severe complications at our Nebraska City units. So those were out of--

**BREWER:** That was Cooper.

**AMANDA BOGNER:** No, Nebraska City.

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**BREWER:** Oh, Nebraska City. I'm sorry.

**AMANDA BOGNER:** Um-hum.

**BREWER:** So what is at Nebraska City?

**AMANDA BOGNER:** So those are our largest coal assets--

**BREWER:** OK.

**AMANDA BOGNER:** --in Nebraska City, our baseload generation.

**BREWER:** OK. Again, so everybody understands what we're talking about here.

**AMANDA BOGNER:** I have the size, 1,800 megawatts. At Nebraska City, I think about 1,200 megawatts.

**BREWER:** And so they shut down that facility and that load had to be shifted somewhere else--

**AMANDA BOGNER:** Absolutely.

**BREWER:** --or had to be picked up from somewhere else.

**AMANDA BOGNER:** Yeah, absolutely, because that's the-- that's the majority of our generation.

**BREWER:** So OPPD had shut down Cooper, so they weren't bringing any juice from there.

**AMANDA BOGNER:** Fort Calhoun.

**BREWER:** Fort Calhoun.

**AMANDA BOGNER:** Cooper's not ours.

**BREWER:** Thank you. Thank you for keeping me straight. And now your, your, your main facility is shut down because of flooding. So at that point, you are buying pretty much all the power you were using.

**AMANDA BOGNER:** Importing a lot of our power in 2019.

**BREWER:** All right. There had to be a little nerve-racking.

**AMANDA BOGNER:** Yes. And as we can see, those prices shift, right?



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**BREWER:** Yeah.

**AMANDA BOGNER:** So we, we make money when we sell power into the grid and then we have to buy it back. We weren't selling into the grid, so the financial picture in 2019 looks [INAUDIBLE]

**BREWER:** Money going out, but not coming back. So if we take a snapshot in Nebraska at that point in time, were you able to then have other Nebraska public power facilities provide sufficient power to carry the day? Or was it then necessary to go into the region?

**AMANDA BOGNER:** Further afield? So I think that some of the testimony earlier today kind of addressed this a little bit that we don't necessarily know where our electrons are coming from when we are buying from SPP market. So the electrons get put onto the grid and they are not individually tracked, if you will. So it's quite possible that if our neighbors here in Nebraska had surplus, that we were probably getting that power, but we weren't buying directly from them. We were buying from the SPP marketplace.

**BREWER:** All right. Well, I just want to make sure he wasn't a snake oil salesman and that wasn't quite accurate. But you, you confirmed it was. So I appreciate that and thank you for your answers.

**AMANDA BOGNER:** Absolutely.

**BOSTELMAN:** So how does OPPD intend to maintain reliable and affordable generation assets as you're looking to your decarbonization?

**AMANDA BOGNER:** Yeah. So similar to how we evaluated our Power with Purpose project, which was focused on capacity and reliability and resilience, we are looking at a suite of options on what gives us that same benefit. We want to enjoy the same benefits that we do today with reliable, affordable, and environmentally sensitive when we go to make a shift towards that to achieve that net zero 2050 goal. That might be a combination of all the technologies that you've heard about already today. It might be-- it might be modular nuclear reactors. It might be additional wind or solar. It might be dual fuel capable generators that we, you know, have already started to build on our system. And similar to what Chair Harding said, you know, looking at carbon capture and those technologies. So we're in the first phases of that very specific study. So that's part of that Integrative Resource Plan that I mentioned in my opening comments. We've just received initial results from that modeling activity. So all of this gets modeled. You

throw a bunch of different scenarios at the plan and see what floats to the top from those-- that three-legged stool of environmentally sensitive, reliable, and affordable. We're also adding in resilient to that mix, too, because as we have removed a very, very firm capacity in, in our nuclear station at Fort Calhoun, a constantly spinning asset that's creating that voltage support, we need assets that are going to provide similar services to our grid. So it's not necessarily about just generating the electrons. It's about making sure that we have enough oomph, if you will, to push those electrons out to our customers.

**BOSTELMAN:** OK, what is OPPD's definition of business risk when describing CO2 as a pollutant?

**AMANDA BOGNER:** So similar to-- I'll echo what Chair Harding said. But then I'll add to it that I think it's also a financial risk, potentially in the future. So, you know, contemplating what, you know, even federal legislation is thinking about with the carbon tax and some of those cap and trade types of initiatives, we need to prepare ourselves for an environment where that might become a possibility and, and other financial risks related to that and, you know, making sure that we constantly have access to our capital markets. Investors are looking for more environmentally sensitive approaches to, you know, quite honestly, one of our, our, our-- we are one of the biggest contributors to carbon dioxide pollution in our environment, and we need to own that and we need to solve for that. We're engineers and we can solve for that.

**BOSTELMAN:** OK. If OPPD's future plans include decarbonization and include divestments of fossil fuels, Nebraska City 1 and 2 and other facilities must be shut down. The concern, of course, is that as a load serving entity to the Southwest Power Pool, what would OPPD replace fossil fuels with and how does it intend to maintain reliability and affordability for residents of Nebraska?

**AMANDA BOGNER:** Yeah. So we're, we're just in those early phases to explore what are our paths? What are our paths to that where we still meet all of those criteria and we don't know what that full answer is going to look like yet. Similar to, to what Chair Harding said, there still might be fossil fuel generating assets on our system, but the intention is, again, that net zero concept. So that's where carbon capture and other technologies that are emerging might step in.

**BOSTELMAN:** So bear with me on this next question.

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**AMANDA BOGNER:** Sure.

**BOSTELMAN:** I wrote it last night about 10:00 so.

**AMANDA BOGNER:** Oh, my.

**BOSTELMAN:** It's-- we'll, we'll see how we get through it. But I listened to your Wednesday OPPD's Pathway to Decarbonization webinar.

**AMANDA BOGNER:** Yeah.

**BOSTELMAN:** And when we're looking at the events in February and rolling blackouts in the state and the SPP, several questions come to mind. What we saw happen was the loss of generation from both renewables and backup generation, specifically natural gas. Your, your consultant is proposing from one [INAUDIBLE] your consultant is proposing a 60 percent increase in generation to meet future needs, which is 12 gigawatts of wind and solar generation backed up by natural gas peaking stations. So this will require and as they reported, at least a 16 percent increase in rates, but what it does not include is new transmission distribution, distribution. In other words, what they did not report was new transmission distribution and interconnections in that costs, which are significant, significant to costs increase so that 16 percent could very well be 30 percent. And I don't know if 30 percent is the right number. I'm just giving it a number.

**AMANDA BOGNER:** I understand what you're saying. I'm nodding and understanding, yes.

**BOSTELMAN:** I do believe that you need to show these rates forecast to your ratepayers. And when considering this-- this is what when I looked at this and I know it's not one way or the other, but, but I see this over and over because baseload generation I think is very important, different types of baseload generation is very important. But especially when we talk about wind and solar, this is-- this is-- this was an eye catcher or for me is when you consider this build out, this would include approximately 200 square miles of solar panels and 40 square miles of wind turbines. That's 6,000 wind turbines. So if all of our generators are building in SPP renewables in this fashion, where-- what comes to my mind, where is it going to be built? And again, how will we remain resiliency and reliability? Because resiliency, the more of this we add on the less resilient and the less

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reliable we are on the grid. So that's a lot there. I'm sorry, but that just struck me.

**AMANDA BOGNER:** Sure. So there's a lot of statement. Is there a specific question? Sorry. Was there a specific question?

**BOSTELMAN:** The specific question was if all generators are building renewables, where is it going to be built? And that's just--

**AMANDA BOGNER:** OK.

**BOSTELMAN:** And again, if we do that, how, how will we-- how will you remain, maintain reliability?

**AMANDA BOGNER:** Gotcha. So I don't know. I don't know where it's going to be built. It's certainly a lot of land. It's a lot of capacity. I mean, some of those numbers are staggering, right? From a cost increase, I just want to address that. Sixteen percent from now to 2050 is less than what we would expect even inflation to be. So I just want to kind of highlight that. And then when we're talking about the added transmission and the cost associated with that, as we heard earlier today, that price or that cost gets socialized across the SPP. So that would not be 100 percent "beared" by OPPD customers. So there is-- there is benefits there that were already highlighted.

**BOSTELMAN:** Reliability.

**AMANDA BOGNER:** Thank you. So I think that, you know, marrying those technologies with like the fossil fuel, like the natural gas back up like we were doing right now with the solar plus natural gas and having dual fuel capability helps us mitigate that risk of these really odd scenarios where natural gas then becomes unreliable or unavailable, maybe too expensive. And we can switch then to an alternative fuel and we can store that onto alternative fuel, you know, a certain capacity of that on site so that it's available to us in an emergency event. Some of those types of technologies also provide some reliability and resilience support. So, for example, and I feel like I might be getting a little out of my depth here, so bear with me. Even when a solar panel's not generating electricity, it is providing some essential reliability support services and kind of smoothing the, the, the power grid, if you will. And so I'll provide you-- I'll get someone at OPPD to provide you more information because I think that's a really under-- misunderstood concept of solar that provides the utility a lot of risk mitigation possibilities. And so,

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so I want you guys to know more about that, but I'll get someone that's smarter than me to answer that question for you.

**BOSTELMAN:** I appreciate that. The last question I have for you and I asked the previous testifier was are there some, and I call them protections and the question that need to be considered in the best interest of Nebraska ratepayers? Are there some things that we're not doing now that maybe we should be doing either, either statutory, regulatory, or otherwise that that maybe you've looked at as a board or you've thought of or personally?

**AMANDA BOGNER:** Yeah, that's a really interesting question, and I am just forgetting now what I had thought about when you had asked that question earlier. So, so I'll just say that, you know, we work really hard at OPPD to make sure that we're in compliance with law, both federal law as well as the state statutes that are in place. And so I think that any time something is being contemplated that would have an impact on OPPD we want to be at the table to have a conversation about it. And we're open to those conversations to really explore how do we make the public pot-- public power model the best it can be for Nebraska?

**BOSTELMAN:** OK. Senator Cavanaugh.

**J. CAVANAUGH:** Thank you, Chairman Bostelman, and thank you, Ms. Bogner, for being here. So we met a lot of people. I probably should've asked some other folks this question, but there's been conversations about the reason to set a net carbon zero objective. You talked about a business case objective, and you mentioned that we are a large-- OPPD generation, electric generation in the state is a large producer of carbon. One of the reasons, this may be my interpretation, and maybe I don't want to put you on the spot, but one of the reasons to set a net zero objective is because of the climate change causing effects of carbon in the environment and the fact that climate change is one of the root causes of these type of, this weather event, the weather event this summer and the flooding events, the increased instances of severe weather events, which in fact, actually caused these catastrophic failures that we're talking about. And so there is a business case sense that you've talked about from national business interests and other sorts of things. But can you-- I don't know if you want to speak to that or address that concern or question.

**AMANDA BOGNER:** So yes, I mean, that is why I would say the majority of our board is interested in helping the utility develop a strategy to

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mitigate this risk because we do think that our-- some of our activities related to burning fossil fuels are causing climate change. And our constituents, your constituents are feeling the brunt of that. And I recognize that people are on different sides of the table when it comes to climate change. But if we know that there's something that we are doing that could be done differently and not cause that, I think it is our fiduciary responsibility to make that happen. And so that, that is at the-- that is at the base, that's at the essence of why we are moving in this direction and encouraging our senior leaders to evaluate alternatives so that we can understand future risk, future responsibility and we can marry up resources to align those things.

**J. CAVANAUGH:** And when you say that your constituents, the customers are bearing the brunt, I mean, you mean in a physical,--

**AMANDA BOGNER:** Physical--

**J. CAVANAUGH:** --financial sense.

**AMANDA BOGNER:** I mean, how many constituents--

**J. CAVANAUGH:** This is not a feel good issue is my point.

**AMANDA BOGNER:** No, I, I don't want anyone to be displaced because their home was flooded and they have to now find new housing for six months while their home is being rebuilt. I don't want sheep to die because of this crazy weather event that has occurred. You know, these, these are real things that no, we don't-- we collectively don't see how our actions are causing that, but collectively then we are feeling the burden of it. And there's a price. There's a price to this. There's a price of life. There's a cost. You know, so this-- this is why I, I certainly personally have much stronger feelings about the climate change initiative. But I also recognize who I'm talking with today so we can maybe have a conversation offline a little bit further.

**J. CAVANAUGH:** Thank you.

**AMANDA BOGNER:** Yeah.

**BOSTELMAN:** Senator Wayne, do you have a question?

**WAYNE:** Are you planning on seeking ARPA funds and if so, what do you plan on doing with them?

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**AMANDA BOGNER:** That's a great ques-- I would have to phone a friend. And so I guess I'm not allowed to do that right now.

**WAYNE:** Well, OK. I was just curious on what you were planning on doing with them if they were to get them.

**AMANDA BOGNER:** Let me take that question back and we'll get that answer for you.

**WAYNE:** OK.

**BOSTELMAN:** Chairman Brewer.

**BREWER:** Thank you, Mr. Chairman. All right. Well, I guess if you wanted to trigger me, you figured out how to do it.

**AMANDA BOGNER:** Oh.

**BREWER:** All right. Let's go back and just talk a little about the whole, the whole carbon issue, because I think at some point we need to put that in terms people can understand because I asked him and I did this for the footprint that NPPD has and not for OPPD.

**AMANDA BOGNER:** OK.

**BREWER:** So just work with me so you kind of understand where I'm trying to get with us. And I said, well, you know, how much carbon does NPPD produce through their generation of electricity? And so the mathematicians went to work and they came back with a ballpark figure of about 56 million tons. I said, all right, that's more than I would have thought. And I said, well, if we take that same area, the same footprint and let's say we go with corn and soybeans, how much of that do they then consume? And so they came back with a ballpark figure of 180 million. So essentially, it's, it's a third of what the total consumption is. So I guess at some point, if Nebraska's mission in life is to compensate for all the others that are producing carbon and not producing a crop or something that consumes it, then maybe that's what our burden in life is. But I think there's a point where if that process, we decide to go through, whether it's putting up another million square miles of solar panels or wind towers or wherever it is, as it starts to impact a livelihood and I understand we could have floods, the climate might change, but we all might. But we got to be realistic, too, that people have to make a living. And so at point we either make things so expensive or we have periods of blackouts, which this meeting has been long. I understand that, but I guarantee you

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come February we have a similar event, this will be a much more brutal meeting

**AMANDA BOGNER:** Sure.

**BREWER:** And there's going to be a lot of hard questions. So we got to figure out how to get there. And I think if we get too focused on this whole carbon issue and we don't look at reasonable dependability, reliability and at a reasonable price for the product, there'll be folks show up and it won't be the ones that, you know, are concerned about the environment as much as the ones that are concerned about making a living and living day to day. So I just think we got to figure that balance out and not get too carried away because Wal-Mart might strong arm you and say, listen, we want you to have nothing but reliable renewables. That's it. And you can appease them. But if in the end a bunch of folks are out in the cold, the winter that need it to survive, they're not going to care about Wal-Mart. They're going to come looking for heads in these different power companies. And so that's where I get worried that the feel good moment outweighs the reality of life.

**AMANDA BOGNER:** Sure.

**BREWER:** So anyway, thank you.

**BOSTELMAN:** Senator Moser.

**MOSER:** So how do you see the balance of board direction and management direction when you come up with a policy that you think the power district should adopt? And then the board says, well, that's not-- we're not able to engineer that and produce electricity and, and keep our, our electricity reliable and affordable?

**AMANDA BOGNER:** Um-hum.

**MOSER:** So who has the upper hand there? Does the board override the judgment of the management? Or do they have inroads into the board where they can say, OK, well, these are the feel good. I say feel good. That's not a good term. These are our long-range goals of not having this much carbon use. But you know, how do we get there and how do we not squash a lot of people in the process? I guess a little bit of a variation of what Senator Brewer said.

**AMANDA BOGNER:** Sure. So as far as when we-- let me, let me walk you through maybe how we develop a strategic directive, how we evaluate



what should be adopted as far as policy is concerned. So the strategic directive framework was put in place several years ago, and we've been working within that framework because it really sets clear direction for our CEO on what it is we would like the district to carry out. That does not-- those do not get developed in a vacuum. It is not just the board saying, here's what we want to carry out without any input from senior management or our CEO or subject matter experts, for that matter. So we will usually come up with the initial pass of here, here are our principles that we would like the strategic directive to drive at. So like on the rates strategic directive, we want our, our rates to be clear. We want them to be affordable. And then there are other-- we want them to be fair and reasonable, meet, meeting state statute requirements, things like that. And then-- and then-- and then we look at aspirational goals related to that topic at hand. So, so the 2050 net zero goal is definitely an aspiration goal. So if we look at our generation mix right now, we-- I don't have the number. I have the number right in front of me, but I don't have it available right here.

**MOSER:** That's OK.

**AMANDA BOGNER:** Well, let's, let's just say 40 percent of our generation capacity right now is renewable. And we, we need to move towards understanding how can we move that last 60 percent to being in that environmentally sensitive category? The charge is not get to all 100 percent immediately. There is a timeline established because we know it's going to take time. It's also directional in that it sends a signal to the organization that we want them to start to act and move and set foundational elements in place so that we have options later. So if we don't, if we turn a blind eye to the issue at hand, let's say it's, it's climate change or let's say it's financial risk in the future that we're trying to mitigate, because that, in my opinion, is actually the thing that we're trying to mitigate. If we turn a blind eye to that, we're saying we're not going to prepare this organization for something that very well could happen.

**MOSER:** I don't think-- I don't think anybody expects you to turn a blind eye toward--

**AMANDA BOGNER:** To any risk, right?

**MOSER:** --to any of that. But we don't want to turn a blind eye toward baseload generation and being able to--

**AMANDA BOGNER:** Absolutely.

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**MOSER:** be sustainable over time. That's, that's the thing. And, and I was encouraged by Ms. Harding's comment about, well, we have a lot of good ideas. We see a lot of trends. We look at them and sometimes management says these are kind of pie in the sky things right now. They're not-- they're not feasible at this time.

**AMANDA BOGNER:** At this time.

**MOSER:** Does your management ever tell you that?

**AMANDA BOGNER:** Absolutely. And that's part of the decarbonization--

**MOSER:** Have you changed your direction? When the Roomba hits the wall, do you turn another angle and try something else?

**AMANDA BOGNER:** I don't think that we've gotten to a point where we fully know what is going to be available even in 20 years' time to know whether that goal is not even something that we should still charge at. I think the movement towards that goal is notable and right. And, and if we were to not move towards that goal and just keep status quo, we have a whole slew of other risks that then we will have to address. So yes, we-- part of that evaluation process is it's three pronged. It's reliable. It's energy or, excuse me, environmentally conscious. And it's also affordable. And there's not a pathway that we will go down that does not meet those three tenets, and those are three equally weighted tenets.

**MOSER:** When you hire a new manager, do you ask them questions about what their opinion is on green energy?

**AMANDA BOGNER:** So the board's responsibility is to only hire a CEO, which we did that this year, and we did have interview questions related to climate change and green energy and the strategy towards that. It was one question of many.

**MOSER:** Well, I, I hope that you get the impression from listening to, to us that we want to be environmentally good stewards. You know, even though the U.S., you know, it's not the number one polluter, maybe there are two or three ahead of us as far as that goes. But we do want to be able to enjoy a, a quality of life moving forward. We don't all want to move back into sod houses and, and, you know, wear all wool clothing or whatever. I mean, they're just--

**AMANDA BOGNER:** Absolutely.

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**MOSER:** It's encouraging to hear from the industry, you know that we are balancing these interests. I guess that's--

**AMANDA BOGNER:** Yes, it's a balancing act. Absolutely.

**MOSER:** OK, thank you very much. Appreciate it.

**BOSTELMAN:** Seeing no other questions,--

**AMANDA BOGNER:** OK.

**BOSTELMAN:** --thank you very much. For your first time before a committee, you did a great job so thank you for being here today.

**AMANDA BOGNER:** Thank you very much. It was a pleasure.

**MOSER:** I hope we didn't make you sweat too much.

**AMANDA BOGNER:** Oh, I'm fine. Thank you.

**BOSTELMAN:** Next testifier that we'll have come up is DaNay Kalowski [PHONETIC] and is the chair of the LES Administrative Board, and I'm going to turn it over to Senator Moser for a few minutes and then step out.

**MOSER:** OK, thank you. OK. Ms. Kalkowski, if you could give your prepared remarks.

**DaNAY KALKOWSKI:** Good. Good afternoon, Mr. Chair and members of the committee and Senator Brewer. My name is DaNay Kalkowski. That's D-a N-a-y K-a-l-k-o-w-s-k-i. I'm an attorney here in Lincoln and I practice in the real estate and land use area. My family also ranches in northeastern Nebraska. And so I wanted to thank Senators Gragert, who is not here today, but also Senator Cavanaugh for visiting our ranch this summer on the Nebraska Grazing Lands Coalition grazing tour. So we got to see some really beautiful country that day.

**J. CAVANAUGH:** Thanks for having me.

**DaNAY KALKOWSKI:** You bet. Finally, and most important for today is I have the pleasure of serving as the current chair of the Lincoln Electric System Administrative Board of Directors. In my four years of service on the board, I have found LES to be a top-notch organization, talented employees, talented leadership and board members who are very committed to providing safe, affordable, and reliable electricity to

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our approximately 144,000 customers within our 200 square mile service area in Lancaster County. I'd like to thank you for inviting me today and allowing me to share some information and answer questions about LES, and I'd like to just go ahead and get right to those responses and then be ready for any questions you might have at the end. So the first question, what, if any, inquiries or investigations did the LES Administrative Board do in response to the February 2021 blackouts? I think as our other facilities indicated, LES also, our CEO, Kevin Wailes, kept the board very appraised [SIC] of the situation, both leading up to and during the load shedding events on February 15 and 16. We also had reports at our February and March board meetings from LES vice presidents of both the power supply and energy delivery on the cold weather impacts to LES and how LES addressed the winter storm situation. The February 19 report occurred at our board meeting, you know, just days after the load shedding events. And at that time, the report noted to the board that LES's generated-- generating resources had generally produced more energy than what our load consumption had been during the past several days. So that was some really good news to the board at that point in time. I think copies of both of those reports have been provided to Cyndi. LES staff has also undertaken a multidivision internet-- internal review looking at all facets of the weather event to see where LES performed well and where we still have needs for improvements. A comprehensive report covering all operational areas is planned to be presented to the board at our meeting in November. What impact did the board find that the event had on LES, its service area, and its ratepayers? Beginning on February 13, LES issued public appeals to its customers to reduce electricity consumption. Once SPP called for rolling outages on February 15, we, as you might anticipate, started getting questions from our customers about the local outages. The rolling outages on February 15 impacted about 3,000 of our customers and it lasted approximately one hour. In preparation for additional SPP load shedding requests, LES staff immediately updated its website outage map to show the current areas subject to the rolling outage and then the next areas to be impacted, which gave our customers then about 30, well, all the way from 45 to 60 minutes of advance notice before the outage. That map was then used extensively on February 16 when SPP called for three and a half hours of additional outages, and that impacted about 44,000 of our customers. The map's use significantly reduced the amount of feedback we received on that second day from the LES customers. So in total between the two days, approximately one third of our retail customers were impacted by the outages, ranging from time frames of about 28 to 68 minutes. From a financial standpoint, LES was rewarded for being a

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strong net generator during that storm event. LES collected an estimated net revenue of approximately \$35 million over the roughly 10-day event. This net revenue is a result of several factors, including number one, the efforts of our well-trained and excellent LES staff, and the second thing is really the diversity of our resources that we have. We had sustained contributions from LES's coal resources, also from our natural gas fleet that operated on fuel oil as an alternative fuel, and also periods of support from our geographically diverse wind portfolio. Our board has taken action to defer recognition of that net revenue from the event, pending all postevent considerations at both SPP and the regulatory, federal regulatory level. So no decisions have been made to date on the use of the revenue. But regardless I think of the final determination, we know the funds will be used to help maintain low rates and high reliability for our customers. The third question was have there been any recommendations for changes discussed by the board as a result of the event? And how do we intend to keep the same type of event from happening in the future? I think first, you know, neither LES board nor staff can really guarantee that this type of event doesn't happen again. And I don't think either LES or other Nebraska public power utilities caused this event. But regardless, our organization can and will continue to do everything it can to avert these kinds of events happening in the future. And that includes continuing to do the things we already do well, which is routine maintenance, preventative maintenance, winterization of our equipment. And we will also strive to improve our performance by implementing action items that are identified in the comprehensive report that the board is going to see in November. In fact, the first set of action items from our power supply division were presented and reviewed with the Operations and Power Supply Committee in September. And I think that report said although LES staff and equipment performed well during the winter weather event, there were also still several improvements that could be implemented to make things run even better. And so 24 of those items relating to our power supply have already been addressed, and all but two are on schedule to be done before the winter season. And then the final question, does the board have any future generation plans in place for the next five to ten years? Based on the current forecast and the resources that we have today, LES does not require additional resources within that five- to ten-year time period. I think as you've heard from the other utilities, resource planning is a never ending process at LES. Staff is constantly evaluating new opportunities, new technologies, anything we see coming at us all the time. However, in 2022, we will be preparing our Integrated Resource

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Plan, which we conduct every five years. This plan provides a really holistic review of our entire resource mix, and it takes into consideration what this mix should look like over the next 5, 10 and even 20 years. For example, in 2017, our IRP notably called for us to extend to a 30-year extension of the hydro contract that we have with the Western Area Power Administration. The two-- 2020 IRP will also, for the first time, include consideration of our new decarbonization goal that was adopted by the LES board in 2020, and that looks to achieve net zero CO2 emissions from our generating portfolio by 2040. So just in summary, I think our board recognizes how much more severe the situation could have been in February if SPP had not been able to maintain grid stability throughout the region. Had the grid gone down, our customers would have been impacted much more significantly than they were impacted by the two, two days where we had the rolling outages. We also recognize and share frustration that public power in Nebraska outperformed much of the SPP region, yet was still subject to these controlled rolling outages. Unfortunately, we recognize, as many have said here today, there may be circumstances in the future where, you know, having that balance of SPP is required in order to support SPP and maybe other utilities in Nebraska, which is one of the key benefits we see to the regional approach to reliability. Thanks again for allowing me to appear today, and this time I'd be happy to answer any questions you might have.

**MOSER:** We have questions from committee members? Senator Brewer.

**BREWER:** Thank you, Mr. Vice Chair. Originally I wasn't going to ask you anything because wore off people down here.

**MOSER:** Well, just say questions 1, 4, 5, and 8 you've heard  
[INAUDIBLE]

**BREWER:** And don't--

**DaNAY KALKOWSKI:** Don't make me say the same thing as been said twice already.

**BREWER:** Don't get a complex because half the folks got up and left when you walked up to the chair.

**DaNAY KALKOWSKI:** Yeah, I do.

**BREWER:** Actually, that's good because they can't ask you any questions.

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**DaNAY KALKOWSKI:** There you go.

**BREWER:** It's a win win there.

**DaNAY KALKOWSKI:** That's the way I look at it.

**BREWER:** OK, so for LES, what are your sources of power? What do you have in the way of facilities to generate power?

**DaNAY KALKOWSKI:** OK, so we have a resource mix that is about one, for generating capacity, about one third gas or fuel oil resources. Those are, are owned by LES and local generators. About one third of our generating capacity is ownership in coal plants. Two of those that we have ownership are percentage interests and one we participate in with Gerald Gentleman. And then a third of our portfolio is approximately, approximately a third of 34 percent is, is renewable, with about 10 percent of that being hydro and about 24 percent being wind.

**BREWER:** And the hydro, where does the hydro come from?

**DaNAY KALKOWSKI:** So that's our contract with the Western Area Power. I'm not going to get it right, WAPA we call it at the board meeting.

**BREWER:** So it's a dam in Colorado, Wyoming, somewhere out there?

**DaNAY KALKOWSKI:** I'm not sure exactly where it's located.

**BREWER:** We'll say yes for now.

**DaNAY KALKOWSKI:** South Dakota.

**BREWER:** Somewhere in the Rockies, how does that sound?

**DaNAY KALKOWSKI:** There we go, thank you.

**BREWER:** All right. Well, I mean, that's I mean, that's perfect because you, you got your balance there. And you know, we, we were watching at the Capitol, curious to see at some point if LES would turn off the power at the Capitol and they never did. So thank you for that. And thanks for testifying.

**DaNAY KALKOWSKI:** You're welcome. Thank you.

**MOSER:** Other questions? Did you have any brief remarks about some of the questions we asked the other testifiers?

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**DaNAY KALKOWSKI:** Well, I think--

**MOSER:** Were there questions where you were kind of chomping at the bit to answer?

**DaNAY KALKOWSKI:** Well, no, no. I think I guess if there's one thing I want to leave here today and I think you've heard it from the other two board chairs is that we understand your concern about the reliability and the resiliency. It is discussed all the time at our board and it is a huge factor in the considerations and the way we evaluate different ideas and opportunities for the company. It's number one. I mean, reliability is number one on our list. Number one, it's required by SPP, but it's frankly, it's just an ingrained, I think thing at LES and probably all of the rest of our public power providers. So we take that very, very seriously, as do we balancing affordability, environmental stewardship, all of those other items that my previous testifiers have, have mentioned. So we hear you and understand.

**MOSER:** OK. That's what I'm getting at is you understand where we're coming from.

**DaNAY KALKOWSKI:** And yeah, and I guess I'd like you to have some comfort that we are taking it seriously at the board level and at the company level.

**MOSER:** OK, thank you. Mr. Chair.

**BOSTELMAN:** Thank you, Senator Moser.

**MOSER:** Welcome back.

**BOSTELMAN:** Thank you. Sorry, I missed your opening.

**DaNAY KALKOWSKI:** Well, I'm sorry. I thought I was going to slip out of here without you coming back.

**BOSTELMAN:** Got off easy, right?

**MOSER:** Two more minutes and she'd be gone.

**BOSTELMAN:** That's right. If you wouldn't have asked the question,  
[INAUDIBLE]

**MOSER:** I'm sorry.



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**BOSTELMAN:** No, you may have mentioned this before, but I'm curious that LES did receive some financial benefit I guess. There was some income that did come in.

**DaNAY KALKOWSKI:** Yes.

**BOSTELMAN:** What do you plan to do with those funds?

**DaNAY KALKOWSKI:** Right now, we don't have that determined. We passed a resolution early on where we set that aside right now, not counting it toward our revenue. At this point in time, we want to really kind of make sure you know, all of the balancing gets done with SPP and everything shakes out from a federal regulatory standpoint also. But no matter what decision, I mean, I think the board is committed to making sure it would go toward, you know, keeping the rate balance for our customers and reliability for our system.

**BOSTELMAN:** The other question, I guess, I think you kind of touched on some of the others. What is the definition of business risk when describing CO2 to us?

**DaNAY KALKOWSKI:** Right. And I don't think in our discussions when we were talking about our goal we really specifically said business risk. But I think the main thing from our standpoint is probably from the regulatory standpoint, the fiscal costs that could be associated with having the carbon generation.

**BOSTELMAN:** OK, thank you. Other questions? Seeing none--

**DaNAY KALKOWSKI:** All right.

**BOSTELMAN:** Thank you very much for being here.

**DaNAY KALKOWSKI:** Thank you.

**BOSTELMAN:** I appreciate it. Our last testifier for today will be Mr. Dennis Grennan from the Nebraska Power Review Board, and he is the SPP member that sits on the board. So with that, Mr. Grennan, welcome. Please state and spell your name for us.

**DENNIS GRENNAN:** Sure. Thank you, Mr. Chairman and members of the committee. My name is Dennis Grennan, spelled D-e-n-n-i-s, last name is Grennan, G-r-e-n-n-a-n. I live in Columbus, Nebraska, across town from Senator Moser. But we do see each other occasionally, and that's always enjoyable. Appreciate your visits. As Chairman Bostelman

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indicated, I am on the Power Review Board, have been on the last eight years. Unfortunately, I'm term limited, so I'm going off at the end of the year, which is a disappointment to me quite personally. But in those eight years, six of them, I've served as the Nebraska representative to the SPP Regional State Committee. And just real quickly, the Regional State Committee is made up of 11 commissioners from the states across the SPP. We meet as a committee in conjunction with the board of directors for SPP. The two main areas we're accountable for is cost allocation, which is determination of how transmission will be paid for as it's built out across the SPP. And I think you've heard some of that earlier, the highway byway that was established by the RSC 10 years ago or so. The other area is resource adequacy, which quite honestly, the RSC hasn't really spent a lot of time focusing on in my opinion, up to the February event. It was a wake-up call, I think, for the RSC. And just provide you a little bit more background on me personally, I worked for Nebraska Public Power for 32 years. I was in the generation side of the business for 20 years. I was plant manager at the Gerald Gentleman Station for eight years, went through the startup of those units and so forth; was vice president over all the fossil generation for NPPD for several years. I-- the last 20 years, I was in charge of transmission distribution system, dispatch, all the customer services area. So kind of both sides of the business, if you will. Just a quick story with that background, as I think back to the February event, I specifically remember listening to the forecast on Valentine's Day, February 14. It was cold already, looking at the forecast going, this is going to be a very, very cold event and it's going to be widespread and it's going to last several days. And coming out of the utility, utility business, we know those-- the combination of those factors really increases the load for extended period of time. I knew it was going to be very serious. That morning, the next morning, actually Monday morning, September {SIC} 15, I looked at the thermometer and it was 21 below zero outside. I stepped outside to get the newspaper and it didn't take me long to get the newspaper at 21 below. You know it's cold when you take a breath of air and it's frigid. It hurts. I went back inside. I pulled up the SPP website to see where is our energy coming from right now. And they have the pie chart there that shows you that it's updated every five minutes, I'm sure most of you looked at it. I looked at that pie chart and I saw coal about 45 percent, gas at about 35 percent, wind was about 10 percent, and the balance was made up of nuclear and hydro. And right then I said, you know, thank God, we do have those baseload units out there running. Thank God we do have coal, even though we don't like to talk about coal much anymore. But

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at that point in time, you know, it didn't matter much to me. Keeping the lights on is what mattered and keeping people safe and warm. So I looked at that several, several times throughout those days, and it didn't vary a whole lot. And it's one of those deals we've said before, no, wind wasn't the problem, and it wasn't the problem because we weren't planning on it. However, it wasn't the solution either. But we did rely on those other resources. And so as we've gone back and talked about that a lot at the SPP level to make sure as we address resource adequacy, what does that really mean? Resource adequacy means having that diversity of fuels out there and diversity of generation types. Not all machines run the same. They don't start up, they don't shut down, they don't follow load. And as you all know, as you heard from SPP, we rely on them to balance that generation versus load. All the time you got to follow it. So considering the time of day, I'm going to move into your questions. I had quite a bit of stuff prepared here, but again, I think most of it's been covered, to be quite honest with the SPP, with Lanny Nickel talking about that, but I do want to touch on those. And one of the first question was my impression of the completeness of the investigation done by SPP. It's extremely thorough and it's typical of SPP as they look at-- look at the issues, they analyze them very deeply. And let me back up and say SPP. SPP, yes, there's an organization in Little Rock, Arkansas, SPP and you heard from Mr. Nickel. He's the chief operating officer. But SPP is more about the members, the 106 members that are across 14 states. That's-- it's member driven and it's in practice and it's got a good side and they got a bad side. The good side is a lot of input, and certainly the utilities here in Nebraska and including myself on the RSC are given an opportunity to weigh in on issues, direct policy, make corrections, work on situations like we have in front of us; very, very much member driven. This report that was put together, 108 pages, 150 members participated in that, so it wasn't just a few. It was a lot. As indicated before, one of the members here from OPPD was on the steering committee to put that report together. So Nebraska is at the table with SPP in a big way. And that's very important to continue that. I said there's kind of a bad side. The bad side is it takes quite a while to get through issues when you have that level of participation. It just takes time to get everybody's input, everybody a chance to weigh in on it and talk and so forth and then get a direction established. But that's, that's the process. They're member driven. They're very transparent. And excuse me, and this report is put together in that same way. As indicated, you know, there was this report has 22 recommendations that are prioritized from tier one being the most important and so forth. What-- in addition to this report, as

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this came out and the RSC considered what was in the report, what the recommendations were, and what we are accountable for, we also, we the RSC, established another task force to focus in on two areas: fuel assurance and resource adequacy. They said that's our responsibility. SPP has identified it as one of the key things along with fuel availability, certainly, and we want-- we want to pursue that in a-- in a greater way. So we established 11-member task force. We identified 25 sub areas that we're going to look into. Those have been identified, laid out on a timeline and so forth. We have a member on that task force, the consultant to the Power Review Board, John Krajewski, is on that task force and we will be pursuing, following that very, very closely. I might mention my replacement is here today, Chuck Hutchison, who's already been participating in SPP activities and I think will do a great job stepping into this role. And that was a conversation we had yesterday with John on the phone about how he can follow this task force, one, to make sure the right things are being addressed, the right questions are being asked but it's done with a sense of urgency. Because I think it's been said here several times already, we do not want this to happen again and certainly we don't want it to happen this coming year. So with that sense of urgency and importance, we'll go forward, those issues will be addressed, and recommendations will be made. That leads into the second question, my thoughts on the recommendations given by SPP. I think they're right on target. I think they focus right in on the fuel availability, the resource adequacy. They're very thorough, but they are a work in progress. They haven't gotten to the point yet to know what will be implemented and that will come. But that will take a little bit of time. There's several initia-- initiatives, for example, around fuel availability. We've already talked about one, for example, on-site storage. If we're going to rely on the gas system to provide generation, how can we back that up to make it more reliable? Maybe it's on-site storage. That's not done easily or quickly if that is going to be done. Some of the other utilities, particularly here in Nebraska, already have backup in the form of oil. That's very, very good. But I think we need to go further, particularly as we continue the trend, which has been happening in the last 10 years across the SPP, of building more renewables, particularly wind, and then backing them up with gas. That's what we've done for the last 10 years. I'm not saying it's bad, but I think the February event is a wake-up call that says we better understand if we're going to rely on a fuel source like gas, which comes from another system over here, the gas distribution system. And you heard about that. There's several players in that, from the wellhead to the pipeline to the distributor and so

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forth. And those folks are bound together, as I understand it, mostly through contracts. So we've got to understand that. As Mr. Nickel indicated, we don't have authority over that. SPP doesn't have authority over it. The utilities here in this-- in this room don't have authority. They have contracts. So we got to make sure those contracts are right. What SPP can do is maybe tighten the restrict-- the requirements for credibility on those gas resources. And that is one of the issues that's been identified. Should we? And if we do, how do we do that? I don't have the answers to all that right now, but that's, that's got to be a question that gets answered. Third question was, do you believe SPP can enact these recommendations sufficient enough to protect Nebraska ratepayers from an occurrence like these outages happening in the future? I'm extremely confident SPP is going to follow through on these recommendations and they will enact through their members whatever can be done within limitations, and we talked about some of those limitations. What can you do on the gas supply, for example. But the rest of them, there will be a lot of recommendations that, again, I don't want to say SPP as an organization is going to do this, but through their members, they will decide which policies they all want to take on and what the rules are going to be and how they're going to operate going into the future. There's no doubt that that process will take place, not in my mind so. So that will happen. Those policies will be-- will be written and new rules will be put in place. I think the last thing I'd say that SPP will move at a rate as fast as they can but get it right so that we don't do something, that we don't set a rule, we as the industry across the SPP, that has unintended consequences that we go, that was not a good move. So we want to get it right. So with that, I'll stop. I do have some other observations I can share with you, but I think it'd be more useful time to get your questions at this point.

**BOSTELMAN:** OK, thank you. Are there questions from members? Senator Moser.

**MOSER:** Are the utilities required to put in infrastructure in lines, transmission lines to the solar panels and, and the wind generation towers? They have to provide the infrastructure to connect them to the grid?

**DENNIS GRENNAN:** Typically not. Typically, the developer actually builds the first piece of transmission out to the grid to connect with the grid, and then the utility is responsible for the grid from that point on. Now the grid, as you heard, there's an extensive planning process that goes into determining what that grid looks like and where

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those points of generation are interconnected, which does impact how that grid is designed and built out.

**MOSER:** But are those extra costs to the utility though?

**DENNIS GRENNAN:** Not that first piece of transmission. The developer [INAUDIBLE]

**MOSER:** But other transmission lines that they have to put in to connect them?

**DENNIS GRENNAN:** Yes, in some, some way, yes. Under that highway, byway system they-- let's say there's an interconnection that's provided to the grid, and it requires another 345 line from A to B. That's shared among the SPP members. If it's less than 345 but greater than 100, that's split up two thirds, one third so two thirds local.

**MOSER:** Does the presence of wind and solar generation create transmission problems that would have contributed in any way to the inability to keep the voltage up and keep the lights on in this particular event?

**DENNIS GRENNAN:** I don't think so, Senator. That system is built out to serve-- to serve not only any generator, whether it's wind or solar, but any generator that is interconnected. But it's also built out to move power from one end of the system to the other. So again, the old analogy is kind of like the interstate system. So it's, it's built out to benefit and enable that market to work so that people can actually buy out of the market. You don't really know where the power is coming from, but it is coming off of that transmission system, which does have to be robust enough to move adequate power across the system under any event. And that changes day to day all the time, depending on the load, depending on the generation.

**MOSER:** But what would those costs be to the utilities to connect those? I mean, are you talking hundreds of millions, billions?

**DENNIS GRENNAN:** To connect, I'm sorry.

**MOSER:** To connect the, the solar and the wind generation arrays to the, beyond where the developer pays.

**DENNIS GRENNAN:** Beyond the developer. Well, again, again, through the transmission planning process, which SPP, that's one of their responsibilities, and that's what they do. They would look and say is

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anything needed because it's quite possible nothing's needed. The transmission system's already robust enough to take that interjection of megawatts from a wind or solar facility. Or if something is needed, they'll determine what that is. And again, it would be shared. Now cost of transmission, it's very expensive. I think Mr. Nickel indicated over the last 10 years SPP and its members have spent \$10 billion on transmission.

**MOSER:** OK, thank you very much.

**BOSTELMAN:** Senator Brewer.

**BREWER:** Let's back up just a little bit on that last statement you made. Just so we have this clear, when it's 21 below zero and we've got however much snow came with that storm, you're not getting much use out of a solar panel or a wind tower, is that correct? So now what happens is that dumps that load onto something else. Correct?

**DENNIS GRENNAN:** That's correct.

**BREWER:** So if we get so much of that as our primary source and something similar to that happens again, finding other power is going to become a point, especially as there's more demand, more people, more houses, whatever, the system, I mean, it's going to collapse unless we're building more dependable, what I mean by that, 24-7-365 power, there's a point where we're going to, you know, in a wrongheaded way, put ourselves in a position of risk for businesses, for, for farms, for whoever the people that want to stay warm at 20-some below zero.

**DENNIS GRENNAN:** Um-hum.

**BREWER:** And that's why, you know, the comparison that SPP used of the summer and getting 120 degrees, that's, yeah, that's, that's an issue, too. But I can go outside and, and, and sleep, you know, outside the house if it's too warm. But if it's 27 below, people die. And so that's why, you know, there's a lot of folks that are sitting up paying attention and saying, hey, you know, we got to figure out how this happened, why it happened and all that. Now if we take a look at, at the Power Review Board, how much oversight do they have for windfarms, wind distribution? Do they-- do they get to have some say on how much and where and how it connects and any of that? Or how, how is that managed?



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**DENNIS GRENNAN:** Currently, we do not approve wind projects here in Nebraska. That was changed here a few years ago and I don't remember which, which legislation that was, but that was changed. Currently, we approve other projects submitted by the utilities here in Nebraska, whether they're transmission or generation, that's new projects. Other than that, we look at, make sure service areas are clear and resolve any service area disputes.

**BREWER:** So if we were to build a, say, say we're able to get the technology down and, and able to build a small nuclear reactor, that you would have oversight and be able to kind of manage where it went, when it went and how that integrated with the system. Is that accurate?

**DENNIS GRENNAN:** If a Nebraska utility, a public utility here in Nebraska built it, yes. Correct.

**BREWER:** OK, that's great for clarifying that because I didn't do that in my discussion. All right now as we look at what happened in February, they've got the recommendations; and, and I agree. A lot of these recommend-- recommendations look good. But we're right now, we're nine months since the event. We're just about to start getting cold weather. Matter of fact, Monday sounds like we're going to, you know, get below freezing. And as we get into November and December, we're going to start getting snow and storms and all that that comes with it. We probably aren't going to see any of this implemented this year, are we? I mean, because the machine as big as it is and slow as it is, as you described, by the time they're actually able to say, look at transmission or fuel availability and storage, we're kind of going to have to roll the dice this winter that we don't get another one of those because we're kind of in the process of fixing what we figured out is wrong.

**DENNIS GRENNAN:** I think you've described it fairly accurately because some of the-- some of the fixes are going to take longer than what the time we have between now and February or whenever. At the same time, I can assure you, our Nebraska representatives at the SPP have had that, the same comments as these recommendations came back. Let's identify what we can do first and quickly. And I made the comment at the board meeting in July, when the SPP board approved the recommendations, I said we need to identify those because February is what, six months away or January was six months away at that point in time, winter. And just like it's been stated here already, we do not want to repeat this again this coming winter. So whatever we can do between now and this



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winter, let's get it done. I know of a couple of things that have been done. SPP put together a survey for all the members, all the generation folks out there and said, tell us about your fuel resources, what kind of contracts that you have, how firm is it and so forth. They got 85 percent response back, which is really good on the accredited capability across the SPP. So that's being looked at. I don't know if there's actions going to be taken, but at least the members have paused to say, do we have the contracts we need in place? Do we need to go talk to our gas supplier or our fuel supplier? Maybe it's coal. I don't know. But let's go have the best answers we can for SPP. The other thing I know that's happening is the chief of operations, C.J. Brown at SPP, has already initiated calls with the major gas line suppliers. We heard earlier there's three of them in this area. One of them is Northern Natural Gas. He talks with them every month. Now again, they don't have any authority over the gas pipelines, but they can talk about what's critical on the electrical system. And are you going to be able to meet, meet those needs as we go into this next winter? What are you doing, if anything? And that's, now again, that's the major pipelines. That's the section in the middle. He's not talking to the people that run the wellheads or manage those, not to my knowledge anyway. But he is talking to those pipelines. Now those pipelines do talk to the wellhead guys and they do talk to the distributors. So that discussion is, is taking place. So a couple of things to at least raise the level of awareness and the criticality to the electric system. If we're going to rely on gas, that flows right back to their system.

**BREWER:** And you say the task force is 11 members from 11 states?

**DENNIS GRENNAN:** I'm not sure every state is represented.

**BREWER:** Because originally you're talking about 14 contributing states in the SPP was it?

**DENNIS GRENNAN:** Actually SPP, yeah, covers 14 states, but there's only 11 members on the Regional State Committee. Some states like Montana are just, it's not much, and they opted not to.

**BREWER:** And that was kind of my follow-up question is do they contribute equally to the SPP grid as far as the amount they contribute or take from it? Because I would think you'd have some big players and small players, they all get an even vote because it used to make me so mad. In Afghanistan, we'd have meetings with the

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coalition to talk about how we're going to do combat operations and Ghana and Denmark got the same vote as I did.

**DENNIS GRENNAN:** Yeah.

**BREWER:** And I, you know, we're the ones committing all the resources, and yet they get the same vote. Is this fairly even-handed?

**DENNIS GRENNAN:** At the Regional State Committee, yes. One member, one vote. It's, it's all the same.

**BREWER:** But like a Montana who doesn't really contribute much or take much, do they get the same vote as you do?

**DENNIS GRENNAN:** No. They're not even represented on the RSC.

**BREWER:** OK.

**DENNIS GRENNAN:** So in determining the membership on the RSC, there was a concerted effort to see how much load are you bringing to SPP, what's your generation, transmission facilities, etcetera.

**BREWER:** Good, excellent. Thank you.

**BOSTELMAN:** So I asked Mr. Nickel the same, this question, so I'll ask you. Currently, there are only production-based incentives in the industry and no financial incentives for liability. Is some of the task force or some of the planning now to change that because and it's called a merit stack or whatever wind is for-- wind is a must take and everybody else falls underneath. And not that, whether that's part of this or not, but if, if, if, if it's hydro that's getting financial incentivized and wind is not so they've got an unfair advantage on here on pricing.

**DENNIS GRENNAN:** Um-hum.

**BOSTELMAN:** How are we going to-- how are we going to-- is that being looked at? Because especially when we come back to what happened in baseload generation, if we continue to incentivize one over the other one can't financially survive anymore and it's going to go away. And what Senator Brewer was talking about before, that one that was incentivized survives and the other one doesn't, what's going to happen when we no longer have that baseload?

**DENNIS GRENNAN:** Correct.

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**BOSTELMAN:** And we're going to-- we're going to-- we're going to be in a world of hurt. So is that being-- is that part of what's being looked at or addressed? Can you say?

**DENNIS GRENNAN:** Yes. And it was being discussed way before the February event. Take a look at the market right now, which is an energy market. So you know how that works. If you sell energy or buy energy, there's, there's, there's a transaction there. We, we, several of us have been advocating for we need other market products, other ways of valuing those resources out there. And in other words, if it's not just about who's got the cheapest price tomorrow. It's about who can ramp up, who can ramp down, who can shut up, shut up, shut their units down, start them back up, all those characteristics it takes to operate the system. Those should be rewarded in some fashion in the market. And those have been identified in the recommendations and now that'll be a major policy change. But those, those have been recognized and I'm sure something's going to happen there. Yes.

**BOSTELMAN:** So I mentioned earlier, I think what we used to have SPES to rely upon. If you look at that system that was, it was baseload generation. So you pretty much knew what was coming from where. You don't have that anymore. I mean, that's gone away and it's going away more and more. And the more it goes away, the less resiliency you have, the less ability you're going to have to provide where you need to. One question that Senator Brewer kind of alluded to, but I have a question on it, too, is with all the different opportunities we have four SPP representatives from Nebraska, yourself and our public powers each have, how many people from Nebraska are on some way connected on a board or task force or whatever SPP? Is there a small number or a larger number?

**DENNIS GRENNAN:** It's a large number. I would guess on the order of 20, 25, something like that.

**BOSTELMAN:** And the reason why I ask is being a public power state, my guess is are the board meetings in Little Rock public? Are they open? Are they open meetings?

**DENNIS GRENNAN:** Yes, they are.

**BOSTELMAN:** And do they ever come to Nebraska--

**DENNIS GRENNAN:** They have.

**BOSTELMAN:** --for a board meeting?

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**DENNIS GRENNAN:** It's probably been four years ago. It was in Omaha.

**BOSTELMAN:** I didn't know because I mean, again,--

**DENNIS GRENNAN:** Yeah.

**BOSTELMAN:** --they haven't. How was-- how was someone from Omaha or Gordan or or Brainard going to be able to come, provide some information, some feedback or comment to the board if they have to fly to Little Rock? I know that you would be there, but it's not the same.

**DENNIS GRENNAN:** Gotcha.

**BOSTELMAN:** So I guess that's a question. The other-- the other comment or question I have is in 2011, FERC and I believe ERCOT and maybe SPP came out with a bunch of recommendations and especially for those gas generations to winterize them and that and they never did it. Or if they did it, they didn't do it to the point they needed to do it. Now we're talking about recommendations again. Are they going to get done and then what time? And it's my-- your concern and my concern is we can talk about this and we can recommend all we want, but if we don't do something, it's going to happen again.

**DENNIS GRENNAN:** Um-hum.

**BOSTELMAN:** So is there-- is there a action plan in there that says by these dates, we're going to have these things completed?

**DENNIS GRENNAN:** One report we really haven't mentioned today until just now is the report that came from FERC and also from NERC who is responsible for the reliability side of it. But as I read through that FERC report fairly quickly, but I did see similar recommendations. Now are they going to enforce those? I don't know. I mean, I can't tell you yes or no. But I would hope after this event, you know, and particularly with what the RTOs are doing, not only SPP, but MISO I think to the same extent, looking at the criticality of fuel availability and reliability and making sure we got resources out there. As we know, the system has changed. And you guys are right on mark when you say, you know, it's more renewables, it's more intermittent. Baseload is still there, but it's kind of like in the background, as long as wind is running, OK. But it's got to be there because that's what fills the gap when the wind doesn't blow or the sun doesn't shine. So we got to reward that. We got to do that through the market. We got to understand the importance of that. Someday maybe there will be a technology out there that's going to step in and

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replace that. But you know, again, I would just say, and this in my own personal observation, as we pursue decarbonization, just like has been talked about here, we've got to be realistic about what's out there in the future. Because if you can't see it on the horizon in the next 10 years, it's a rolling 10 years, in my opinion, based on what I've seen in this industry. So if it's not out there, if it's not being built right now, it's probably not going to be ready for another 10 years. So let's be realistic when we set these goals and make sure we keep reliability first and forward.

**BOSTELMAN:** I think the last question at what point is SPP breaching its contract because it cannot be relied upon to maintain reliable--reliability for Nebraska ratepayers?

**DENNIS GRENNAN:** If, if they were, you know, the main thing SPP can do, you know, in terms of reliability, we've talked about, you know, transmission and the operation of the system and the balancing authority, they do that from day to day. And they do a tremendous job there. Now, if they were to fall short there someplace or another, I know the members would take action right away. And the long-term transmission planning, I know what they do. I participated in it and it's extremely thorough and so forth. So I have no way of criticizing SPP as an organization. So they-- I think they're doing a great job and in what their organization has been hired to do. I think the members are participating. Things change. Events come along like we just experienced in February. There will be other events that come along that as, as we work together and share these resources, we'll have to keep addressing them. You can't go to sleep at the wheel. I found that out running Gentleman Station. It may be running fine today. Tomorrow you come in and you got a whole new set of problems. So all the time you're asking yourself what could happen next? What could happen next? What do we be-- what do we need to be planning on getting in place to offset that possibility? It's continuous.

**BOSTELMAN:** Thank you.

**DENNIS GRENNAN:** Yeah.

**BOSTELMAN:** Any other questions from committee members? Seeing none, thank you, Mr. Grennan, for being here today--

**DENNIS GRENNAN:** Thank you.

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**BOSTELMAN:** --for your testimony. It's been a long afternoon coming up against the weekend. I thank everybody for being here today. This will conclude our hearing. We did receive one letter. There was a letter of support, which is a little unusual, but it was-- we did receive one letter from a Timothy Kenny that we'll read into the record. So with that, we'll close the hearing on LR136. Thank you all for being here. Thank you for the testifiers for being here and sticking with us. Thank you.

\_\_\_\_\_ : Senator, thank you.