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Natural Resources Committee  
January 31, 2014

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[LB798 LB965]

The Committee on Natural Resources met at 1:30 p.m. on Friday, January 31, 2014, in Room 1525 of the State Capitol, Lincoln, Nebraska, for the purpose of conducting a public hearing on LB798 and LB965. Senators present: Tom Carlson, Chairperson; Lydia Brasch, Vice Chairperson; Annette Dubas; Ken Haar; Rick Kolowski; Ken Schilz; and Jim Smith. Senators absent: Jerry Johnson.

SENATOR CARLSON: Welcome to the Natural Resources Committee hearing. I am Tom Carlson, state senator from District 38, Chair of the committee. And welcome today, committee members present, and some are and some aren't. Some will be late and that's the way this goes because they have bills to introduce in other committees, so there will be some coming and going of members of our committee. To the far left in the empty chair, normally is Senator Rick Kolowski from Omaha, District 31; then next to him, Senator Ken Haar from Malcolm, District 21; next to him, Senator Jim Smith from Papillion, District 14; the empty chair next to him will be filled by Senator Ken Schilz from Ogallala when he gets here, District 47; to my immediate left is our legal counsel, Laurie Lage; to my far right is Barb Koehlmoos, the committee clerk; and next to her, normally would be Senator Johnson, he will not be here today; then Senator Lydia Brasch from Bancroft, District 16, and she's also Vice Chair of the Natural Resources Committee; and then Senator Annette Dubas from Fullerton, District 34. Our page today is Steven Schubert and Steven is a senior at UNL, he lives in Lincoln. If you're going to testify and you haven't gotten one as you came in, there are green sheets at either door. Please pick up a green sheet and make sure you fill that out before you testify and you can put it in the box there by Barb Koehlmoos, and then you'll be ready to testify. When you begin, take the chair. There's no reason to move the microphone because it will pick you up. And start by stating your name and spelling it. And if you fail to do that, I will have to stop you and have you do it before you can proceed. If you don't choose to testify, you may submit comments in writing and have them read into the official record. If you do have handouts, hopefully, you have twelve of them. If you don't, and you're short of those, then you can ask Steven, our page, and he'll help you with that. The committee members don't use devices during the hearing and electronic devices. And if you have cell phones, please either turn them off or put them on vibrate so it doesn't disrupt the hearing. We don't allow any displays of support or opposition for the bills as testifiers speak, so please pay attention to that. We are going to use the light system today, and after you've said your name and spelled it, then Barb will turn on the green light and you have two minutes, and then she'll turn on the yellow light and you have one minute, and then after three minutes, the red light comes on, and I'll ask you to wrap up your testimony. So, I'd ask you to cooperate on that and we'll get through our hearing in good fashion. Any questions before we start? All right, we'll open the hearing on LB798. Senator Christensen, you're recognized to open.

[LB798]

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SENATOR CHRISTENSEN: Thank you, Chairman Carlson and Natural Resources Committee. LB798 deals with the state law that provides a fiscal year of a power district created under Chapter 70, Article VI, to coincide with a calendar year. LB798 proposes to make an exception to this fiscal year requirement. LB798 would allow a power district whose only wholesale customer is a city or village, to use the same fiscal year as a city or a village. This would allow a city that operates its electric system through a power district to have just one fiscal year for all its operations. The city of Imperial established a power district to purchase wholesale electricity for the city of Imperial municipal electric department. The city of Imperial's electric department is the only customer of the power district. The city has had to have one fiscal year for the power purchasing district and one for the rest of its operations. LB798 is intended to allow Imperial, and any other city in a similar situation, to have one fiscal year for all its functions. There are several people who will testify behind me who will give you additional information on how the electric system is structured and need in this bill. Are there any questions? [LB798]

SENATOR CARLSON: All right. Thank you, Senator Christensen. Any questions of the committee? Okay, seeing none, and you'll be here to close? [LB798]

SENATOR CHRISTENSEN: Yeah. [LB798]

SENATOR CARLSON: Okay, thank you. And now we'll start with proponents, those in favor of the bill. And please step up, take your spot, turn in your green sheet. Welcome. [LB798]

JO LEYLAND: Thank you very much. My name is Jo Leyland. It's spelled J-o L-e-y-l-a-n-d, and I'm the city administrator in Imperial, Nebraska. I appreciate Senator Christensen introducing this bill for us. Imperial Public Power District was created in the early 1950s as Senator Christensen told you. It came about...really none of us are exactly sure why it was created, but it happened that Imperial was receiving its power through only one source, which created some problems during weather incidents and that kind of thing. So, IPPD was utilized at that point to build the transmission line so that Imperial could get feeds of electricity through more than one source. It was utilized again in the 1970s for a similar purpose so that now Imperial has three sources of power. So during storm events, we rarely have power outages, which is obviously an advantage. Imperial Public Power District does purchase wholesale power and sells only to the city of Imperial. They...IPPD owns its own transmission lines and substations, but those are managed and maintained by city staff. City staff does the bookkeeping, so we're really very linked to one another. IPPD has an elected board of directors and makes all the decisions for the organizations, but they do not directly employ anyone. In 2009, the audit firm that was doing the annual audit for IPPD gave notice that they would no longer be able to do governmental audits. In small firms, apparently there is some problem with meeting requirements for governmental audits. And in Imperial, we're in the southwest corner of Nebraska and there are not a lot of

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audit firms that do governmental audits. So, IPPD contacted the same audit firm that the city of Imperial used, and they were willing to do the annual audit for IPPD. However, because our fiscal years did not link up, it was going to cost so much more for them to come out on another calendar year basis, so IPPD changed their fiscal year to coincide with the cities. And then we found out through the State Auditor's Office that that was not allowed. So we would like to go back to the ability to audit both at the October...on the October 1 fiscal year. And the bill, as I understand it, is not mandatory but permissive, so other power districts would not have to change their fiscal years if they chose not to. But it would sure help, both from an efficiency standpoint, and an economical standpoint, for Imperial Public Power District, so. [LB798]

SENATOR CARLSON: Okay. Thank you. You come a long way to make your testimony but, of course, Senator Christensen, he drives it several times a week. [LB798]

JO LEYLAND: Exactly. [LB798]

SENATOR CARLSON: So we appreciate you coming. [LB798]

JO LEYLAND: Thank you. [LB798]

SENATOR CARLSON: And it's rather straight...wait a minute, it's okay. Rather straightforward request. Any questions from the committee? Okay, seeing none, thank you for coming. [LB798]

JO LEYLAND: Thank you. [LB798]

SENATOR CARLSON: All right, next proponent. Welcome. [LB798]

LASH CHAFFIN: Good afternoon. My name is Lash, L-a-s-h, Chaffin, C-h-a-f-f-i-n. I'm a staff member at the League of Nebraska Municipalities. And first, I'd like to thank Senator Christensen for bringing this bill forward. This concept was brought to the League about a year ago and beyond the initial questions of, now, why do you do it that way? We kind of settled on how it actually worked and we brought this before two committees of city officials and they both voted to try to get this bill introduced as legislation and that it was a good idea and made good governance. The...also I've been asked to let the record reflect that NMPP Energy is also in favor of this bill. Imperial Power District buys their electricity from the Municipal Energy Agency of Nebraska under the NMPP Energy umbrella, so. Will answer any questions? [LB798]

SENATOR CARLSON: Okay. Thank you for your testimony. Any questions of Mr. Chaffin? Seeing none, thank you. Any other proponents? Anyone in opposition to the bill? Anyone testifying in a neutral position? And seeing none, then, Senator Christensen, you're recognized to close. [LB798]

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SENATOR CHRISTENSEN: Well, thank you, committee. I appreciate your time. I know you've got another bill to go through here. It's nice to have a short, easy bill in front of you. And I would like to get this on consent calendar if it agrees with the committee. That's the question, I have. [LB798]

SENATOR CARLSON: Yes, questions? Senator Haar. [LB798]

SENATOR HAAR: Too easy for you, Mark. (Laughter) [LB798]

SENATOR CHRISTENSEN: I agree. [LB798]

SENATOR HAAR: No, you know, obviously this is a no-nonsense bill, but there are some reports that come out about all the public power districts and stuff. Will this raise any havoc with that kind of report or not? [LB798]

SENATOR CHRISTENSEN: No, it won't. [LB798]

SENATOR HAAR: Okay. [LB798]

SENATOR CARLSON: Any other questions? Okay, thank you. [LB798]

SENATOR CHRISTENSEN: Thank you. [LB798]

SENATOR CARLSON: And with that, we close the hearing on LB798. And we'll open the hearing on LB965. Senator Haar, you're recognized to open. [LB798]

SENATOR HAAR: (Exhibits 1, 2 and 3) Okay, I have some handouts, and I'll need one of each. Chairman Carlson and members of the committee, I think it's nice to have a little fun sometimes so there's a lesson in front of you in pinwheels. You'll be getting this map that shows several things. As you know, wind has been my passion, renewables in general, and this is the map from NREL showing what the developed wind capacity is for all the states. And then in a circle, you'll see a number on each of the top ten states. So you can see, for example, Texas, which is number one in wind potential, has 12,214 megawatts of developed wind capacity and so on. You'll notice number two is Kansas; number three is Nebraska in terms of wind capacity; number four is South Dakota and so on. What I did with the pinwheels, and I thought it would just be kind of fun, is to show you for these states, all the surrounding states, what their developed wind capacity is. And so each of those pinwheels stands for about 230 megawatts, and just like on this map, it's from December 31, 2012. So things have improved somewhat here and there, probably it's about the same. So, start with Senator Schilz. Senator Schilz, your cupcake represents Nebraska. (Laugh) And it's got two pinwheels so that's about, as you can see on the chart, 459 megawatts of developed electricity. Senator Brasch,

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you're Missouri. Missouri has about the same amount of developed wind potential as Nebraska. And as you'll notice from the map, Missouri isn't even in the top ten with wind potential. And then, the others, I believe, Senator Smith, if you count pinwheels, two, four, six, seven, you're going to be Wyoming, I believe. Senator Dubas, you're Iowa. Iowa has developed, as you can see from the map, about 5,133. So if each of those pinwheels is 250 megawatts, that's Iowa's development. And at first I was going to put the pinwheels in...just right into the cupcakes, but you would have had no cupcake left, so, be in Iowa. And Senator Carlson, I don't remember who you are, but it's on the bottom of your...if you pick that box up and look at it. [LB965]

SENATOR CARLSON: Colorado. [LB965]

SENATOR HAAR: Oh, Colorado, okay. And as you can see from the map, Colorado is about 2,300 megawatts of wind capacity. Then I want to go into a couple of events that have gotten me to where I am today with this bill. And I will explain, by the way, how this is different than LB567. Much of the testimony may be the same, but the bill is somewhat different. In July of 2012, I attended an NPPD meeting in Columbus, and I save way too much. This is still the document from that meeting. It was their presentation to the public at the Holiday Inn Express of their planning process. Near the end of the meeting when it was time for questions, because I always have questions, I said, well, so where are you modeling the externalities, and the externalities for those things that don't show up on your utility bill? And the answer at that time is, well, we can't really model things like health and so on, that's a policy decision made by the board members. But, you know, if the Legislature changes the mandate of low cost and reliable, then we will address it. Well, in September 2013, LES made an announcement that they had purchased wind power from Oklahoma. Now, they have said, and I believe this, it will save LES ratepayers \$50 million over 20 years. Part of that is because Oklahoma has a production tax credit so the Oklahoma taxpayers are incenting our lower cost. And why did they buy from Oklahoma? Well, they were following the law because the law says low cost and reliable. At least one board member that I talked to said, had it...were the law written differently, maybe that wind power would have been purchased in Nebraska. If it wasn't just low cost and reliable, but because you have low cost, reliable, there's a fiduciary duty to carry that through. So the best bid was from Oklahoma. On November 2013, there was an announcement by the Northeast Public Power District. I have that here, in which they're buying coal generated--and there's a little bit of hydro in that mix--but coal generated basically electricity from Kentucky. And they said at present the laws--and that's right in here in their announcement--they said, at present the laws of Nebraska require then Nebraska NPPD board, that's the Northeast Nebraska Public Power District board, to make this power decision purchase for our retail electric customers. The Nebraska laws require, okay, low cost, reliable. And then we've been hearing word, and I've talked to various NPPD board members, that there's at least one coalition, I'm not sure the exact word is cooperative perhaps, of about twenty rural electrics that form the Nebraska Generation and Transmission,

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NG&T, and basically they're saying to NPPD, you know, buy the cheapest and that doesn't include wind power. So it's interesting to start this by looking at what the current law says. If you look at your green copy, if you wish, but I'll just read this quickly. On page 2, this is what the law says now: In order to provide the citizens of the state with adequate electric service at as low overall cost as possible consistent with sound business practices and so on. So, there are two mandates there. One is as low overall cost as possible, and the other is adequate electric service. Now, I'm sure that's the part that's been interpreted consistently as reliable, but the law says, actually, adequate electric service. Then there's another...in another section of the law, 70-625.01 where it allows--and this is a quote--allow public power districts to promote economic development and job creation in rural areas. So that's an allowing. So then we get to LB965, so I'd like you to look at the handout that says Public Power Criteria-Bill Summary. What LB965 does is it requires that energy generation and purchase decisions must be based on all costs and all benefits, which I feel opens up new opportunities for all Nebraskans, especially rural Nebraska. It says, all costs and all benefits. Now, you can see under the lists of what costs include. And I'll take just a minute here. Energy use, of course, is vital to our needs, but many forms of energy have hidden costs and although these costs are not listed on our monthly utility bills, they are real. In some...and I've been reading, as you can tell, in some cases these are called private and social costs. The private costs are what show up on your bill. The social costs are those, I guess, you could call them subsidies that everybody pays. One of these, for example, is health costs and we'll hear more about that today. But just to let you know that in a publication from FERC and federal news, they say air pollution from electric generation is responsible for more than 29,000 premature deaths annually in PGM states. PGM states are...that's one of the RTOs, regional transmission organizations, in the northeast. It includes places like Maryland, New Jersey, the District of Columbia and so on. Then there are risks to the environment that don't show up on your bill, but we all pay for them. And depending on the testimony, I might go into some more of those later. So, LB965 defines cost and you can see as the cost of generation, current and projected fuel costs, costs of regulatory compliance, short- and long-term energy portfolio risks, environmental impacts including the cost of climate change, health impacts including costs relating to energy production. And I think from what you hear, in some ways you could say, our energy policy is part of our health policy in this state, and we have to start looking at that. Water usage and the fiscal impact of customer-owner dollars sent out of state. There is no residential property tax in Wyoming because we pay that in severance tax on coal. We pay their property tax. The benefits, as you can see from the handout, include economic benefits to the state or community which includes jobs and taxes, efficient use of resources, portfolio diversification, and so on. Things, benefits to all Nebraskans. So what LB965 is saying is that I want to see a new paradigm for public power boards that should consider a comprehensive cost-benefit analysis when generating or purchasing electricity. And, you know, if you pursue cost-benefit analysis, here's a quote. It says, the real trick to doing a cost-benefit analysis is making sure you include all the costs and all the benefits

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and you properly quantify them. So when you do a cost-benefit analysis, you weigh the costs and the benefits and then you make a decision, the bottom line. For an IOU, and independently owned utility, the bottom line is profit for shareholders and that's the way it should be. The bottom line for public power is...and I'm going to quote from the green copy here: In order to provide the citizens of the state with reliable--and this is how I would amend it--reliable and adequate electric service at as low overall cost as possible and to provide as many benefits to customer-owners as possible consistent with sound business practices. Real quickly how this would work. Already our utilities consider many things when they do their planning. The cost of fuel, the potential regulatory impacts and so on. And I'm saying that it has to include other aspects of the process. But we're not asking for new research on, for example, health. There's all kinds of information on the health cost and you'll hear some more about that later. So, we're saying, do what you've been doing, but include these other things that are already available in many forms in the literature. And then, the PRB, their responsibility would be not to do a determination as to whether all the costs and benefits were quantified precisely, but simply that every element had been addressed. Every element had been addressed. So we go from cost, low cost, reliable to a cost-benefit analysis of all of these factors. Why do we need to do this? Well, in my opinion, first of all, because the decisions that public power makes involve huge expenditures involving, sometimes, hundreds of millions of dollars. They're very long-term decisions. Many of these contracts go for 20 years. And there are impacts to these that we're now beginning to realize that affect all of us in society. For example, the health costs, the economic benefit. These are things that were probably not considered to be quantified when the first public power came into existence. So in conclusion, LB965 requires a comprehensive cost-benefit analysis when generating or purchasing electricity. It says, look at the whole picture, all the costs and all the benefits, take everything into consideration when making decisions on generation and purchasing. And then at the bottom of this page, you'll see what I consider the difference between these two, between this bill and LB567 from last year. So, I'm sorry about the length of the introduction, but it's quite a lengthy bill. [LB965]

SENATOR CARLSON: All right. Thank you, Senator Haar. Any questions of the committee? Senator Smith. [LB965]

SENATOR SMITH: Thank you, Mr. Chairman. Senator Haar, I have a few questions for you and when you look at the word that you're using "reliable," can you explain how you're defining "reliable?" [LB965]

SENATOR HAAR: I guess what I was trying to get at is in the past we've always heard low-cost reliable and that's really not what the law says. It says adequate. So, and adequate and reliable are, I think, are those similar...these are judgments to be made, of course. [LB965]

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SENATOR SMITH: In terms of power generation, the term "reliable" typically means uninterrupted, consistent, without interference. So is that what you're promoting? Is that your definition here? [LB965]

SENATOR HAAR: In my understanding, that's what you would consider to be reliable and this is, you know, what all the power districts work on is to have electricity there all the time. [LB965]

SENATOR SMITH: Okay. Now, the nature of renewables is not entirely reliable under that definition of uninterrupted. So on page 3 of the green copy where we talk about renewable energy facilities, it is also the policy of the state to encourage and allow opportunities for private developers to develop, own, and operate renewable energy facilities. And that's a line 11 on page 3. [LB965]

SENATOR HAAR: That's existing law. [LB965]

SENATOR SMITH: That's existing law. Would you be inclined then to want to modify that to keep it in line with the definition of reliable to include with that, other forms of low-emission energy, such as clean burning natural gas? [LB965]

SENATOR HAAR: Certainly, yeah. And... [LB965]

SENATOR SMITH: Okay. That was something we had on the floor last year in LB104, which did not have any support for that at that point. But that's something you would advocate for to help ensure the reliability component of the bill? [LB965]

SENATOR HAAR: Certainly. And if you look at the...again, I'm not going to go into these books, although I've read them. There's actually...you can pretty much quantify the cost of--and excuse my voice--coal versus natural gas, for example, for the generation of electricity. What the private costs are, what the social costs are, and so on, and the way I look at the whole issue is, you know, I wish I could snap my fingers and we wouldn't be burning fossil fuels anymore. That can't happen, obviously. There has to be a transition. And so, I certainly see natural gas as part of that transition, and I may disagree with some of my friends here when I say I think nuclear has to be part of that transition. [LB965]

SENATOR SMITH: All right. Another question for you, and this is page 2, line 6, where it talks about consistent with sound business practices. So the current law says, energy service at low overall cost consistent with sound business practices, and you're adding "reliable," so there will be reliable and low cost and it's determined with consistency with sound business practices. How do you define "sound business practices?" [LB965]

SENATOR HAAR: Uh-huh. Well, as you notice in line 5, I said, and to provide as many

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benefits. Right now when these kinds of decisions are made, there is no precise metric for even, you know, for what it says in the law right now, adequate electric service or sound business practice. That is why we have boards. I want to simply add to the definition of what they consider. [LB965]

SENATOR SMITH: Okay. So what I'm curious about here, currently in law we say that these things need to be considered consistent with sound business practices. I would suggest that all the language that's added in the bill, lines 14 through 24, are things you consider consistent with sound business practices. Is there redundancy in this language? [LB965]

SENATOR HAAR: There may be. And what we tried to do with the language is expand...expand the vision of what it is now so that...and, you know, some people might say, that's micromanaging, but I think we need to say, here are some of the things that have to be considered now that weren't considered before. [LB965]

SENATOR SMITH: But they're not all inclusive either? [LB965]

SENATOR HAAR: No, that's correct. [LB965]

SENATOR SMITH: And so, we're saying we want to measure every benefit, make certain that every benefit has been addressed, but we don't have a list that's all inclusive... [LB965]

SENATOR HAAR: That's correct. [LB965]

SENATOR SMITH: ...of the things to consider, so then I would suggest that that's why we have that language consistent with sound business practices so that we consider all those things. [LB965]

SENATOR HAAR: I agree. Yeah, yeah. And if you notice in line 5, it doesn't say every benefit. It says, as many benefits as possible. And so that qualifies it as well. [LB965]

SENATOR SMITH: All right. [LB965]

SENATOR HAAR: We may in the future come up with other costs and other benefits that we have no idea, but these are good questions. Thank you. [LB965]

SENATOR SMITH: All right. Thank you, Senator. [LB965]

SENATOR CARLSON: Thank you. Any other questions? Senator Haar, you mentioned two costs, social costs, what was the other one? [LB965]

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SENATOR HAAR: Private. [LB965]

SENATOR CARLSON: What's the difference between social and private? [LB965]

SENATOR HAAR: Well, the way it's used in the literature in these books is, private is what shows up on your bill. The social costs are those things that everybody pays for but don't show up on your bill like...and the biggest social cost that can begin to be quantified is health cost. The cost of the additional deaths and asthma and all those kind of bronchial disease. [LB965]

SENATOR CARLSON: Okay. All right. Any other questions? Thank you. [LB965]

SENATOR SMITH: Senator Carlson. [LB965]

SENATOR CARLSON: Oh, I'm sorry. Senator Smith. [LB965]

SENATOR SMITH: And I'm sorry, and I just want to make certain that maybe some of those that are here today and listening and maybe listening on TV understand what my initial question was dealing with, adding low-emission generation to renewable generation as part of this law. That was something we did have on the floor as an amendment last year, and it was not adopted. And there was very little support for my introduction of that amendment to add low-emission generation, which would help to address the exact things you're bringing forward. Any particular reason, you think, that we did not have the level of support on that amendment last year? [LB965]

SENATOR HAAR: I really don't remember, but I'll go back and look at it. [LB965]

SENATOR SMITH: Okay. [LB965]

SENATOR HAAR: And again, I think we have to realize that we're in a transition phase and it's going to take...it's going to take low emission ten, twenty years from now, it's all going to be a different picture. [LB965]

SENATOR SMITH: All right. Thank you, Senator. [LB965]

SENATOR HAAR: You bet. [LB965]

SENATOR CARLSON: Okay. Any other questions? Thank you, Senator Haar. [LB965]

SENATOR HAAR: Okay. Can I leave my stuff sit here? [LB965]

SENATOR CARLSON: Sure. I think so. [LB965]

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SENATOR HAAR: Okay. Thanks. [LB965]

SENATOR CARLSON: All right, we're ready to listen to the proponents. And again, I'll review with you that after you give your name and spell it, the light will come on, the green light for two minutes, then the yellow light for one minute, and then the red light. And I would...we have a lot of testifiers here today, and that's part of the purpose of a hearing. Try not to repeat what somebody in front of you has said other than, maybe, I just agree with so and so, and then add what you need to your testimony, if you would try and do that. Okay. Welcome. [LB965]

DAVID CORBIN: (Exhibit 4) Thank you. My name is Dr. David Corbin, D-a-v-i-d C-o-r-b-i-n. I'm an emeritus professor of health education and public health at UNO. I'm here today as the Nebraska affiliate representative to the Governing Council of the American Public Health Association which is the largest and most prestigious public health association in the world. Every year we have over 250 delegates representing all the states of the United States who deliberate on policies that we should pass, just as you are deliberating on policies now, to represent the views of our organization. And they must be rooted in scientific principles. I'm going to focus my testimony today on three sources. One, American Public Health Association policy affirming the necessity of the secure, sustainable, and health protective energy policy, which was passed back in 2004, a 2009 report from Physicians for Social Responsibility entitled Coal's Assault on Human Health, and the National Academy of Sciences 2010 report entitled The Hidden Costs of Energy. You have samples of all of those before you. Because of the time limit, I'll focus only on the hidden costs of coal since coal is Nebraska's largest source of energy and because Nebraska, according to the Lincoln Journal-Star just a few days ago, is fourth among the states in spending per capita on coal that's brought into the state primarily to generate energy. I've been involved in similar public health issues for many years when researchers made the connection between tobacco smoke and human health. In response to the scientific evidence on tobacco, the Unicameral has wisely passed laws to protect the health of people in Nebraska and signed on to the National Master Tobacco Settlement Agreement which has helped to fund our local health departments, tobacco prevention programs, and other health initiatives. The list of coal's contributions to major health effects, like tobacco's, is long: asthma, chronic obstructive pulmonary disease, increased infant mortality, lung cancer, a host of cardiovascular diseases and disorders, ischemic stroke and developmental delay. These diseases and disorders carry huge human, environmental, and financial costs. The parallels between the health consequences of burning fossil fuels and smoking are quite startling. And both industries denied the science connecting health with their products, both denied the economic costs to society, and both industries mounted expensive campaigns in an attempt to dissuade the public. As with the tobacco industry, we must use science as our guide regarding our laws and policies. And those reports that I gave you, and there are many others, but those are some of the main ones, show you what that connection is. LB965 is a step in the right direction to protecting our

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health, our environment, and our economy while...looking at all the externalities. When the true cost of coal is calculated by scientists, the actual cost to society is three times the cost of the actual coal. So it's inaccurate to say that coal is the cheapest form of energy. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Questions of Dr. Corbin? You testified last year didn't you, here? [LB965]

DAVID CORBIN: I did. [LB965]

SENATOR CARLSON: You did. I thought so. Any questions? Okay, thank you for your testimony. [LB965]

DAVID CORBIN: Thank you. [LB965]

SENATOR CARLSON: Next proponent, please. [LB965]

LAVERNE THRAEN: Laverne Thraen, 4728 Cass, Omaha, Nebraska. Based on the reading of the law... [LB965]

SENATOR CARLSON: Spell your name, would you, please? [LB965]

LAVERNE THRAEN: Laverne Thraen, T-h-r-a-e-n. And based on the reading of the law of reliability and least cost, it looks like every utility in the state has failed because humans don't use energy, buildings use energy. And every building in our community uses 60 to 80 percent more energy than it needs to use to perform the exact same task. So windows, doors, and insulation, it's very reliable. You can't turn that off. Orientation. This room for example, if you put the desk behind us and flipped us all and faced that way, this light could be used for daylighting these windows. This window also could be on tile on the floor heating the room. That's efficiency. And that is not being considered. We're talking "negawatts" instead of megawatts. The utilities should be purchasing this waste as baseload. For every kilowatt of coal you save at your home in this business, you save ten at the power plant. So if you want to reduce overall costs, you need to insulate everybody's buildings because that's what's using the power. So, if you only need one kilowatt of coal instead of ten, well, the power plant would only need to generate three, instead of 100. So nobody is considering purchasing efficiency as a power source. It's called "negawatts" instead of generating megawatts. And I really would like for you to somehow include that in your bill in the sense that if you lowered the overall usage, not using power is always going to be cheaper than using power. That's just the bottom line. So, anyway, I'm very excited about you guys even considering taking in more costs into the energy bill. I would rather have you call it instead of least cost, change that single word to "cleanest" cost because we all know, ultimately, if it's clean, it will be less expensive. Now you made a mention of interrupted

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renewable energy supply. Well, the nuclear power plant was off for two years, unexpected interruption. Coal plants get shut down all the time for cleaning and for rehabbing. They're currently fixing a boiler at OPPD right now in the north Omaha coal plant. Those are all interrupted energy suppliers. You can't say any energy system isn't interruptible. Okay? Germany, the leader in renewables and wind energy and solar, has figured out exactly by watching the weather. You can turn the weather on and they'll say, well, 50 mile an hour wind tomorrow, well, you know the wind turbines are going to be spinning. Oh, it's a sunny day tomorrow, you know, the solar panels are going to be on. So you can just simply look at the weatherman and his prediction and know exactly how much energy you're providing, and if those are going to be interrupted or not. So, there's my little thing. I don't know if I'm at three minutes or not, but please, efficiency, efficiency, efficiency, using less. Doing more with less is what I'm trying to say, not conservation. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you, Mr. Thraen. Any questions of the committee? Okay. Thank you. Next proponent. [LB965]

KEN WINSTON: (Exhibits 5, 6, and 7) Good afternoon. My name is Ken Winston, K-e-n W-i-n-s-t-o-n, appearing on behalf of the Nebraska Sierra Club in support of LB965. LB965 has been called the true cost of power act, but it also could be called the prudent power investment act. And as Senator Haar indicated, the public power districts are not in the business of making money, but rather they have a fiduciary responsibility to make the best investments on behalf of their...of the public. And in order to make the best decisions, they have to consider all the potential costs and benefits. Now, here's a couple examples of costs and benefits that aren't being considered. First of all, water usage is not currently being considered. Fossil fuel and nuclear power production requires enormous amounts of water. The Union of Concerned Scientists has calculated that the Sheldon Station uses approximately 1.5 billion gallons of water per year, or about 4,500 acre-feet, and they consume a significant portion of that. This is water that could be devoted to purposes that are considered more beneficial under Nebraska law, such as agriculture and domestic use. It's also important to consider whether energy generation keeps money in the state or sends it away. Every dollar kept in the state of Nebraska is a dollar that gets spent in the community and is multiplied. It also provides revenues for state and local government. And as Mr. Corbin indicated, Nebraska residents spend about \$203 per person annually, or about \$365 million total per year on coal to generate electricity. That means about \$1 million a day is going out of the state of Nebraska in order to purchase coal. This provides economic benefits for other states, but not for the state of Nebraska. In contrast, the booklet that I passed out regarding the tax benefit of windfarms, a windfarm uses no water, emits no pollutants into the air, and can provide significant economic benefits. A 200 megawatt windfarm, according to that study, would generate \$1.3 million in annual property taxes, of which about \$950,000 would be distributed to local public schools. So this provides a significant benefit, or could provide significant benefits for local schools. Finally, prudent investment considers

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the statewide impact of energy decisions. Economic benefits in rural Nebraska flow to Lincoln and Omaha in the form of revenue and expenditures that enrich our entire state. At a time when many economists are predicting a downturn in the rural economy, it behooves public policymakers to create policies that benefit...that generate economic benefits that will withstand that downturn, such as wind development. LB965 provides a policy framework that supports prudent energy investments to benefit all Nebraskans. We would ask that LB965 be advanced to General File. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you, Ken. Any questions of the committee?  
Senator Smith. [LB965]

SENATOR SMITH: Thank you, Mr. Chairman, and good afternoon, Mr. Winston.  
[LB965]

KEN WINSTON: Good afternoon, Senator Smith. [LB965]

SENATOR SMITH: I want to circle back around to some of the same questions I had with Senator Haar during his introduction. How do you reconcile the word "reliable" with the inconsistent nature of renewable generation in this bill? [LB965]

KEN WINSTON: Well, actually, I would...the way that I would look at it is that, and the fact that Senator Haar is adding it, it's my understanding it was because of the fact that there's always this references that it should be reliable, low cost. And he said, where is it in the statute? And I said, it's not there. And so he said, well, we should add it. So that was my understanding of his original intent. Now, as far as reliability, I know that a number of states and a number of utilities have made major investments. For example, in Iowa, as Senator Haar indicated, they made over 5,000 megawatts of wind investment and yet it's very reliable. And a large part of that is, as Mr. Thraen indicated, well, obviously it's a lot more sophisticated than just looking at the weather, but they are constantly monitoring meteorological conditions. And so they know when they're going to be able to have that on line and when it's not going to be on line. And so, you can be very reliable and use lots of intermittent resources and still be very reliable. [LB965]

SENATOR SMITH: But the bill would imply that if you're looking at all the costs and all the benefits, and you have a low emission source of generation, other than renewable such as natural gas fire turbines, and you're making that comparison of pros and cons between all the costs and benefits, and you factor in reliability--and when I talk about reliability I'm talking about the hour to hour dispatch of generated power--that you may want to consider sources other than renewables. But yet, the bill does not include any reference to anything other than renewables which, again, I think we can all agree, that the sources of renewable generation, are not consistent in hour to hour dispatching. So, going back to...again, circling back around to the question I had for Senator Haar, we're only looking at renewable in this bill. Why would we not also open it up to look at

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low-emission forms of generation, if we're adding the language, reliable? [LB965]

KEN WINSTON: Well, actually I would disagree a little bit with your interpretation of the bill. And...as I think I responded to a question from a senator last year, that's always bad form to disagree with a senator when you're sitting in this chair, but I don't think that the bill is specifically focused on renewables. There is some language about renewables in current law that is part of the statute that is being amended. So I think that's what you're referring to. But actually the way that I read the statute, it's fairly...or the bill, it doesn't necessarily prefer one form over the other. It says you have to consider all the costs and all the benefits. And the costs may well be, and there was a study...a gentleman who spoke in favor of...in support of LB567 last year, one of the things that he pointed out is that some of the things that we consider lowest cost today are actually the riskiest and highest cost investments down the road. And so that would be the way that I would interpret the bill. [LB965]

SENATOR SMITH: Right. And first of all, it's okay to disagree. I appreciate, you know, the challenging me if you feel as if I'm not interpreting something correctly, so you're always welcome to do that, so. But if you look at, going back to this bill, it's very specific to renewable sources of energy. It's very specific. It's not open-ended. It's very specific to renewable energy facilities. And there was a legislation that we looked at last year, LB104, which was a wind generation bill, and at that time, there was an amendment to introduce low-emission forms of energy along with that so we could give utilities better choices. You did not lobby, you did not help with that amendment at all, leaving us to only see renewable forms of energy in this bill. So it does limit what we can look at. And so, I'm going to just leave it that I...if we're limiting this to renewable and we're adding in "reliable," I think you're putting the consideration of renewable forms of energy at a disadvantage. [LB965]

KEN WINSTON: Well, I'm not sure that I'm following everything that you're saying, but one thing that you said earlier when you said that you thought that the items in lines 14 through 24 were actually definitions of sound business practices, I would certainly agree with that statement. So...but the idea would be that everything would be competing. So if coal...say the coal price right now is very cheap, but you would have to look at what are going to be the long-term impacts of that? Is there an economic benefit in the state of Nebraska? Does it consume water? Is there a health impact? If there's mercury being deposited in the water bodies of the state, if there's studies that show that there's asthma in the neighborhood of...or high incidents of asthma in the neighborhood of the power plant, that's something that should be considered. So, those are the kinds of things that the bill directly addresses. Now, I believe the language that you're referring to is current law. And the Sierra Club has a position of supporting renewable energy and we're...but we don't support expansion of gas development and that would be a long discussion, which I would be glad to go into you with. We do support gas for peaking plants as a means of bringing more renewable energy on line. So just to clarify...to let

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you know what our position is on that subject. [LB965]

SENATOR SMITH: All right. Thank you, Mr. Winston. [LB965]

KEN WINSTON: Did I explain what...that adequately? [LB965]

SENATOR SMITH: I understand. [LB965]

KEN WINSTON: And I'd be glad to visit with you more privately about that. [LB965]

SENATOR CARLSON: Okay. Any other questions of the committee? Thank you for your testimony. [LB965]

KEN WINSTON: Thank you, Senator. [LB965]

SENATOR CARLSON: Next. Welcome. [LB965]

CYNTHIA TIEDEMAN: Thank you. My name is Cynthia Tiedeman, T-i-e-d-e-m-a-n. As the Natural Resources director for the League of Women Voters of Nebraska, I'm speaking in support of LB965. I'm especially speaking in support of considering the three factors, the greenhouse gas emissions contributing to climate change, the effects on human health, and water usage. Defending the environment is a League priority issue. Our national league president, Elizabeth McNamara has called climate change the greatest challenge of our lifetime. Greenhouse gases contribute to climate change. Climate change comes at a high cost to all of us, contributing to more frequent and deadly weather, resulting in billions of dollars of recovery for communities and government each year. It makes sense to consider the amount of greenhouse gas emissions. It makes sense to protect our children, our state, and our nation from the devastating effects of climate change. Regarding the effects on human health, peer reviewed at scientific research links air pollution and public health problems such as heart disease, asthma attacks, and other diseases. The pollution from public power generation should, most certainly, be weighed in relation to public health. Lastly, the League of Women Voters of Nebraska recognizes Nebraska's water as a great resource. An extensive League water study focused on water quantity and also quality management was addressed. Water quantity and quality should be considered when making energy generation decisions. LB965 is a step toward protecting and wise management of natural resources and public health, which is critical to our state's future. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Any questions? Thank you. Next proponent. Welcome. [LB965]

PATRICIA FULLER: Welcome back. My name is Patricia Fuller, F-u-l-l-e-r. I'm from

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Council Bluffs, Iowa, so that puts me in one of the top cupcake states, (laugh) and producing almost 5,000 megawatts of wind energy. I'm also a retired nurse and I think one of the reasons I'm concerned is that the decisions that are made by OPPD also affect the people of Council Bluffs. The river doesn't divide us there. Myself, along with other nurses, we've been talking to OPPD this last year about some of the health impacts of burning coal, and we very much welcome that this bill has come back. We do feel that public power should consider health. If a product that you're producing, such as coal, emits 50 different air toxics, including acid gases, particulate matter, then there's bound to be respiratory consequences, cardiac consequences. There can be little debate that both mercury, soot, or particulate matter are harmful to our health. Coal fire power plants are the largest sources of mercury in the United States. The north Omaha plant emits more mercury than any other plant located in the city the size of Omaha or larger. According to the Centers for Disease Control and Prevention, 8 percent of American women of childbearing age had unsafe levels of mercury in their blood putting their newborns at risk. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, immune system of people of all ages. There's a growing body of research that links fine particulate matter, commonly known as soot, with increased rates of asthma and other respiratory diseases. The primary one again, is PM2.5 and that's the most hazardous because it's about the size of a human blood cell and can be inhaled very deeply into the lung. According to the Omaha Asthma Alliance...and this is old research. We did talk to Douglas County today about doing more research on asthma in Omaha. Parts of Omaha have some of the highest rates in the country, and Omaha asthma rate hospitalization has nearly doubled in the national average. So the highest rates are east of 42nd Street, with the highest number of asthma-related emergency room visits were in northeast Omaha. Again, this is old research and we would like to see that updated. There are, obviously, other pollutants that contribute to respiratory disease and premature death. But we feel that when clean renewable energy is available at a pretty low cost, this is the path that we should take. Iowa, for example, has had a renewable energy standard since 1983. I'm a MidAmerican customer. I've done a lot in wind generation. And we're also paying a whole lot less for it, so. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Now, we may ask you some questions here. Any questions of the committee? I'm going to ask you one and it's not to embarrass you, but one by one and I remember our testimony that we had last year. If you moved over to the Nebraska side and became governor, how quickly would you try and outlaw coal fired electrical generation? [LB965]

PATRICIA FULLER: (Laugh) Pretty quick, yeah. [LB965]

SENATOR CARLSON: Pretty quick. (Laughter) Okay, thank you. Any other questions? Thank you for your testimony. Welcome. [LB965]

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MARK WELSCH: (Exhibit 8) Thank you, Senator. My name is Mark Welsch, W-e-l-s-c-h. I live at 5611 Howard Street in Omaha, Nebraska. I want to thank Chairman Carlson and the committee members for holding this public hearing on a very important bill, LB965, introduced by Senator Ken Haar. I'm here today speaking with two hats. One is as a 56-year-old family farm kid, but first I will speak as an owner and customer of OPPD. And I will tell you why this bill is important to people on farms and in cities. First, I'm extremely proud of the work done over the past few years by the OPPD board of directors and their senior staff. Four years ago in 2010, the OPPD board set a goal of producing 10 percent of their electricity from wind energy in ten years, by 2020. OPPD has amazed everyone by negotiating with windfarm developers and agreeing to purchase their electricity for what CEO of OPPD, Gary Gates, calls a very, very low price. OPPD is a leader in this state, region, and possibly the nation by leapfrogging their current goal of producing 10 percent of their power from wind by 2020. They will be getting 30 percent of their retail power from windfarms next year, in 2015. This is five years before their much lower goal. This is amazing. They tripled their goal in half the time. They have proven that public power can make this happen in the fourth windiest state in the nation. OPPD is probably generating at least 20 percent of their power from another noncarbon fuel source, the recently rebuilt and restarted Fort Calhoun nuclear power plant. They've taken advantage of the downtime caused by the flood of 2011 to do work that was needed to assure the plant is ready to run for at least another 20 years. By the end of next year, at least 50 percent of OPPD's retail power will be generated from noncarbon-based fuels. This positions OPPD to avoid a lot of the extra costs that will be caused by EPA regulations on carbon dioxide pollution, and higher costs of coal that will be passed on to their customers. Now, as an aging farm family kid, I'm pleased that OPPD's actions because it will help protect my families and all other farms from catastrophic climate change. I'm one of a growing number of Republicans who have accepted the overwhelming climate scientist consensus that climate change is happening because humans are burning fossil fuels. Agriculture is the lifeblood of our state. Farmers, especially dryland farmers like my family, need reliable weather with rain and dryness at certain times. But all farmers who grow corn need temperatures that are not too hot when the corn is pollinating, or they will get reduced or no yields. Weather extremes that are caused by burning fossil fuels will take the little profit that is in farming out of too many years. This could bankrupt many farmers and ranchers and ruin agriculture, as we know it, in our state. If Nebraska farmers want to be able to continue to grow corn, our public power districts need to stop burning fossil fuels. We need to show the rest of the country and the world that it can be done, and OPPD is already showing us how. I hope more elected officials, especially Republicans, will accept what the scientists agree on, and take bold action to reduce carbon dioxide in our atmosphere. I hope the committee will give serious consideration to the concepts laid out in this bill because they are concerns that the entire Legislature deserves an opportunity to discuss. Thank you for your time. I'm sorry I went over, Senator. [LB965]

SENATOR CARLSON: Okay. Thank you. Thank you, Mr. Welsch. Any questions of the

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committee? Yes, Senator Smith. [LB965]

SENATOR SMITH: Thank you, Mr. Chairman. Thank you, Mr. Welsch, for being here today and for testifying. And you painted a really good picture of what OPPD is doing and I agree with you. OPPD is a fine company and I think they're very responsive to the communities they serve. So what more would you have seen them doing had this law been in effect, than without this law? [LB965]

MARK WELSCH: You know, I'm not sure that OPPD would do more than they're already doing. You know, I'm not privy to their internal conversations, but OPPD is, like I mentioned, is a leader in our state and possibly the nation as far as how quickly they have purchased wind power from private windfarms and they're just doing a great job. I wish and hope and pray that other power districts in our state, where they are building their power plants, or getting their power from other districts, realize that this is cheap power and we should be using that. It's not just cheap today, but it will be relatively speaking, I think, cheaper in the future for...and if I may, our state is very large. And if it's not windy here, it's windy over there. So if you put up enough wind towers, like they have all along Iowa, along their Interstate, it's going to be blowing somewhere. So reliability, when you stretch it out, I think it...from wind power, I understand it will be shut down here, but it's going to be blowing over here. [LB965]

SENATOR SMITH: And the question is whether...you know there's a diminishing effectiveness and efficiency with a transmission of power over long distances as well. So thank you. Appreciate it. [LB965]

MARK WELSCH: Certainly. Certainly. [LB965]

SENATOR CARLSON: Okay. Any other questions? Thank you for your testimony. [LB965]

MARK WELSCH: Thank you, Senator. [LB965]

SENATOR CARLSON: Welcome. [LB965]

WILLIE HAMILTON: My name is Willie Hamilton. H-a-m-i-l-t-o-n, and I'm the executive director of Black Men United. First of all, we believe that the cost should be considered besides the bottom line, such as the health costs that affects on the community and planet, and also we should be looking at renewable and reliable private and social costs as risks to the environment and climate change. Because there's so many health issues in the north Omaha community, and tied to the coal plant and lead, it is imperative for us that cost-benefit analysis should be a prerequisite for any new acquisition or building of any new energy facility. Again, I want to thank all the discussion around this, but I believe from living in that particular zip code, 68104, 68110, that the evidence speaks to

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itself when it comes to the health effects of the coal plant. So again, I thank you so much for allowing me to come and speak on why I support this particular bill. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Any...now, just wait a minute. (Laughter) Any questions of the committee? [LB965]

WILLIE HAMILTON: Still trying to get out of here quick. (Laugh) [LB965]

SENATOR CARLSON: You're not going to get away from Senator Smith. (Laughter) [LB965]

SENATOR SMITH: Someone has to keep the conversation going, right? Thank you, Mr. Hamilton. Thank you, Mr. Chairman. And thank you, Mr. Hamilton, for being here today and nice testimony. And you're speaking primarily on the matter of the health consequences to the generation of power. And I know in the zip code you were referring to there, you're dealing with a coal fired plant. You're not opposed to low-emission fossil plants necessarily, then. So say for the conversion of a coal plant to a natural gas that burns low emission, that would be acceptable? [LB965]

WILLIE HAMILTON: Yes. [LB965]

SENATOR SMITH: Okay. All right. Thank you. [LB965]

WILLIE HAMILTON: Thank you. [LB965]

SENATOR CARLSON: Any other question? Thank you for your testimony. Next proponent. Welcome. [LB965]

GRAHAM CHRISTENSEN: (Exhibit 9) Thank you, Chairman Carlson and members of the Natural Resources Committee for allowing me the chance to come speak to you on this important legislation today. If I lose my voice, I've been battling a cold, so I apologize ahead of time. I'm the president of Burt County Wind. [LB965]

SENATOR CARLSON: Name and spell it, please. [LB965]

GRAHAM CHRISTENSEN: Oh, excuse me. Graham Christensen, G-r-a-h-a-m C-h-r-i-s-t-e-n-s-e-n, president of Burt County Wind. I reside west Omaha and will be moving back at some point to my family farm by Oakland, Nebraska. Burt County Wind is a 22-member LLC comprised of farmers from around the Burt County area. This bill initially came...the idea initially came from several folks that were involved with this group. And the reason that this happened is because every time we would talk to our friends at public power, we would be told that low cost, reliability, everybody knows we need reliability. But low cost and everybody knows we want to search for the lowest cost

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options, but we felt that we weren't looking at the long-term picture and we weren't looking at economic development. And economic development is something that is very key for us to factor into these kind of equations. I've passed out something that I'd like to run through with everybody. I'm going to have to do this quick, so bear with me. But the front page of this is based on numbers that we have stripped right out of our project pro forma from the latest bids that we have done with our public utilities, and also updated wind speeds from met towers that have been up for almost four years now. And what you can see is that out of a total of about \$61 million in net electricity revenues, we're able to, if we dedicate ourself to finding ways to have ownership options in the energy that we produce in the future, we have the potential to return almost \$40 million out of the \$61 million in net electricity revenues back into the state. These top four lines, these are new revenues that ownership models can actually bring to the state of Nebraska by teaming up with local construction, local banking, local equity financing, and also just having local ownership. And on the back of that sheet is an analysis that NPPD actually did that also shows that economically, ownership projects like Burt County are number one over the life of the project. And then this third sheet is an investment that Burt County Wind has made in the spinning wind farm up in Minnesota that uses the ownership model. We never want to have to be able to spend our dollars in Minnesota again when we're investing in our energy. We want these opportunities right here in Nebraska. This is extremely, extremely important at this time. We have a chance to do things in a certain way that create more economic development, but we need bills that are looking at the whole picture, all the costs included. All the dollars need to be on the table from here on out and this bill does that. And I would just say one final thing in closing. You know, it's not anyone's fault where we are today, you know, as far as the portfolio that we have. But we are in a changing time and it's what is to come in the future, you know, as far as our decision-making process that really matters. This bill would be a giant step in the right direction to looking at the big picture. [LB965]

SENATOR CARLSON: Okay. Thank you. Questions from the committee? Yes, Senator Brasch. [LB965]

SENATOR BRASCH: Thank you, and thank you for coming forward today. And as you know, Burt County is in my district so I will be brief, but...and I'm familiar, very familiar with the studies and the time and the due diligence and great lengths Burt County has gone to in being accurate in their research. And the fact that I believe I know is that with these numbers, that was done by a third party independent. It was not done within your company. Is that correct? [LB965]

GRAHAM CHRISTENSEN: The first page is an analysis that's stripped off of our pro forma that was done by our developer, Jewel Wind Energy, and is based on actual data that we've been using in bidding and also in testing wind speeds. The back number was...the back page was an NPPD analysis done by NPPD economist, Ken Lemke. [LB965]

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SENATOR BRASCH: Very good. I just wanted to establish that fact because I do realize that your project and the company is based just, what, 30 miles from Omaha? From metropolitan city? [LB965]

GRAHAM CHRISTENSEN: A short hour, yes. [LB965]

SENATOR BRASCH: A short time and your accomplishments have been written up in trade journals across the country, is that correct? [LB965]

GRAHAM CHRISTENSEN: This is true. [LB965]

SENATOR BRASCH: And you still remain enthusiastic. I'd like to commend you on that. (Laughter) [LB965]

GRAHAM CHRISTENSEN: Thank you, and we believe we have a model that, you know, is strategically thought out. We could start here and spread across the state for the greater benefit of an entire community. [LB965]

SENATOR BRASCH: Absolutely. And so thank you for your diligence, coming forward, and look forward to hearing from you again. [LB965]

GRAHAM CHRISTENSEN: Thank you, Senator Brasch. [LB965]

SENATOR CARLSON: Okay. Thank you. Any other questions? I have one. Would you take this sheet. And I think, if I'm looking at this correctly, at the bottom it's over a 20-year life of the project. [LB965]

GRAHAM CHRISTENSEN: It's true. [LB965]

SENATOR CARLSON: So over the 20-year life, the total land lease payments would be \$720,000? [LB965]

GRAHAM CHRISTENSEN: Yes. To comment on that, Senator Carlson, yeah, that's accurate and more land lease payments have been fairly standard especially at the time when we started this. This is an ownership in a local investment model so most of the returns coming back into the community as far as landowners that are taking place, the 22 landowners that are taking place will actually be seen under the in-state sponsor equity investor return. And that would be \$4.5 million so that would be split amongst investors, you know, in the community as well. And actually, we opt in and have additional investment opportunities that come that allow a broader group of folks as this Minnesota project did that we invested in as well. But that's, you know, how the dollars are more made in this. And on that, I would also point out that our landowners have all

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invested private money to do, you know, the steps to get us into the place we are to do all the feasibility studies. So we have dedicated, you know, our own dollars knowing that there's risk in doing this, however, believing in this strong enough where we wanted to pursue this. [LB965]

SENATOR CARLSON: Okay. So in terms of return then to investors, it's the \$720,000 plus a \$4.5 million. [LB965]

GRAHAM CHRISTENSEN: Yes, that would be pretty accurate. And then the in-state tax equity investor return would be equity partnership that is also local investment. And, for example, there's companies currently in Nebraska, one that I would mention, would be one that helped do that property tax revenue study, Blue Stem, who is currently a Nebraska-based company doing equity partnerships. [LB965]

SENATOR CARLSON: Okay. But in terms of cash flow, it's really the \$4.5 million plus the \$720,000. [LB965]

GRAHAM CHRISTENSEN: Yep, more folks, not just the three landowners, that have turbines up in our project tract. [LB965]

SENATOR CARLSON: What...how many towers are there? [LB965]

GRAHAM CHRISTENSEN: This is a smaller project and we've dealt with economies of scales issuing this. And another reason why we like this bill for including all the dollars on the table, and so this is a six-turbine project compared to a lot of the bigger ones that go. Six turbines, about two megawatts each for an approximate ten to twelve megawatts. [LB965]

SENATOR CARLSON: Okay. That's where the twelve comes from. Okay. Thank you. Any other questions? Thank you for your testimony. [LB965]

GRAHAM CHRISTENSEN: Thank you, Chairman Carlson. [LB965]

SENATOR CARLSON: Next. Welcome. [LB965]

KIMBERLY MORROW: Thank you. Good afternoon. My name is Reverend Kim Morrow, M-o-r-r-o-w, and I speak to you as a representative of the faith community in Nebraska. I serve as director of Nebraska Interfaith Power and Light, an organization that seeks to bring the faith community together on sustainability issues, including climate change and environmental stewardship. I also serve as minister of sustainability at First Plymouth Church, a congregation of 3,500 people here in Lincoln. And on behalf of all the people of faith in Nebraska who believe that climate change is the most pressing moral issue of our time, I offer my support of LB965. In the second creation

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story in the book of Genesis, we read that God calls for His creation from the ground itself. All of life, animals, plants, humans, have their common origins in this sense of the sacred and fertile ground. Scripture says that God then put the first human in the Garden of Eden to till it and to keep it. Not to plunder or exhaust it, but to keep it. In Deuteronomy, we read that the Lord, your God, is bringing you into a good land, a land of flowing streams, a land of olive trees and honey where you will lack nothing and where you will bless the Lord, your God, for the good land He has given you. In Psalm 104, we hear a moving testament to the awesome beauty of creation that God has made. We're all living streams...all living systems are dependent on one another to sustain the gift of life. In these examples we are reminded that we are only here but for the grace of God who brought forth all of creation in God's image. The land on which we live has been entrusted to us as a gift of life, and we have been asked from the beginning to be its stewards. We depend on the earth for our very lives. Unfortunately, the reality of climate change has placed this dependency in danger. Climate scientists are unanimous in their warnings of a significantly altered climate in the years ahead and the dramatic effects it will have on agriculture, public health, housing, transportation, the economy, and more. We are at a time when the solutions of the past are no longer viable. We must take action in every way we can. Coal plants are the nation's top source of carbon pollution and the main contributor to climate change. Power plants emitted 2.1 billion metric tons of greenhouse gases into the atmosphere in 2012, about 31 percent of the total U.S. production. In addition, coal plants are responsible for releasing sulfur dioxide, nitrogen oxides, mercury, and particulate matter into our air and water. I feel quite sure this is not what God intended when he promised a good land to his people. We have the opportunity, however, to change this. I have worked with our public power districts for many months now on efforts to help them move off their reliance on coal and to adopt more renewable energy. Understandably, perhaps, they want to rely on time-tested solutions that have delivered low-cost reliable electricity to Nebraska for generations and they are reluctant to make changes. In order to make the significant changes needed for our future, they will benefit from the support and structure of legislation to guide their choices. And that is why I think that LB965 would go a long way toward opening up renewable energy solutions in our great state. This bill would allow the utilities to stay true to their mandate of providing the lowest cost reliable energy to their customer-owners, but would expand the definition of cost to include the real factors of climate change in environmental degradation. This would open up a far wider range of conversation in the board rooms of our public power districts and allow for forward-looking decisions to be made on the generation and transmission of power that will positively impact Nebraska for generations to come. Finally, this bill is not about the technicalities of amending language. It is about moral leadership. The issue facing all of us now is how we will live upon the earth. For our people, for the land that God has bestowed to us, and for a future in which we have solved our challenges with courage and compassion, I urge you to support LB965. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Any questions? Yes,

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Senator Kolowski. [LB965]

SENATOR KOLOWSKI: Thank you, Mr. Chairman. Reverend Morrow, thank you very much for your testimony and the issue of the moral leadership, which I really appreciate your mentioning. Considering the...not only on the statewide basis, but on a national basis, what's taken place and what are the priorities, sometimes perverted priorities of American society at times today, how do we go about changing the mentality of what we are facing when you look at, fill in the blank, big anything and the power they have, which means the money they have, and what's invested and what is currently purchased or bought off to make things the way they are today? [LB965]

KIMBERLY MORROW: Absolutely. I think it is an excellent question, a very important question. And in my mind, what I have seen, I have been in Washington, D.C. and listened to hearings that go on in those spaces as well. And what I see is that people are sort of in own their worlds, their own silos, and they make decisions according to a strict set of factors that's in front of them. And that's sort of the way we do business in America today. And part of the problem is, we don't have a wider viewpoint, which is exactly what Senator Haar's bill seeks to do, to encourage us to really keep our eyes open to the whole range of factors that are implicated in our decisions. And I think that corporate boardrooms and city, state, and federal governments all need to start making decisions with that wider perspective in mind. That's moral leadership. [LB965]

SENATOR KOLOWSKI: Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you. Other questions? Thank you for your testimony. [LB965]

KIMBERLY MORROW: Thank you. [LB965]

SENATOR CARLSON: Next proponent. Welcome. [LB965]

DARREL HAYEK: Thank you, Senator. My name is Darrel Hayek, D-a-r-r-e-l H-a-y-e-k. I'm a member of the Saline County Wind Association and I am testifying in favor of this bill so that cost is not the only factor with electricity at the present time. The benefits, if we could get more wind, we'd have more revenue, jobs, and property tax relief. And I look at this as one way to try to revitalize rural Nebraska. [LB965]

SENATOR CARLSON: Okay. All right. Thank you. Any questions? All right, thank you for coming. Next proponent. How many more proponents do we have? Okay. Welcome. [LB965]

BOBBIE DAVIS: Thank you. Good afternoon. My name is Dr. Bobbie A. Davis. Bobbie is spelled, B-o-b-b-i-e, Davis, D-a-v-i-s. I'm testifying today in favor of this bill. There

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have been a lot of things that have been mentioned and you've asked for us not to be redundant, but I just want to mention the health issue, and you've heard about that and the economic issue, and you've heard about that. But I want you...I was on a national telephone...teleconference last night and the federal government is also including looking at legislation that has to do with coal burning and the devastating effect upon our communities. And so I think it would be, behold Nebraska to get ahead of the game, not have the federal government tell us what to do, but to get ahead of the game and know that these kind of controls must be put into effect. That we must stop polluting and causing illnesses within our communities, and that we may look...must look at those areas that make it possible for us to have energy without having health effects. Thank you very much. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Any questions? All right, thank you. Next proponent. Next. Welcome. [LB965]

KRYSTLE CRAIG: Hello. My name is Krystle Craig, that's K-r-y-s-t-l-e, Craig is C-r-a-i-g, from La Vista, Nebraska. I am here today in support of this bill. I'm here as a mother. I'm here for my children and the future. And I feel that it is my responsibility to help ensure I...the best future possible...that I help to create the best future possible for my children. It's a part of my responsibility as a mother is to help support this legislation. When bills come out that are like this one that supports the big picture, which is, as a mother, what I need to look at. There are so many more costs involved in our energy than we have really understood in the past. We have...the science is out there now, and we know that there are serious health effects that are caused by the burning of fossil fuels, particularly coal-fired plants. And there are also huge amounts of clean water that are being used and in this water as it comes out, it also contains tiny, little particulates, and it also contains mercury, and it contains arsenic, and lots of other terrible things. There's not exactly a ton of clean water on this planet and we need to take into account...we need to be responsible...we need to be responsible for our actions and we need take moral responsibility for what we are doing and what type of place we are going to leave for the future generations. We cannot afford to be shortsighted. Climate change is a very serious issue. You know, 98 percent of climate scientists agree on this. So it is science, it's not a belief system. And I am just here to emphasize for the future. We...there's a native belief that we need to consider seven generations into the future. There is also a belief that we...the earth is not lent to us by...given to us by our parents, but it is loaned to us by our children. We need to take care of it and we need to be responsible and we can be a leader. This is an opportunity for us to be a leader. You know, not only is it a challenge, but it is also an opportunity. And a lot of times the right thing to do is not the easy thing to do. That's all I have to say. [LB965]

SENATOR CARLSON: All right. Thank you. Any questions of the committee? Seeing none, thank you. Next proponent. Welcome. [LB965]

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ANTHONY SUMPTER: My name is Anthony Sumpter, A-n-t-h-o-n-y, and then Sumpter, S-u-m-p-t-e-r. I am the next generation. Like my generation now is going to be the ones that are taking control, like...the generation right now that are making all of the options. They're making all of the options, the decisions. When I get older, I mean, I want...specifically I want to be a butler when I'm older. And then what I'm representing is, all of the other kids that have what they want to be when they're older. But what I've been thinking of was, like, am I and everybody else going to be able to fulfill, like, their dreams, or are we going to have to sit back and clean up after all the other decisions that people have made? With the pollution, the climate change, and with this bill, I mean, it might be able to help. And if we take into, like, consideration with all of the other generations, where else are we going to be at? Because with decisions that we make now, the older, we're going to think back and think, what decisions did we make to help the next generations? Did we help, or did we just ruin it? And so, there's guilt and there's shame, thinking, did you make the right decision or not? And that would be it. [LB965]

SENATOR CARLSON: Okay. Thank you your testimony. Any questions? You may be...excuse me, just wait a minute here. This the first time you testified in front of a committee at the Legislature? [LB965]

ANTHONY SUMPTER: Yes. [LB965]

SENATOR CARLSON: All right. Well, congratulations, you may be one of the younger ones and so that was a good job. Thank you. [LB965]

ANTHONY SUMPTER: Thank you. [LB965]

SENATOR CARLSON: How many additional proponents? Okay. Three more. All right. I'd ask you to kind of come up and get in an on-deck position and...welcome. [LB965]

JOHN ATKEISON: Thank you. I'm John Atkeison, Nebraska Wildlife Federation. That's J-o-h-n A-t-k-e-i-s-o-n. People ask us why the Wildlife Federation is interested in energy issues and in climate issues. And, because we think the good life means wildlife, requires wildlife, that compels us to participate in these discussions. We believe that LB965 will give the public power entities the tools that will help preserve the habitat for wildlife and us, sort of tame wildlife, in the state. One of the key things that would now be considered, of course, is the negative climate changes caused by the greenhouse gas pollutions, the largest single one of which, of course, is burning fossil fuels type electricity. Everything in our state lives within certain bounds of what we expect and we have to live with reality. Terms of wildlife, of course, trout, for instance, require cool water. They don't do good in hot water, and so not only the trout require that, but the sports industry, the anglers, also have that same requirement. It's not just the wildlife. Corn doesn't do too good if it gets too hot at certain times. It's not just the wilt and the

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dryness that we see, but I found out that if it's not the right conditions at the right time, we can also have a negative impact on pollination and other growth stages. So, the ramifications are pretty universal. Preventing the worst consequences that come from the greenhouse gas pollution requires shifting from our traditional fossil fuel generation to clean energy generation. Now, none of us is proposing that we make this shift and do it all at the same time, and tomorrow we'd be totally wind and solar and efficiency. But we really should have been moving about 25 years...we're about 25 years late because that's when the warnings started coming in very seriously from senior scientists. And, you know, we've got to do something because we're really pushing our luck here. I speak to community and civic groups and we talk about these issues, renewable power, and global warning, and climate change, and people out there get it. I do not get the push back on this that I did some years ago. People in Nebraska agree with the rest of the country and depending on where you're talking about, 60 to 90-some percent of the people know that global warning is a problem, and that we need to tackle it at the source, in this case the greenhouse gas pollution that comes out of power plants. This bill represents a key part...a small, but a key part of what we need to do. It's the right thing to do. It's what the people want us to do and so it seems to us we ought to get busy and do it. Thank you. [LB965]

SENATOR CARLSON: Okay. All right. Thank you. Any questions of John? Seeing none, thank you for your testimony. [LB965]

JOHN ATKEISON: Thank you. [LB965]

SENATOR CARLSON: Next proponent. Welcome. [LB965]

MATTHEW CRONIN: Good afternoon. My name is Matthew Cronin, M-a-t-t-h-e-w C-r-o-n-i-n. I live in Omaha, 4515 Charles Street, and I have come to support LB965. The guiding principles of the public power system has been to produce the most cost-effective and cheapest forms of power and reliable as well. But in this pursuit, it has become dangerously myopic, lost sight of the greater path of what the public power system has stood for, and what it should mean in the future if we are to keep it, as I hope we should, in the next...all of my children to be able to have public power system because it is, by God, one of the most unique things to our state. And, you know, I really thank Senator George Norris for doing what he did. But I don't know if he had in plan what we have now being so dependent upon the systems and this spread out...this spread-out centralized form of production. You know when he was first originally trying to pursue the public power system and got us, what was it, 75 million of the federal funds, it was so we could develop more localized, decentralized forms of power through our waterways and through our different systems. He tried to bring independence to our farmers. But every step of the way, the OPPD and our public power system has been trying to gridlock and maintain full ownership of the power system, when in reality, we are all the citizens. I come here to try to bring to light some of the different costs that

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aren't really included, which is the whole point of this bill. And we're talking about an aging grid and the only idea that, you know, it's all that we can have is these large economies of scale windfarms. You know, but this is not the truth. There...we just need larger natural gas facilities. And one of the biggest ways we can help mediate the strain on our grid is decentralize solar in helping to try to ease the tensions that our baseload...that are needed to power all the service in all these different systems that we've become so dependent on. You know, our publicly owned power system and our Unicameral should not be standing in the way of citizens of Nebraska from working cooperatively from reclaiming the right to produce their own power. You know, lowest cost possible is truly a relative thing when we think down the line of increased freight, increased, you know, regulations by our federal representatives. Just...and the social costs and the, you know, collective peer pressure we're going to see from the states around us as, you know, we're already seeing businesses leave this state to go across the river to Iowa and that's a huge cost to our economic viability and just the sustainability of our state. And so, I've come here to try to bring to light, you know, we have this idea that if it's intermittent, it's not valuable or it's not reliable. There's no magic bullet, you know. Natural gas isn't going to solve all of our problems. You know, these huge windfarms are not going to solve all of them either. But what they will do is help keep the money in our state so we don't have to keep paying these exorbitant freight costs and these exorbitant coal costs. So, please, just take into account, we need to have a larger discussion and bring this to the full...out of committee to the full Unicameral. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Any questions? Yes, Senator Dubas. [LB965]

SENATOR DUBAS: Thank you, Senator Carlson. Thank you, Mr. Cronin, for coming here. I especially appreciated the comment that you made about how much you value public power and what public power has done for the state of Nebraska. And sometimes I've wondered for just the average citizen out on the street if they really do understand what public power is, what public power has given to them and to our state. Do you think you represent the average citizen, or are you just a little more in tune to what's going on and that makes you aware of what public power means? [LB965]

MATTHEW CRONIN: Well, I pay my taxes. I do what...I work multiple jobs, so by that stance, I guess I do represent an average citizen. I was privileged, was able to go to college, so by that stance, I guess, I'm, you know, I am educated. I think the public power system can once again be a proud thing for a lot of people, but it just becomes so...we've been so disconnected from the systems that keep us going. You know, where...I teach kids for one of my jobs and I ask, you know, kids, where does your power come from? They say, the light switch. You know, where does your food come from? The grocery store. And it's only when we begin to connect those things. If you could be like, where does your power come from and be proud to say, oh, that came

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from right down the way there, that came from the sun, or that came from, you know, just these systems that people could really connect with, they aren't harming us and they aren't threatening their futures, I think that that would be a huge, huge incentive for people to be truly proud of what it means to be Nebraskans and to have this very unique system, so. [LB965]

SENATOR DUBAS: I think that point again that you made about just, you know, when you ask them where does your power come from and they say the light switch, I think probably most of us are guilty at some point along the line where things that we just take for granted that we've never had to think about because they've always been there. [LB965]

MATTHEW CRONIN: Exactly. [LB965]

SENATOR DUBAS: And so, having...I'm very excited to hear that you're having those kinds of conversations with young people because it is important. [LB965]

MATTHEW CRONIN: It's most important. [LB965]

SENATOR DUBAS: And maybe we have to educate ourselves more about those things that we take for granted and grow up with, than the things that we think we need to get out there learning about. [LB965]

MATTHEW CRONIN: I think having...the whole having our really, truly, cheap power has been one of those things that's put it to the back burner, but that is not going to stay around if we continue on the course. This is not a given that just because it has been this way, that's going to continue, especially now that we're part of the Southwest Power Pool and we're dealing with different market competition that we haven't seen. And our ability to be resilient to react is going to determine the course of this state's publicly owned power system. [LB965]

SENATOR DUBAS: Well, I really appreciate your interest and I also appreciate the fact that you are out there talking with young people and others alike. And we probably all have a responsibility there to be having those kinds of conversations, so thanks for what you do. [LB965]

MATTHEW CRONIN: Thanks, Senator. [LB965]

SENATOR CARLSON: Okay. Any other questions? Senator Kolowski. [LB965]

SENATOR KOLOWSKI: Thank you, Mr. Chairman. Matthew, thank you. Refreshing to hear where you're coming from and the homework that you've done to get to where you are. Having come from a couple different states in my past where Commonwealth

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Edison was the major provider of power, in that sense we have a bargain compared to other places and other states around this country. And I love your back to the roots issue, like the light switch. Keep using those examples with your peers, and younger people as well, so they have a connectivity to the roots of all these things. So have those roots discussions and keep those going because it's extremely important to us. And remember, you might do some study on what those costs are like in northern Illinois or other states with Commonwealth Edison, kind of costs and prices compared to where we are, and we'll be very thankful to share those information...that information with others because it's very impactful. Thank you. [LB965]

MATTHEW CRONIN: Definitely. Thank you, Senator. We have a common...our own Commonwealth here, if we continue to have a public power system, so. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you. Next proponent. Welcome. [LB965]

MIKHAIEL SCOLLARD: My name is Mikhaiel Scollard, M-i-k-h-a-i-e-l, Scollard, S-c-o-l-l-a-r-d, and I live at 4310 North 11th. I'm just...I support the bill because, in a way, it opens up the criteria for use to potentially use less coal or other fossil fuels. Because when you think about it, fossil fuel is nothing but a battery, a storage unit. When we think about renewable, something that we can tap into directly from the sun. So what if we need that battery later on down the road? We run out of it, or it's too expensive for us to potentially tap into, we've increased our costs. Right now we're at a point where we can start thinking about energy and be able to go away from that battery and plug directly into the wall. And this is just another, support it because it's another way of starting to get into it where it is there. That's the main part of the rant. [LB965]

SENATOR CARLSON: Okay. All right. Thank you. Any questions of the committee? All right, we appreciate you coming. Thank you. [LB965]

MIKHAIEL SCOLLARD: Thank you. [LB965]

SENATOR CARLSON: Any more proponents? One, two, three, okay. [LB965]

REED BRODERSEN: Hello. My name is Reed Brodersen, R-e-e-d B-r-o-d-e-r-s-e-n. I'm a student at the University of Nebraska-Lincoln, also a Lincoln resident, 6924 South 52nd Street. I'm here today really just to talk about the student perspective. In April, the student government at the University of Nebraska-Lincoln really started a discussion about what climate change means to young people, and also what we can do to mitigate that. And really the conclusion was, renewable energy is really our first step. And as a student body and a student government, we passed a resolution supporting renewable energy and what it can do for our state, recognizing that right now, Nebraska is behind. You can see the pinwheels in front of you, that's pretty clear. But as students

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and as young people, sustainability is really an important cause for us. And, you know, 80 percent of UNL, it's Nebraska students. I think that speaks a lot to this voice in saying that when we look to where to start a career, to where to, you know, establish the rest of our lives, we're going to take these things into account. Right now, Nebraska is looking pretty bad. And so, I think it's something that we need to look at power as a really holistic concept and it speaks a lot about what we as a state value. So, I think that's important to keep in mind. And that's really all I have. I don't have copies of that resolution that we passed with me, but I'll send those to you guys via e-mail. It does speak on behalf of the 24,000 UNL students. So, I think, it speaks volumes. Are there any questions? [LB965]

SENATOR CARLSON: Okay. Thank you for your testimony. Any questions? Thank you for coming. [LB965]

REED BRODERSEN: Thank you. [LB965]

SENATOR CARLSON: All right, next. Welcome. [LB965]

SCOTT WILLIAMS: (Exhibit 10) Good afternoon. My name is Dr. Scott Williams, S-c-o-t-t W-i-l-l-i-a-m-s. I live at 1139 South 93rd Avenue, Omaha, Nebraska, 68124. And actually before I start, I've been asked to deliver a letter to the committee from another member in Omaha who couldn't be here today, so I'm going to hand it to the clerk now. Good afternoon, members of the committee and guests here in the gallery. I'm here today to speak in strong support of LB965 addressing the total costs of energy generation and distribution. For the past two years, I've held a position at Johns Hopkins University as a postdoctoral researcher. My scientific research has been in advanced biofuels. Prior to that time, I worked at Humboldt Center in Berlin, Germany, using neutron tomography to investigate hydrogen fuel cells. During my graduate research, I worked at Los Alamos National Laboratory in New Mexico using neutron defraction to investigate advanced intermetallic materials. After 14 years away, I'm excited to be coming home to live in Nebraska. Bills like the one in front of you today give me optimism about the sustainability of the good life now and into the future. I have opted not to speak to you today, quoting from the tomes of peer reviewed scientific literature citing countless costs of fossil fuels and the advantages of clean renewable sources of energy. No doubt the weight of scientific findings would crack the table here in front of me. I would be happy to answer questions to the best of my knowledge when I'm finished or to advise any of you at a later time. Instead, I ask you to consider the total costs of energy and the impacts on the future for all Nebraskans. An old proverb states, a society grows great when elders plant trees in whose shade they know they will never sit. Recognizing and considering the total cost of energy is essential to avoid foisting those costs on to others, separated by time and geography from the sticker price of the here and now of power. The total cost of dirty energy will be paid in healthcare costs, in climate change, in diminished agricultural productivity, in environmental costs, in water

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usage, and local economic impacts. One specific example is the fact that Omaha will shortly be entering a noncompliance period with ground level ozone. The direct financial cost to the city of Omaha will range in millions of dollars. This is the direct result of the fact that Omaha has a coal-fired power plant located within the city, which is directly creating ground level ozone pollution that causes the noncompliance. The foresight to consider these costs when evaluating generation and distribution projects helps to protect all citizens of Nebraska. I sit before you today as a proponent of LB965 and encourage you all to support this legislation, bringing it from this committee out into the forefront of the general Unicameral. Please, plant the tree of shade for our future. I'll be happy to take any questions. Thank you. [LB965]

SENATOR CARLSON: Okay. Dr. Williams, thank you for your testimony. Senator Dubas. [LB965]

SENATOR DUBAS: Thank you, Senator Carlson. Thank you, Dr. Williams. Could you give me a little more information about Omaha not being in compliance, and are there any repercussions to that...I mean, outside of the obvious repercussions, are there penalties or are there things like that? [LB965]

SCOTT WILLIAMS: Yeah, there are penalties. The ground level...I'm sorry, this is not my area of expertise. I've been discussing with Rick Yoder and Eric Williams, my twin brother in Omaha, and I just received an e-mail not 20 minutes ago about this topic. There is a compliance level of 75 parts per billion ground level ozone averaged over a length of time within a given municipality. And Omaha recently has achieved an average of 73 parts per billion. So within about the next year, it's likely that Omaha will be in noncompliance with ground level ozone. And the higher level of noncompliance has direct fiscal penalties, as well as higher enforcements for future projects, municipal projects, generation projects, building codes, etcetera. [LB965]

SENATOR DUBAS: Are these federal regulations...? [LB965]

SCOTT WILLIAMS: It's from the EPA. [LB965]

SENATOR DUBAS: From the EPA. [LB965]

SCOTT WILLIAMS: That's right. [LB965]

SENATOR DUBAS: Thank you. Thank you. [LB965]

SENATOR CARLSON: Any other questions? Senator Kolowski. [LB965]

SENATOR KOLOWSKI: Thank you, Mr. Chairman. Dr. Williams, number one, welcome home. [LB965]

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SCOTT WILLIAMS: Sure. Thank you. [LB965]

SENATOR KOLOWSKI: It's good to have you here. And you're a living model of reversing the brain drain for Nebraska so we want to see and have that happen more and more. So that's very good. Can I ask where you're going to be working in our local communities? [LB965]

SCOTT WILLIAMS: Yeah, sure. I plan to be living in Omaha and working with the Omaha Biofuels Cooperative in the Omaha Biofuels Center. One is a cooperative, privately held, to generate renewable fuels for use in individual vehicles. And the Omaha Biofuels Center will be a not-for-profit organization associated with this cooperative which focuses on education and outreach impacts of biofuels. [LB965]

SENATOR KOLOWSKI: Thank you very much. And you'd be willing to act as a resource in the future... [LB965]

SCOTT WILLIAMS: I'd be more than happy to, yeah. [LB965]

SENATOR KOLOWSKI: ...with Senator Haar and anyone else involved? [LB965]

SCOTT WILLIAMS: Absolutely. [LB965]

SENATOR KOLOWSKI: Thank you very much. [LB965]

SCOTT WILLIAMS: Sure. [LB965]

SENATOR CARLSON: Okay. Thank you. Other questions? I'm going to ask and this...I don't know, but you mentioned 75 parts per billion on the ozone, and that's EPA. [LB965]

SCOTT WILLIAMS: Yeah, that's right. [LB965]

SENATOR CARLSON: And do you have any idea where that figure came from? Why isn't it 50 or why isn't it 100 or...? [LB965]

SCOTT WILLIAMS: Sure. I'm sorry to say, you might have noticed while reading my notes, the direct fiscal cost was added as a side note to my costs here. I have an e-mail that contains this information, but this is not my area of expertise, like I say. The ground level ozone discussions that I've had have only been in the past two days since I've gotten back to Omaha. If I could speak with you at a later time about the direct implications of ground level ozone compliance, would that be acceptable? [LB965]

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SENATOR CARLSON: It would be very acceptable. And it may be accurate, it may be correct, but a lot of us get skeptical about EPA. And regulations and requirements come down and force us into action and 75 parts per billion, what does that mean and where it came from? If you've got any information on that, and how it was arrived at, that's asking a lot of you, but I'd be really interested in that. [LB965]

SCOTT WILLIAMS: Sure. Yeah, like I said, I do have a wide variety of scientific literature that talks about the direct health impacts and environmental impacts of ground level ozone in a municipal setting, as well as the compliance standards from the organizations that are...that have the precedent here for being in compliance. I'd love to provide that at another time, but I wouldn't like to speak out of turn at this committee hearing today, if that's all right. [LB965]

SENATOR CARLSON: You would like to what? [LB965]

SCOTT WILLIAMS: I would not like to speak out of turn... [LB965]

SENATOR CARLSON: No, no, that's fine. That's fine. [LB965]

SCOTT WILLIAMS: ...or speak out of my own depth from my knowledge on this subject, but I'd be happy to provide you with a summary of this topic for a later reading. [LB965]

SENATOR CARLSON: Okay. Thank you. Thank you. Any other questions? All right, thank you for coming today. [LB965]

SCOTT WILLIAMS: Thank you. [LB965]

SENATOR CARLSON: Welcome. [LB965]

MICHAEL SHONKA: Good afternoon. My name is Michael Shonka, that's S-h-o-n-k-a. I have a company called Solar Heat and Electric. I teach classes at Iowa Western Community College. Also been a lecturer at Creighton University, UNL, all the community colleges in the state regarding solar. I've been in this business since 1983. I recently had the best year for several decades because of the changing attitudes about solar. Consumers are finding it much more acceptable, and the commercial industry is seeing the dollars and cents add up in the appropriate direction. I think this is a very significant turn for Nebraska in a macro sense because the economics are there for solar today on a large scale. Germany has proved this also. The country is on the same latitude as approximately as Canada and parts of Alaska, but yet over 50 percent of the renewable energy is now generated...or excuse me, of their base load, over 50 percent of their base load is now generated with renewable energy. And that is very significant. They don't have all the resources we do in wind and solar and I think we're missing out. And one of the things we're missing out about, I want to address two specific things with

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public power. And I am also a great supporter of public power. It is probably our greatest economic engine in the state and not as well appreciated as it should be. But economic studies have shown that in renewable energy, the local economy sees that dollar cycled through eight to eleven times. Fossil fuel dollars, one to three. We are facing over a billion dollar investment in the near term because of noncompliance in our coal generation. Why don't we take some of this money and put it into renewables and help our local economies? It just makes so much sense to get a strategy along those lines. The second part I'd like to mention is reliability. And I think this has been proven in California studies and also in Germany and parts of central Europe. Renewable energy has a very high reliability rate. Now, not as good as a central base load plant, I understand, but when you scatter them geographically across areas, it does make a reliable system. And I think power companies in the future are not going to be such as powers we think of them today. More like they're going to be networks where they deliver a service. They're going to be intelligent networks, similar to like what the phone company has morphed into. It's not just a voice call anymore, but it's also data, and it's a lot of different types of forms of that. That's what our power company is going to be like in the future. They're already seeing this in other countries. So I thank you for your time, and would look forward to any questions you might have. [LB965]

SENATOR CARLSON: All right. Thank you for your testimony. Questions of the committee? Senator Smith. [LB965]

SENATOR SMITH: Thank you, Mr. Chair. And thank you, Mr. Shonka for coming in and speaking. You said...you talked about the cycle, economic cycle through renewables versus fossil. Can you cite the backup for that and maybe explain for me a little bit, what are the variables of renewables that give them an eight-time cycle versus a fossil being a three-time cycle? [LB965]

MICHAEL SHONKA: It's very interesting. I don't have the specific citation at this moment, but I can provide it. The renewable energy products are generally built more locally and not out. So, a lot of times you'll be able to purchase equipment, all the related parts can be...are either locally purchased or even manufactured locally. There's no reason why Nebraska can't be developing racking systems, for example, for solar electric or solar hot water. Across the Iowa...Iowa's number one, where Nebraska, we're not. We should be manufacturing more of these types of products. So that's a great part of it is that you hire local labor, you train them, you then install the equipment that you purchased, in many cases locally, and then you maintain it with a local force. Now, we don't have a strong maintenance requirement for solar. It pretty much runs automatically, but if you were to put community solar systems in small towns across the state, then you'd be able to have someone locally hired to observe, watch over, and document what they're doing. And that, I think, is a very easy goal for the state to do and would be very worthwhile to explore. [LB965]

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SENATOR SMITH: Are you saying that Nebraska has this eight-time cycle versus the three-time cycle for fossil, renewable versus fossil? [LB965]

MICHAEL SHONKA: When I was back in the 1980s when we first got into solar, it was very evident. There were thousands of people employed in the state in solar, either full-time or part-time. [LB965]

SENATOR SMITH: Okay. How many jobs, would you say, in the state of Nebraska there are in the manufacturing of components for renewable versus the number of jobs in our state related to the transportation of fossil products, Burlington Northern Railroad, Union Pacific Railroad, and the handling facilities for those types of fuels? [LB965]

MICHAEL SHONKA: Very interesting comparison. I have never, ever thought of that in that manner. I would have to separate it out in a couple of ways. Number one, the current industry is a mature industry, the other industry is not. Number two, the other industry in the transportation specifically as you mentioned, has multiple other products that it purchases, and so the actual demarcation of who or how many is employed there, I wouldn't have a clue. But what I would say is that we have lost many opportunities to produce products related to renewable energy because we don't have the types of incentives that we have in other states. So that is very obvious in a doable number. That's one that you could figure out. [LB965]

SENATOR SMITH: Were you familiar...are you familiar with the bill that was introduced last year by Senator Heath Mello, LB402? And it dealt with the manufacturing, it actually would benefit the manufacturing of renewable components in Nebraska, received very little support. [LB965]

MICHAEL SHONKA: When you don't have much of an industry, it's hard to support. (Laugh) I mean, quite honestly, there are very few people employed in solar in this state. That's a number one problem. That's a problem I'm trying to change by teaching at the community college level. To get more people interested and capable of taking on this as a life vocation and a business. But if you don't have an industry, it's hard to support starting one. So you have to find like industries or industries that would benefit from that. This is why I actually think Nebraska Public Power should take a lead role in the development of renewable energies in the state. I think it's just paramount that we do that to the future for the state's generation, so. [LB965]

SENATOR SMITH: Thank you. [LB965]

MICHAEL SHONKA: Yes, sure. [LB965]

SENATOR CARLSON: Okay. Thank you. Other questions? Thank you for coming today. [LB965]

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MICHAEL SHONKA: Thank you for your time. [LB965]

SENATOR CARLSON: All right. What have we got? One more, two more? Okay. Welcome. [LB965]

GRAHAM JORDISON: Good afternoon. My name is Graham Jordison, that's G-r-a-h-a-m J-o-r-d-i-s-o-n. I just live five blocks away, actually. I live down goodhue on A Street, and I can see the Capitol building from here. And it brings me great joy this time year to think that the Legislature is crafting and enacting laws to protect my family and I's future. We can only hope that these laws preserve our culture, our history, and our way of life. We hope that these laws make Nebraska a more comfortable and safer place to live. I'm here today in support of LB965. I think it's the responsible thing to do. I also believe that Nebraska has the best public power utility system in the country. It's the system that allows its stakeholders to have a say in where and how our energy is produced. And recently Nebraska has diversified its energy portfolio and actually I've been to a lot of the generating sites around the state. I've been to coal-fired power plants, I've been at nuclear facilities. I've seen solar. I've been to windfarms. I've seen gas plants, and I've even stood on top of hydroelectric dams. And all of these power sources provide a fundamental necessity to our homes and to our families. They keep us warm in the winter, and they keep us cool in the summer, and they definitely keep our lights on. There's no denying that. But it's that simple evaluation that only touches the tip of what science and research can tell us. To look no further would be unconscionable. To not completely evaluate how new power generation will affect Nebraska's natural resources and Nebraska's health, is neglecting your public power stakeholders. New generation definitely comes at a cost, a cost that until now in Nebraska has not been fully taken into consideration. After watching what happened with the chemical spill in West Virginia, I can only wonder if a bill like LB965 could have predicted...sorry...could have predicted the risk in storing a coal chemical near a major water source like the Elk River. I'd like to think that LB965 could have been used to predict OPPD's negligence at Fort Calhoun, or even the risk that a coal-fired power plant has on public health when built in a major metropolis area like Omaha. As well as predicting the \$83 million that as an LES customer, I might have to pay...to pay for the violations for one of the coal plants that LES is partial owner in Wyoming. Nebraskans are sensible and we hope the representatives act pragmatically. What we're asking for today is that you just lift your heads a little as you drive us down the road. If LB965 can predict future risk and keep us safe, then that would make for a safer and better public power state. Thank you. [LB965]

SENATOR CARLSON: All right. Thank you for your testimony. Any questions of Mr. Jordison? Okay, seeing none, thank you for coming. [LB965]

GRAHAM JORDISON: Thank you. [LB965]

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SENATOR CARLSON: And then, one more proponent? Okay. Welcome. [LB965]

ADAM HINTZ: Thank you. Good afternoon. I'm Adam Hintz, H-i-n-t-z, and I am representing Power Lincoln Locally, a group that's dedicated to increasing renewable production here in Lincoln. Power Lincoln Locally definitely supports this bill. They believe that it will help increase renewables in Lincoln, stimulating the economy. Personally, I also own a coffee shop and I'm a small business owner here. And at my coffee shop, I do things a little bit differently than I think a lot of typical coffee shop companies would do. I kind of look at things in terms of wanting my children to own that business in the future. Coca Cola just turned 100 and I'm not too sure if they're going to be able to get to 200 with the way that we're all kind of running our businesses currently. And so, take it as part of my responsibility as a business owner to kind of change things a little bit. We do things, you know, that reduce carbon, take things out of the landfill, reduce energy and stuff like that. I feel like this bill takes into account a lot of the things I personally take into account in terms of externalities. And it's real important to see an economy in a broader scope than I think that we're used to looking at in. It's more than just supply and demand. It's a little bit more complicated than that. And when you look at the whole system, especially in this globalized economy, everything we do has a ramification. And when we take responsibility for our choices, that's when we are able to extend opportunities to our children in the future. I feel like that's our primary responsibility as human beings is to make sure that we're not the last generation, so. That's why I'm fully in support of this bill so we start seeing things in a broader scope. [LB965]

SENATOR CARLSON: All right. Thank you for your testimony. Any questions of the committee? Where's your coffee place located? [LB965]

ADAM HINTZ: 17th and South, Meadowlark, state bird. [LB965]

SENATOR CARLSON: (Exhibits 11-15) Okay. All right. Thank you. (Laughter) All right, I think that takes care of the proponents and have some letters here to be put into the record in favor of LB965 from John Hansen, Farmers Union; Bruce and Marjorie Kennedy of Malcolm; Laurel Van Ham of Lincoln; Stu Luttich of Geneva; Helen Deffenbacher of Omaha. And that takes care of our proponents. How many do have...now we'll go to those who are testifying as opponents. How many do we have that are going to testify? Two. I thought if we had a lot we'd take a break, so let's go to the opponents. And first one, come forward. Okay. Welcome. [LB965]

JOHN McCLURE: (Exhibit 16) Good afternoon, Chairman Carlson, members of the committee. My name is John McClure, J-o-h-n M-c-C-l-u-r-e. I'm vice president and general counsel for Nebraska Public Power District, but I'm testifying here today on behalf of the Nebraska Power Association, which is the association of municipal electric

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systems, public power districts, and cooperatives comprising Nebraska's unique public power industry. We oppose LB965 because we believe it is unnecessary. I've altered my testimony quite a bit in listening to the testimony from the proponents today, and at the end I'm going to make several comments in response to some of the things I heard. Today, Nebraska entities requiring Power Review Board approval for infrastructure improvements will have already performed extensive analysis relating to the need, construction costs, and anticipated operational costs of a proposed project. Total costs include a myriad of factors such as capital expenses, fuel for generation, O&M costs, regulatory expectations including compliance with federal and state environmental requirements, among others. This is a fundamental part of the utility planning process. No utility would file an application with the Power Review Board without first performing detailed studies and gaining approval of the utility's governing board through a public process. LB965 proposes to add a nonexclusive list of additional considerations for the Power Review Board both relating to certain potential costs and benefits of proposed projects, which are often referred to as externalities. All generation facilities must comply with applicable EPA regulations affecting air and water regulations. The very purpose of the regulations is to reduce external impacts and protect public health and safety. I'm not aware of any electric utility which believes new coal power plants will be constructed anytime in the foreseeable future, if at all. EPA has made it virtually impossible to build new coal-fired power plants. In addition, and this was alluded to earlier by one of the proponents today, many environmental groups also want to stop any new natural gas plants from being built. It's unclear what additional benefit would be derived by the state having an evaluation process of externalities because so much of this is already addressed through federal regulation. Less than one year ago, I testified before the House Energy and Power Subcommittee regarding the critical importance of a diverse generation portfolio in order to address the requirements of reliability, affordability, and environmental compliance. America and Nebraska must have a generation mix that can run at full power that would include nuclear, certain existing coal, and natural gas facilities. Electric utilities in Nebraska have developed a generation mix that is becoming even more diverse, and I'd like to reference the last item I have here which are the wind facilities that have been added and are being added in Nebraska. If you look at this that's attached to my testimony, you can see, and it was alluded to by one of the proponents, a tremendous build out by a number of utilities in the state in terms of wind. We've heard, we don't have that much wind. Well, in fact, if you look at this, there is, in fact, since about 2010, huge investment that's been made in the state in wind and this is collectively for all the utilities. And you can see that by 2016, or 2015, next year, we'll actually go over 1,000 megawatts, well over 1,000 megawatts. Unfortunately, my time is up, and I don't have a chance to get to my comment...other comments, but hopefully I'll have a question or two. [LB965]

SENATOR CARLSON: Okay. Thank you. Questions of John? Senator Dubas. [LB965]

SENATOR DUBAS: Thank you, Senator Carlson. Thank you, Mr. McClure. In your

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closing statement in the testimony that you handed out, you said pending regulatory requirements imposed by other state and federal agencies. I'm more interested in what other state agencies do we have that are dealing with regulations that impact you?  
[LB965]

JOHN McCLURE: Well, certainly water regulation. We don't just go out and have a willy-nilly right to use any water we want. We have to be able, if we're building a facility, we have to be able to, if it's groundwater, we have to have the right and the ability in that particular location to pump groundwater. If it's a surface water need, we have to be able to get an appropriation, so there are regulations in place dealing with both quantity and quality and I don't need to tell this committee, I know you've heard a lot about water. I would like to just make one additional comment on water. There's this perception that power generation consumes vast quantities of water. And while it may use a lot of water, it does not consume that much water. I'll give you an example. At Lake McConaughy, water goes through the Kingsley Hydro and produces hydro power. Then it goes downstream and it cools Gerald Gentleman Station. Then it goes on down a canal and it generates hydro power at North Platte, and goes on further down, in the summer provides irrigation and can go through other hydro facilities. That water is used continuously. It just keeps going through facilities. The same thing happens on the Missouri where water comes down, it goes through a power plant, it cools the condensers, it's released to the river, continues on downstream. [LB965]

SENATOR DUBAS: Are there other agencies outside of water that impact your work?  
[LB965]

JOHN McCLURE: I'd have to think a moment. Yes, there are, absolutely. Game and Parks. If we're building a transmission line or we're building a wind facility, or we're building another facility, the Game and Parks has to consult and has to give an opinion to the Power Review Board before a project can go forward. [LB965]

SENATOR DUBAS: Thank you. [LB965]

SENATOR CARLSON: Senator Smith. [LB965]

SENATOR SMITH: Thank you, Mr. Chair. And, Mr. McClure, thanks for being here and testifying today. And you mentioned that you had some responses to some of the issues that were raised by some of those that testified ahead of you. I'm going to leave this kind of intentionally open-ended so that you can go through and address some of those if you would. But as you're doing that, if you could touch on, what are the alternatives to coal? We agree that it's unlikely new coal is going to be constructed, but what are the alternatives for getting rid of it now, and what is the economic impact of that? [LB965]

JOHN McCLURE: Well, I appreciate that question because that was one of the issues I

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wanted to touch on. The fact is the use of coal in this country for producing electricity is declining. I think that's a fact. You can look at the numbers. It is happening. We used to produce more than 50 percent of our electricity nationally from coal. And there's huge regional variations in how much coal is used in regions, but it's been declining to where nationally, I believe in 2012, that's the last numbers I've seen, it was down below 40 percent. So that's a huge reduction to go from 50 to under 40. And it's continuing in that direction. But we do need to have power plants that can run around the clock. Nuclear is one of those answers, but that industry is not going to expand much going forward, I don't believe. So the other alternative is natural gas. And natural gas has made huge gains in terms of electricity production. It has about half the CO2 footprint at the generator of coal. It has other positive and favorable environmental attributes. Unfortunately, we don't have sufficient pipelines in the country to support the reliance on gas that we're starting to see. And in fact, in this last week in the East Coast, there were cases where they were having trouble delivering natural gas for power plants because there was such a high demand for home heating which has a priority. That's one of the beauties of a nuclear or coal plant, the fuel is at the plant, and it's ready to go at all times. [LB965]

SENATOR SMITH: So, what happens if we get out ahead of a natural progression towards low emission and as EPA is trying to impact the closing of many of the coal facilities, what impact is that going to have economically on our state and the price of energy? [LB965]

JOHN McCLURE: Well, today, on cost today, coal is the lowest cost fuel we have of fossil fuels. It's a lower cost than gas in Nebraska. That's not true in other places because the haul is fairly short to Nebraska. As I indicated, many parts of the country have moved to a lot of natural gas. Texas, they sit over gas fields, they're over 50 percent of their electricity comes from gas. The concern some of us have who have been in the industry a long time is, will this gas remain this plentiful and this much, and accessible for the long haul. Because those of us who have been in the industry a long time, at one point gas was banned from burning in power plants. And even in the last year, we've seen a 32 percent increase in this spot price for gas. And just this month, natural gas prices along with propane prices accelerated dramatically. So again, when you take this long-term view that the bill calls for, and we agree with that looking at stability of fuel prices, certain fuels have been more stable over the long haul than other. Coal has been far more stable than natural gas. [LB965]

SENATOR SMITH: Thank you. [LB965]

SENATOR CARLSON: Okay. Senator Kolowski. [LB965]

SENATOR KOLOWSKI: Thank you, Mr. Chairman. Mr. McClure, thank you for your testimony. And, of course, there are different kinds of coal and dirtier coal than better

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coal. Coming from northern Illinois in coal country there, there's quite a history of the kind...how much sulfur, all the other problems that you can have with that over time. We happen to have friends to the north of us here that are burning in the Bakken Field up in North Dakota about \$1 million a day, burning off natural gas, because they have no way to transport it. They're getting that oil, they're fracking the ground, doing the things they're doing, but the natural gas is just an extra and they have no way to capture, no way to transport, no pipes or vehicles to get it to where it could be used. And as we have propane prices that shot up as they have in the last month, and we're living with gas just going to burn up in North Dakota, supply and demand issue and where a territory is, I could...as we all know. What direction will we go in the future when we have...when we have needs, such as we're describing, that the pipelines or other things could solve, but we're not getting the motion or the activity, either on the national level or cooperation between states to get that met? What suggestions do you have? [LB965]

JOHN McCLURE: Well, one of the challenges is we need better infrastructure, both for delivering natural gas so the pipelines and as I think others recognize, we need more infrastructure in terms of electric transmission to move generation around and optimize the generation that's out there and that's achievable. So adding that infrastructure is important to helping us optimize the energy mix in this country, and to take advantage of the resources we have. [LB965]

SENATOR KOLOWSKI: All right. Working...as Thomas Friedman has pointed out to us in Hot, Flat and Crowded, as he wrote that, the issues of a grid, a modern grid, well-connected grid to...and the different things we would use in our homes from refrigeration to heating and cooling devices that could help us to manage that flow a lot better. What cooperation are you seeing so we don't have the blackouts that have happened on the East Coast and other locations around the country that have plagued us in the past? [LB965]

JOHN McCLURE: Well, there's increasing attention to the opportunities with technology in the grid, but certain parts of the grid are fairly static the way they operate it. People will talk about, well, gosh, a transmission line that's been out there for 50 years. Well, if it's been maintained, it's still a valuable transmission line. That's really key, but there are opportunities, but all of this comes with a cost and Nebraska is now part of the Southwest Power Pool. We're developing things on a regional basis. There is significant transmission being added in Nebraska and beyond Nebraska, again to optimize the efficiency of the market and the ability to deliver not only the conventional generation, but also new wind generation that's being developed throughout the region. [LB965]

SENATOR KOLOWSKI: And, unfortunately, those lines still are a majority aboveground? [LB965]

JOHN McCLURE: Yes. [LB965]

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SENATOR KOLOWSKI: And when ice storms hit, you have a big mess. And that's a very challenge. [LB965]

JOHN McCLURE: The cost of putting a major transmission line underground is prohibitive. [LB965]

SENATOR KOLOWSKI: Yes, sir. Yeah. Thank you. [LB965]

SENATOR CARLSON: Okay. Any other questions? All right. Thank you for your testimony. [LB965]

JOHN McCLURE: Thank you. [LB965]

SENATOR CARLSON: Welcome, Shelly. [LB965]

SHELLEY SAHLING-ZART: (Exhibit 17) Well, thank you. And John neglected to hand out, so we're handing that out now, the copies of the Nebraska Power Association paper on externalities that actually is based on last year's externalities bill because we did this paper in December before we had the bill before you, just so it's not too confusing to you. Good afternoon, Senator Carlson, members of the Natural Resources Committee. My name is Shelley Sahling-Zart, that's S-h-e-l-l-e-y, Sahling-Zart is S as in Sam, S-a-h-l-i-n-g-Z-a-r-t. I'm vice president and general counsel for Lincoln Electric System, the municipal electric utility serving the city of Lincoln, Waverly, and some of the surrounding area around Lincoln, and helping to power your lights when you're here in town. We are here today to oppose LB965. I can say that I have had a number of spirited conversations with Senator Haar over the last couple of years about externalities and about both of his bills. And we've had some respectful disagreements about things. I don't think...what I don't like about this bill is I don't think it accomplishes what you all think it's going to accomplish. We've spent about three and a half hours here today, but we really haven't talked about the bill. We've talked about renewable energy and we've talked about a lot of things, but we haven't talked about this bill and what it may or may not do. Will it make us provide a lot more analysis and go through a lot more things that we have to present to the Power Review Board when we come with new applications for generation or transmission? Yes. Will it stop a new coal-fired power plant? EPA has already taken care of that. We're not going to be building new coal-fired plants. Will it help renewables? Not likely. Will it change the economics of a Burt County Wind project? This bill won't do that. There are other things that might do that, but this bill won't do that. This bill looks at an assessment of a lot of things that, frankly, I think we're doing. We may not shine a bright light on them and bring you a formal report, but a lot of these things are being considered in our planning processes and by our engineers and by our boards. My board chair is sitting back in the audience and I think she would attest to the fact that our board operations and power supply committee goes

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through a lot of our analysis with us. We look at projected fuel costs. We look at those long-term resource decisions. And the interesting thing here is, we're sort of looking through the rear view mirror. We're talking about the bad things about coal, but you know what, we could have had this bill in place when those new coal plants were built, 30-40 years ago. None of this would have been considered. We didn't know then some of the things that we know now. And here's the harsh reality. We have a state that's heavily dependent--and I'm almost out of time--but heavily dependent on coal. That's not going to change immediately. Even Senator Haar, in his opening, acknowledged that. That's a transition, it's not a light switch. It's not something we do quickly. It's going to take some time. And in the meantime, we've got to figure out how we make some decisions about new resources that are cleaner, that are cost-effective, but we have such a myriad of things that we have to consider. We have to consider how fast we do that and at what cost, because we drive the cost up very high, we effect a lot of things. We effect the economy of our large industries. They don't come and locate in Nebraska anymore. We impact those people on low and fixed incomes who are having problems paying that electric bill right now. We have to consider all of those things when we're making these resource decisions. That doesn't make those decisions easier. This bill won't make those decisions easier or harder. It will make it more burdensome to put together some of the analysis. But there are other points that were raised that I'd love to address, but I am out of time. [LB965]

SENATOR CARLSON: Okay. Thank you, Shelley. Questions? Senator Smith. [LB965]

SENATOR SMITH: Thank you, Mr. Chair. And thank you for coming and testifying, appreciate it. And I think you did a much better job of summarizing what I was trying to get at with many of my questions and that is, that the changes that we see in this bill, I think a lot of the testimony we've heard today, and what they're asking for, and what they're concerned with, really is not addressed through this bill. Adding the word "reliable" does not effect the kind of change that I heard many of these... [LB965]

SHELLEY SAHLING-ZART: Can I address that for just a second? [LB965]

SENATOR SMITH: Yes, please. [LB965]

SHELLEY SAHLING-ZART: Because the interesting part about "reliable," I mean I heard a definition of "reliable" which is different than you and I coming from the utility industry think of. We heard that the wind is always blowing somewhere. That's not the definition of reliability when you're talking about the Southwest Power Pool and others. Their definition of reliability is, what's "dispatchable?" What resource can I call on at will and send that power where it needs to go? That's their definition of "reliable" which is a little different than what we were talking about earlier today. [LB965]

SENATOR SMITH: I appreciate your saying that because that's something when we're

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talking back and forth, we understand because we come from that industry. And oftentimes, a lot of folks in the general public don't understand what we mean when we talk about reliability. And so that's why I'm baffled by the use of that language in this bill, and what I'm hearing in the opening testimony of what this bill was intended to do. Also, the redundancy of the language in this bill, I think you've adequately addressed that. That whenever you do your review or the Power Review Board does its review, and uses sound business practices to do those reviews, it incorporates what is included in the language that's been added into this. And then I did hear an awful lot of discussion about renewables, probably more so, probably about half the testimony I heard was talking about renewables versus health standards. And so I feel as if there's some confusion as to what this bill is actually seeking to accomplish. So I'm going to kind of leave it open-ended if you'd like to respond to that. [LB965]

SHELLEY SAHLING-ZART: Well, I have several things. I mean, first of all, I was glad at the end to hear people talk about their support for public power because early in the day I wasn't so sure. We're not trying to be bad actors, we're trying to do a really good job and, you know, you talk about a resource. We are great resource to you all. And we're happy to work with you. We've had lots of discussions with Senator Haar. We have a wealth of knowledge and we have a lot of smart people. And maybe we don't do things as quickly as people would like us to do, or the way they would like, but, you know, I think we're doing a pretty good job of taking a balanced and measured approach to addressing what we hear as concerns. And the great thing in a public power state is those people could come to our board meetings and they can express those concerns. You can't do that at Commonwealth Edison, correct, Senator? [LB965]

SENATOR KOLOWSKI: That's right. [LB965]

SHELLEY SAHLING-ZART: So, it is a great thing. We can have those kinds of dialogues and we can move together. We may not move at the same pace as everybody would like, but I think we are moving. And part of it is, you know, part of ours is, I understand that renewable energy would add a lot in different areas of the country. I might hit one right on the head. Talk about keeping the investment in Nebraska. Lincoln Electric System, as you know, purchased 100 megawatts of wind in Oklahoma, but we're saving our customers about \$2 million a year. That's money that's staying right here in Nebraska. And hopefully those people are turning around and using it in our \$4 million sustainable energy program which we just added \$1 million to. Ran out of money in June last year, so we added \$1 million this year and that program has created in the last few years over \$30 million of local investment. So, I think we are doing a lot to increase local development. We may not be doing it with local wind, but we're doing it with energy efficiency programs that, frankly, are going to help reduce that load over time so we don't have to build that next power plant. [LB965]

SENATOR SMITH: Yes. And, I just wanted to speak on public power as well. I really do

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appreciate public power and I know the folks here testifying today appreciate it. It's about affordability, reliability, and accountability. And I see Ms. Fuller is still in the audience, and she, I think I remember her saying in her testimony, she's a Council Bluffs customer. Well, I would dare say that there's much more accountability to the customer, customer-owner in Nebraska than there is in Iowa. And I don't want to bash Iowa, but it's much easier getting in touch with your board member of the local public utility company in Nebraska than it is in Iowa. [LB965]

SHELLEY SAHLING-ZART: I believe that's true. [LB965]

SENATOR CARLSON: Okay. Any other questions? I have one before we wrap this up. [LB965]

SHELLEY SAHLING-ZART: Uh-huh. [LB965]

SENATOR CARLSON: As there, I think, unquestionably will be a gravitation away from coal-fired generation, then as someone that kind of struggles with that, as you go more and more to wind and solar, people like me want our rates reliable...not reliable, we want them reasonable and competitive. And we want to be in a good position in that regard with any other state. Can we do that? [LB965]

SHELLEY SAHLING-ZART: Yeah, I think we can do that, but it goes back to my reference to taking a balanced and measured approach. If you do it at the speed with which a lot of folks would like us to do it, you kind of run that out of balance. You know, we talk a lot about having to have energy policies that are a balance of energy, environment, and the economy. You need all three of those. And you start to move in any one direction too heavily and you throw the others off. The economics are incredibly important. I mean, somebody talked earlier today about how it's a huge driver for economic development. Well, we don't want to lose that and, you know, we've been losing a little bit of that rate competitiveness. We don't want to slip that kind of ebbs and flows. We want to maintain competitive rates for lots of reasons, for the quality of life in Nebraska to get people to not leave our state. We talked about the brain drain. We want people to stay here. It has to be affordable for them to stay here. We can't escape that. Can we move towards wind and solar and some of those things? Yes, I think we can. We're going to have to, and frankly, we're probably going to need to invest more in research like carbon capture and storage. We're going to need some of those technologies because as I mentioned earlier, coal in this state is not going to go completely away. We may lessen our dependence on it through wind and renewables, but in our immediate future, I think it's unrealistic to think coal won't be a part of our immediate future. And with that comes a responsibility from our standpoint to comply with regulations to make it as clean as possible. But to your end, are we going to get there? Yeah, but it's going to take some time. [LB965]

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SENATOR CARLSON: Okay. All right, thank you. Any other questions for Shelley? Thank you for your testimony. [LB965]

SHELLEY SAHLING-ZART: Thank you so much. [LB965]

SENATOR CARLSON: (Exhibit 18) Any other opponent? We do have a letter from Robert Andersen of the Nebraska Cooperative Council in opposition to LB965. Do we have anybody testifying in a neutral position? Okay. Welcome. [LB965]

CLINTON ROWE: Good afternoon. My name is Clinton Rowe, C-l-i-n-t-o-n R-o-w-e. I'm testifying in a neutral position because I'm going to talk about the science, the climate science. I have a Ph.D in climatology from the University of Delaware and I'm currently a professor in the Department of Earth and Atmospheric Sciences here at the University of Nebraska-Lincoln where I've had the opportunity and pleasure of teaching and conducting research for nearly 30 years. I also serve as an UNL representative to the University Corporation for Atmospheric Research, the governing body for the National Center for Atmospheric Research, one of the premiere labs in the United States studying climate change and climate change impacts. Humankind has been adding increasing amounts of carbon dioxide and other greenhouse gases to the atmosphere, primarily through the combustion of fossil fuels since the beginning of the industrial revolution. This has led to a sharp increase in the atmospheric concentration of those gases over the past 150 years. This is an established fact based on the records of fossil fuel use, direct observation of the atmospheric concentration of carbon dioxide, which has increased by 40 percent since the beginning of the industrial revolution. The direct consequence of this in the absence of any other influences on the climate system would be an increase in the average global temperature of the atmosphere. This is established uncontroversial sciences that has been understood for well over a century now. Our knowledge of other influences, things like albedo changes due to land use alterations, the effects of aerosols, cloud feedbacks, while less certain, is sufficiently robust that we know that their net effect would not offset the direct warming due to increased greenhouse gases and could as likely lead to greater warming. While the earth's temperature naturally varies over many times scales, the observed increase in global temperature since the late 19th century cannot be attributed to natural variability. The period of greatest warming in historical record coincides with the time during which humans had increased the concentration of greenhouse gases in the atmosphere. Moreover, the pattern of temperature changes in the atmosphere, warming in the lowest layer and cooling in the layer above, can be explained by increased greenhouse gases, but is not consistent with other postulated causes. For example, solar variations. Moreover, there's been no detectable trend in solar output during this time period that would be sufficient to cause the observed increase in earth's temperature. Other widespread changes in the climate system are consistent with a warming world, including decreases in snow cover, sea ice, glaciers and ice caps, milder and less frequent cold spells, warmer and more frequent hot days and nights, earlier greening

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and blooming of flowering plants, and rising sea level. Climate models, one of the primary scientific tools used to assess natural and human-induced changes in the climate system, both in the past and projected in the future, include the primary processes and feedback that affect the earth's climate. Climate scientists have determined that only simulation that include these increases in greenhouse gases are able to properly represent the increasing global temperatures observed in recent decades. Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you. Questions of Dr. Rowe? Appreciate your testimony. Thank you. Welcome. [LB965]

ROBERT OGLESBY: Good afternoon. I'm also here in the neutral role to talk about some of the implications of climate change in Nebraska. I'm Dr. Robert Oglesby, O-g-l-e-s-b-y. I have a Ph.D of climate dynamics from Yale University. I'm a professor in Earth and Atmospheric Sciences and School of Natural Resources here at the University of Nebraska. Now, projections are...actually this is the same testimony I gave a year ago with one small change. Projections are that due to increases in greenhouse gases as the result of human emissions, Nebraska will warm by four to ten degrees Fahrenheit between now and the end of the century. That is about seven degrees, plus or minus three. Excuse my voice, I'm just getting over a bad cold. The exact amount of warming is not certain, but it will get warmer, indeed it already is. Projections for precipitation are less clear. In fact, projections are, there will probably be little change overall in rain or snow. Nonetheless, the same precipitation in a warmer world still means drier conditions. The biggest concern, the thing that keeps me awake at night, is snowpack in the Rockies. All of the model projections indicate reduced snow, reduced precipitation, and an increase in the mean rain-snow line, that is the elevation of the snow becomes higher. Snow is...snow melt is a major source of river flow throughout the spring and summer. You don't have the snow, you don't have the river flow. Extreme events are likely to become more common. Heat waves and droughts are likely to become more common and more severe. Blizzards are likely to be less common, but they are likely to be more severe when they do occur. Now, the one small change from last year is that the most recent IPCC, Intergovernmental Panel, a climate change report has just recently come out and basically there is no substantive change, at least in regards to Nebraska from previous reports. The conclusions I presented a year ago are still held by the newest IPCC. I thank you. [LB965]

SENATOR CARLSON: All right. Thank you for your testimony. Questions of Dr. Oglesby? Thank you for coming. [LB965]

ROBERT OGLESBY: Thank you. [LB965]

SENATOR CARLSON: And you get well this weekend. You get well this weekend, okay. [LB965]

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ROBERT OGLESBY: I'll try. Thank you. (Laugh) [LB965]

SENATOR CARLSON: All right. Thank you. Any other testifier in a neutral position? All right. Senator Haar. [LB965]

SENATOR HAAR: Thank you very much. If anybody didn't get enough pinwheels, I've got some more, so. (Laughter) Or trade them off, whatever you want to do with those, and please eat the cupcakes. The purpose of this bill is to expand the definition or the mission of public power in Nebraska, and Shelley Sahling-Zart said that we had had some spirited discussions. I was going to say that John McClure and I have let our hair down (laughter) in some of our discussions, but that doesn't fit either of us very well. But, no, over the years, as this has been one of my interests, we've had some...a lot of discussions and some disagreements. I would simply disagree with the fact that this bill does nothing and that's my big disagreement. We have all heard, in talking to people, and I'm a big supporter of public power. Low cost, reliable. That's always a response we get and this expands that mission. If, you know, if LB965 were to pass into law, and I went to visit my local public power and again heard, well, our mission is low-cost, reliable, I'd say, no, our mission...the mission of this public power is to look at cost benefits. And that's a real difference in mission. Now, in...some groups may go that way and look at more things, but I'd like to refer back to my earlier testimony because the group in northeast Nebraska that purchased electricity generated by coal in Kentucky said this: At present the laws of Nebraska require the NE NPPD board to make this power purchase decision for our retail electric customers. And I heard that in talking to the people from LES. And I can't fault them from that because that's what the law says. And we know it now it doesn't say reliable, it says adequate electric service. Although Senator Smith, when he discussed near the end why he liked public power, he used the word "reliable." We threw that word in because it's always used. I'm more than willing to take that word "reliable" out as an amendment, if that's offensive. But the purpose of this is to expand the mission so that in the future if there's a decision whether to buy wind in Nebraska, or buy it in Oklahoma, for example, that you don't just look at the cost savings to the people of Lincoln or whatever the place. That we look at the benefits to all of Nebraska. So that when the group in northeast Nebraska felt that the laws required them to go to Kentucky for electricity because they got a better break, a better cost break, that in light of this, they'd have to rethink that decision. Then the whole question has come up about, well, the wind doesn't always blow and the sun doesn't always shine. I'm not sure the wind doesn't always blow in Nebraska, (laugh) after the last few weeks. I got 36 miles per gallon one day coming in from my house, which is northwest of Lincoln. I almost felt I had a sail in back of me. This whole issue of "dispatchable" power is a challenge. It's being taken up in many ways. One is through the regional transmission organizations, and I'll talk more about that when we get to LB1100, how the Southwest Power Pool will be playing a much greater role in telling which of our power plants function when and at what rates. There's been a great

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increase in weather forecasting. That's one of the things that, for example, Colorado is making great progress in using weather forecasts to forecast when the wind is going to blow. You can't tell days ahead of time usually, but you can tell hours ahead of time, and electricity now is dispatched in terms of hours and minutes. You send pricing signals. Lower cost electricity when the wind isn't blowing. Those sorts of things. These are all being experimented with. More transmission. If you go to Twin Lakes in Colorado where I've been backpacking, two lakes. They pump water from one lake to the other and then run it the other way to generate electricity. So, the whole thing of storage is being looked at. There are a number of companies who are looking at liquid salt, molten liquid salt in huge batteries that could be used for storing electricity. NREL, by the way, I went to a meeting Sunday night by Dr. Chuck Kutscher from NREL, the National Renewable Energy Lab. He's the principal engineer and group manager for NREL and it was at the winter lecture series sponsored by the School of Natural Resources, the Unitarian Church, and the Council on Humanities. And NREL has just opened a huge facility, 185,000 square feet which they call the Energy Systems Integration Facility, the only facility that conduct integrated megawatt scale testing of the components and strategies needed to reliably move significant amounts of clean energy onto the electrical grid. And I hope...he sort of had an invitation open that power groups from all over are coming to work with NREL at this campus to learn how to integrate renewables into the grid. We need to be putting a lot more money into research, by the way, for new technologies. Places are finding that wind and solar are great dancing partners because, you know, wind tends to blow at night and the sun tends to shine during the day. Or wind and natural gas, as Senator Smith mentioned. So, yeah, it's a challenge. Reliability is a challenge having this, you know, "dispatchable" energy there when you need it is a challenge. But there's a lot going on and I think that's often an excuse not to do anything, just say, well, the sun doesn't shine all the time, the wind doesn't blow all the time. I looked back...I'm sorry, Senator Smith isn't here at the moment, but I looked back at the green copy and I really can't...I didn't address renewables in this. When you're looking at cost benefit analysis, it didn't mention renewables. It's looking at the total cost and the total benefits. Now there is a section in this bill on page 3, lines 10 and 11 and so on, where it talks about renewable energy facilities. But I didn't address...I have nothing to do with that. Now, I would say, though, that I would not want a private developer exporting electricity from Nebraska if they were burning coal to do it, because coal carries as we've heard, you know, the health cost of burning coal is one of those hidden costs that we usually don't pay for on our bills. So, I'd object to that if someone wanted to burn coal and export that electricity, but certainly not any other kind of energy. There...okay, when John McClure talked, he's saying this bill is unnecessary. Again, I would just like to disagree with that because when I've talked to people and why do we keep doing what we're doing, it's because of what the law says it has to be reliable and low cost, you know. I want to break through that barrier. I want to give a new definition, I want to give a new mission so that we don't hear that. This bill...and it's probably not clear enough in there, but the first section relies to public power generally. Now, it goes on later to the Power Review Board so what we've implied in this

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legislation is that if you have a large generation facility being built, that would have to go to the Power Review Board. But putting this in the beginning of the language, that refers to anything, any new generation, any updates to generation, any distribution, any purchase, this is where we keep hearing low cost, reliable. So we put these cost benefits up-front. It doesn't just refer to the Power Review Board. That would kick in only with the building of a large facility. I do find it interesting, and this is where Shelley and I have had some spirited discussion. (Laugh) I don't think that public power adequately looks at the cost, the social costs of health, the health costs, in particular. They'll say, well, we follow EPA standards, yet in the next breath, EPA is a four-letter word and we're trying to fight them in court. I would like our public power system to embrace the concept of looking at the cost of health in Nebraska. One of the reasons I would object to buying electricity from coal in Kentucky is we may get a good price on that, but the children of Kentucky are going to be breathing in more particulates, they're going to have more asthma, there are going to be more deaths related to the generation of electricity from burning coal. So we get a good price, so the kids of Kentucky can suffer. So I think there's some ethical considerations there. I feel pretty strongly about that. Coal is the lowest cost. I wonder, if you look at all the externalities. The one sheet I handed out, for example, if you look at this, if you really look at all the externalities of producing electricity from coal, there's the coal mining, there's the transportation of coal, there's the burning coal, the disposal of the waste, and the transmission of that electricity. And we know a lot more today than we did about the costs involved in that. I would challenge that coal is the lowest cost of electricity, if you consider the externalities, the social costs. The private costs we pay on our bill and we all want our bills to be as low as possible. But the social costs, I believe, should be included in that. And then, finally, the reason I'm in the Legislature...I'm 70 years old. I'm not going to be around for more than 30 years, I figure. (Laughter) And I'm going to be healthy. I'm exercising every day now. But I'm here for the future for the children. And I was moved by the one young man who said, I'm the next generation. And he said, will we have to clean up after you? Will we have to clean...and that's not just the junk we're putting in the atmosphere, the CO<sub>2</sub>, the carbon particulates, the...you know all the sorts of things from generating electricity from fossil fuels. I think that also extends to things like the national debt we're running up. You know, you could say, will, we have to clean up after you, are we going to have to pay your bills? And so, I think we need to listen to young people and we had a lot of them here today and they're concerned about this. I think they would care less about the price of their electric bill than they would about a future with clean air and clean water. Folks, we have 78 lakes in Nebraska that have been polluted to the point with mercury where you're not supposed to eat the fish. Mercury is a cumulative toxin, so you can't point to one power plant and say, this is where the mercury came from, but it's accumulated to the point now where 78 lakes in Nebraska you're not supposed to eat the fish. And we do have more EPA standards, like the one about across state lines. That's called CSAPR. Somehow you can make pollution across state lines out of CSAPR, but that's the abbreviation for CSAPR. That one is in the courts right now. And basically it says that, hey, Iowa could sue Nebraska for the

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pollution that's blowing west over the border. And I've even wondered about the electricity we're buying now from Kentucky. CSAPR is probably going to eventually wind through. We see states in the northeast who are bringing more lawsuits about this cross-state pollution. Is that going to make, somehow, the group that's buying coal, electricity from Kentucky, are they going to get stuck with a bill for cross-border pollution? I don't know. That's just a question that popped in my mind when I woke at 4 this morning. So, this is a change. This sets a new mission for public power. It says it's not just low cost, reliable. It's a total cost and total benefit. And I agree with Senator Smith, for the short-term, that's probably going to involve some natural gas, but in the long-term, it's going to involve a lot of renewables. And Nebraska is rich in renewables, biofuels, wind. We're one of the best solar potentials in the United States. We have cold winters with a lot of sunshine. So, with that, I really appreciate all the time, and if you have any further questions, I'm more than happy to answer them. [LB965]

SENATOR CARLSON: Okay. Thank you, Senator Haar. Any questions of the committee? Senator Kolowski. [LB965]

SENATOR KOLOWSKI: Perhaps, just a short mathematical configuration. I was working those 30 years you talked about and it sounds like you can get two more eight-year terms, both term-limits, and everything else out of it. (Laughter) [LB965]

SENATOR HAAR: Well, you know, there's a word that would come up in my relationship with my wife, it's spelled, d-i-v-o-r-c-e. (Laughter) The only good thing about term limits, and I think there are a lot of downsides as Senator Carlson would agree, the only good thing is, I don't have to run again. (Laughter) In fact, I can't run again. But this is a high honor, it's a lot of work. [LB965]

SENATOR KOLOWSKI: Thank you. [LB965]

SENATOR HAAR: Thank you. [LB965]

SENATOR CARLSON: Okay. Thank you, Senator Kolowski, thank you Senator Haar. [LB965]

SENATOR HAAR: Yep. [LB965]

SENATOR CARLSON: And with that, we'll close the hearing on LB965. Thank you for coming. Thank you for being patient. Committee, we're done. (See also Exhibit 19) [LB965]