

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

HUGHES: Welcome, everyone. I see it's a little past 1:30, so we will convene the committee of the Natural Resources. We do have a call-in going to be calling in, so we will interrupt my opening if she calls in. Welcome to the Natural Resources Committee. I'm Senator Dan Hughes, I am from Venango, Nebraska, and represent the 44th Legislative District. I serve as Chair of the committee. The committee will take up the bills in the order posted. Our hearing today is your part, public part of the legislative process. That is your, this is your opportunity to express your position on the proposed legislation before us today. The committee members may come and go during the hearing, this is just part of the process, as we have bills to introduce in other committees. I will ask that you abide by the following procedures to better facilitate today's proceedings. Please silence or turn off your cell phones. Introducers will make initial statements, followed by proponents, opponents, neutral testimony. Closing remarks are reserved for the introducing senator only. If you are planning to testify, please pick up a green sign-in sheet that is on the table at the back of the room. Please fill out the green sign-in sheet before you testify. Please print, and it is important to complete the forum in its entirety. When it is your turn to testify, give the sign-in sheet to the page. This will help us make a more accurate public record. If you do not wish to testify today but would like to record your name as being present at the hearing, there is a separate white sheet on the tables you can sign in for that purpose. This will be part of the official record of the hearing. If you have handouts-- Hello?

MARY MERCURE: Hi. Good afternoon. This is Mary Mercure.

HUGHES: OK. Mary this is Chairman Hughes. We're just getting through our opening portion of the committee, so if you could just hang on a little bit, I would be very grateful.

MARY MERCURE: Sure.

HUGHES: OK. Thank you. If you do not wish to testify-- or if you have handouts, please make sure you have 12 copies and give them to the page when you've come up to testify. They will be distributed to the committee. When you come up to testify, please speak clearly into the microphone. Tell us your name, and please spell your first and last name to ensure that we get an accurate record. We will be using the light system for all testifiers. You will have five minutes to make your initial remarks to the committee. When you see the yellow light

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Natural Resources Committee March 6, 2019

come on, that means you have one minute remaining. And the red light indicates your time has ended. Questions from the committee members may follow. No displays of support or opposition to a bill, vocal or otherwise, is allowed in a public hearing. The committee members with us today will introduce themselves starting on my left.

MOSER: Mike Moser, District 22. That includes Platte County, most of Stanton County, and a little connecting part of Colfax County.

HALLORAN: Good afternoon. Steve Halloran, District 33: Adams County and part of Hall County.

QUICK: Dan Quick, District 35: Grand Island.

GEIST: Suzanne Geist, District 25, which is the east side of Lincoln and Lancaster County.

HUGHES: And on my far right.

GRAGERT: Tim Gragert, District 40: northeast Nebraska, Cedar, Dixon, Knox, Holt, Rock, and Boyd County.

ALBRECHT: Hi. I'm Joni Albright from District 17, northeast Nebraska: Wayne, Thurston, and Dakota counties.

BOSTELMAN: Bruce Bostelman, District 23: Saunders, Butler, majority of Colfax Counties.

HUGHES: To my left is committee counsel, Laurie Lage; and to my far right is our committee clerk, Mandy Mizerski. Our pages for the committee today are Noah Boger, he is a freshman at UNL with a double major in political science and French; and Hunter Tesarek, He is a sophomore at UNL double major in history and political science. So with that, we will open our hearing for today. First up, we have an appointment, a confirmation. So we have Mary Mercure on the line. She is seeking reappointment to the Niobrara Council. So thank you today for your patience, Mary, and for joining us. If you would like to just give us a brief background about yourself and a little bit about what the Niobrara Council does, if you would please.

MARY MERCURE: OK, thank you. Thank you guys for allowing me to do this over the phone, instead of travelling, especially with the cold. I am a lifelong resident of the Valentine, Cherry County, born and raised. My family are original settlers from the area. But I have a husband, Randy, two children, and we have been involved in the Niobrara River

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

outfitting business since the beginning. And I guess I am just here to seek reappointment for the landowner, Cherry County landowner position.

HUGHES: OK. Thank you. Can you give us just a little bit about what you've done, what the council has done during your tenure?

MARY MERCURE: Well, I have just been on for a year but I, you know, I've seen the council be involved with programs, projects that engage youth, camps, day camps, river cleanups, facilities for the public, maintaining these facilities, and trying to get improvements done on various locations for launch sites or landing sites.

HUGHES: OK, thank you. Are there questions from the committee? Senator Moser.

MOSER: Do you find any issues that, anything controversial that's coming up before the Niobrara Council? Are you comfortable with where they're going, what you're doing?

MARY MERCURE: I'm comfortable I think with what we're doing. I think that with anything money is always a factor. So I think there could be other things happening that are limited.

MOSER: Yeah, that's about, you're about the third or fourth person to tell us that, so after that we start believing you.

HUGHES: Are there any other questions? Seeing none, thank you for your willingness to serve, Mary. And we will let you know how it comes out. But I, I think it should be fine. Is there anyone wishing to testify as a proponent to the reappointment of Mary Mercure for the Niobrara Council? Seeing none, is there anyone wishing to testify in opposition? Seeing none, is there anyone who wishes to testify in the neutral capacity? Seeing none, that will close our hearing for Mary Mercure for the reappointment to the Niobrara Council. Thank you, Mary, very much. We appreciate your service to the state of Nebraska.

MARY MERCURE: Yes, thank you. Thank you, guys. Have a good one.

HUGHES: OK. Very good. So that we will next ask Mr. Michael Thede to come up to, for a reappointment to the Nebraska Ethanol Board. Welcome, Mr. Thede. And if you would maybe do the same thing, just give us a little background on yourself and--

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

MICHAEL THEDE: Sure.

HUGHES: --your perspective on the Nebraska Ethanol Board.

MICHAEL THEDE: Yeah. So I've, this would be, I believe-- I think I lost count a little, but I think this is the fifth time I've been here for this. So I've been on the Ethanol Board for a while. I live just north of Grand Island, by the little town of Palmer, Nebraska. My wife and I, Jean, Jean and my wife-- my wife, Jean, and I farm there with, and we have four, four children. Our oldest is at Hastings College and our youngest is a fourth grader. So I've been on the ethanol board for a number of years. We've kind of seen the industry change quite a bit. And so that's, I mean, that's kind of what, we have a new executive director now. And so, kind of going a little bit different direction. But, I mean, mostly because of the ethanol industry is kind of changing a little bit. So I guess I can answer any other questions to be more specific with anything. But we farm there and I raise corn and soybeans.

HUGHES: Questions? Senator Geist.

GEIST: Yes. Thank you for being here today. What do you see as the biggest challenge facing you in the next one to three years with your board?

MICHAEL THEDE: For the ethanol industry in general, you're asking? Really, it's a lot of legislative, the RFS is super important to the ethanol industry nationally. And so just continuing to keep that, that law as part of our national laws is really, really important. And we, the ethanol industry, sees attacks on that all the time. I mean, it's just a constant daily battle. Probably one of the only industries in the, in the world that relies on our competitor to sell our product. And so that creates a real challenge. And so, and it's a well-funded opposition, so that that's been our biggest challenge really.

GEIST: Do you have any thoughts of steps that you all will take to maybe combat that. Or, or is that, is it more of a national movement and your board doesn't get involved with that?

MICHAEL THEDE: No, we try to get involved along with like the Governor's Office, work with them to keep them apprised of what's going on. And work with a number of national organizations, ethanol organizations that are better, a little probably better able to actually do the boots on the ground stuff, you know, in Washington and

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

stuff. We don't necessarily-- we do go there, but the chairman's there, has been there, you know, two or three times, I think, in the last year. But a lot of times we're working with other, with other proponents of ethanol there in Washington.

GEIST: Thank you.

MICHAEL THEDE: So, yeah.

HUGHES: Additional questions? I've got a couple. So I did spend some time on the Ethanol Board. What position are you filling on the board?

MICHAEL THEDE: I am the general agriculture representative of the board.

HUGHES: OK, the general ag. OK, and you said you've come before us several times. So the appointments are for four years, five years?

MICHAEL THEDE: I think they're four years.

HUGHES: OK. So this is like your third or fourth?

MICHAEL THEDE: This is my fourth time to be here.

HUGHES: OK. So you're--

MICHAEL THEDE: Since about 2000-- I think I came on about 2003.

HUGHES: Okay.

MICHAEL THEDE: Somewhere in there. I honestly, I should have probably looked at that, but I didn't.

HUGHES: Yeah that's fine. So we appreciate your service. It's an interesting board to serve on. No question about that.

MICHAEL THEDE: Yeah, it's been fun.

HUGHES: Anything else? Very good. We appreciate you coming and seeking reappointment as bringing your expertise--

MICHAEL THEDE: Thank you.

HUGHES: --with you. OK, with that, is there anyone wishing to speak as a proponent of Mr. Thede for the reappointment to the Ethanol Board? Anyone wishing to speak in opposition? Seeing none, anyone wishing to

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

speak in neutral testimony? Seeing none, that will close our hearing on the reappointment of Michael Thede to the Nebraska Ethanol Board. I did, we do have a little bit of leeway here. That I have asked the new administrator of the Ethanol Board to give us just a short overview of the Ethanol Board, since she is new. Hope that's not a surprise to you. We'll work you in now. We'll work you in now. Welcome.

SARAH CASWELL: Sounds good. Hello everyone. Thanks for giving me the opportunity to come in before you. I was think-- and thanks for your questions to Mike. Federal policy is something I think about and work on every day. I don't know if--

HUGHES: You'd like to introduce yourself?

SARAH CASWELL: I will, yep. My name is Sarah Caswell, I'm the new administrator of the Nebraska Ethanol Board. I took over after Todd Sneller retired after 42 years as the administrator of the Nebraska Ethanol Board last fall. And it has, it has been a pleasure and an honor to serve in this role since last September. The Nebraska Ethanol Board is a unique agency to the state of Nebraska. We are an advocacy agency, and so under the statutes we're given different tools with which we can help ensure the continued strength and growth of the ethanol industry here in Nebraska. As I don't think I need to tell anybody here how important the industry is to Nebraska in terms of a value-added agriculture stream. The University of Nebraska at Lincoln just recently issued a report showing that during the years of 2015 through 2017, the ethanol industry in Nebraska increased production by 23 percent and added more than 1,400 full-time jobs throughout the state. And they also showed that most of those jobs in the manufacturing side of the industry have an average salary of \$78,000. Since many of the ethanol plants here in the state and throughout the country are located in more rural communities, it illustrates how important those jobs and those plants are, and the strength of those plants are, to those local economies. And Nebraska is no different. Nebraska, with our 25 ethanol plants, is the number two ethanol-producing state in the country behind Iowa. And so back to the tools with which we help to promote the continued strengthen and growth of our industry here in Nebraska. As Mike indicated, our industry is dependent on the sale of our product by another industry, and it's also heavily dependent on federal public policy. The Renewable Fuel Standard that was first passed in 2005 and then enhanced in 2007, basically tells obligated parties under the law, which are refiners generally, you must, you refiners must, blend

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

certain levels of ethanol and other biofuels at increasing volumes each year through the duration of the policy. The corn starch ethanol has made up the conventional pool of the Renewable Fuel Standard, and so that ethanol demand right now per the statute should be 15 billion gallons. The refining industry generally is opposed to the renewable fuel standard and has fought the policy on several different fronts. So one thing that we're heavily involved in right now is working with the Governor's Office and other state agencies like the Agriculture Department, the Energy Department, and together are working to ensure that the expected proposed rule and then hopefully find a rule that would allow for year-round sale of E15 throughout the country, including Nebraska, is done before the summer driving season, and is done in such a way that it allows for those sales in the way that promotes the most delivery of higher blends of ethanol. And it's a constant fight, it's a ,it's-- I tend to call it a game of whack-a-mole because we're under constant attack, like Mike talked about. The petroleum industry has a very, is very well-funded, and they have very smart people working for them. And so they, like the ethanol industry, also know how to get their language into places where they want it. And so you always have to be vigilant. So at the state level, when we're talking about ethanol demand and ethanol delivery that helps promote the strength of our industry here, there's a bill that's coming before the Legislature. I think there's a hearing on it next week that would help incentivize more blender pumps throughout the state. That goes to the delivery of this product that we're working on in terms of increasing the demand for. So I would highly encourage you all to take a hard look at that bill when it comes up and support it if, if you think that that would achieve that end to help incentivize those blender pumps. Just for an example, 2016, the USDA gave a one-time BIP payment to the state of Nebraska: Biofuels Infrastructure Program funds. I think it was \$100 million in total. And with that, the state, through the Energy Office, was helped to incentivize and get 88 new blender pumps put throughout the state, which doubled our capacity in the state for retailers offering E15 and higher blends of ethanol. So it's really important, and it really does make a difference to have those incentives in place. And it's all a part of the new, it's all a part of the equation. You need demand, you need delivery for the product. And so we at the Ethanol Board will continue to educate consumers, educate policymakers in the state to ensure that folks know that vehicles that are 2001 and newer can all take E15. And we hope that to promote the Nebraska economy consumers will all use E15 in those types of vehicles. We're also, and I know I'm over or close to it, so I'll try and wrap it up really soon. I

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

could talk about ethanol all day long. And to that end, and to that end I would be really happy to meet with any of your office, any of you or your offices or your staff or whatnot at another time when I would have more time. However, the last thing I'll, I'll, I'll talk about is, you know, back in the 1970s, the Nebraska Ethanol Board did a first of its kind scientific test called the 2 million mile road test, which set the stage for widespread national adoption of E10, which is now in 97 percent of the U.S. transportation fuel supply. And my predecessor, and then now I are beginning a program that's been approved by the EPA for the state of Nebraska to utilize 50 of our state vehicles to demonstrate, hopefully demonstrate straight that E30 can be safely used in conventional vehicles. And so we're again on the cusp and the edge of innovation, and are setting the example that the whole nation is looking to in order to continue that, that ethanol demand at increasing amounts. So with that, I will end, and be happy to take any questions.

HUGHES: OK. Thank you, Ms. Caswell. Are there any questions?

GEIST: May I ask?

HUGHES: Senator Geist, yes.

GEIST: I'll make it quick. How many states actually use ethanol like we do here in Nebraska?

SARAH CASWELL: Every one of them.

GEIST: They all do? OK.

SARAH CASWELL: E10 is generally regular gasoline, so 97 octane if they're at the gas station here or anywhere.

GEIST: So E15?

SARAH CASWELL: E15 is offered at 1,700 locations throughout the country. And because of these incentive programs like the BitFunds and local programs, that number is increasing, and we're hoping that it will continue.

GEIST: OK, thank you.

SARAH CASWELL: And with, if that rule gets finalized for the year-round sale of E15 nationwide, so they don't have to switch it out

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

during the summer, we're hoping that that incentivizes more retailers to put in blender pumps to allow for E15 and higher pumps to be sold.

HUGHES: Additional questions? Senator Gragert.

GRAGERT: Senator Hughes, I was just interested, is there any research on using switchgrass instead of corn?

SARAH CASWELL: Yes, that would be, I believe that would be under the cellulosic categories. So as the RFS lays out four different types of biofuels. One of them is cellulosic biofuels. And they have to meet, there's all sorts of regulations, as you might imagine, at the EPA to be able to qualify as a cellulosic biofuel to earn the credits under the RFS system. But switchgrass has been tested. I don't believe it has a pathway, but I know that it's been looked at and may continue to be looked at. I haven't focused on it in a while.

HUGHES: Any additional questions? I just have a couple. How is the Ethanol Board funded?

SARAH CASWELL: We're a check-off and we're funded, it's \$1.25 tax on denaturant used in ethanol.

HUGHES: So--

SARAH CASWELL: Every gallon of ethanol made.

HUGHES: OK, so \$1.25 on every gallon of--

SARAH CASWELL: A \$1.25. Sorry. That would be awesome, actually. It's 1.25 cents, how about that? Sorry about that.

HUGHES: OK, so that, and that's on every gallon that's denatured?

SARAH CASWELL: That's right.

HUGHES: So do you see the trend of pure ethanol going into other manufacturing streams that are, that's being produced in the state of Nebraska that's going elsewhere currently?

SARAH CASWELL: We do. We are seeing that. And, frankly, it is something that we're looking at in terms of funding going forward and what not. But ethanol is being used in-- the, the trend is that it's growing from the fuel market into other, other markets, like renewable chemicals and products. Prairie Catalytic is a good example. It's a

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

co-located facility to ADM in Columbus. I went to the ribbon cutting last fall with the Governor. They are taking 30 million gallons from the ADM plant to utilize in their production process of bio ethyl acetate. It's the world's first bio ethyl acetate, which is a compound found in nail polish and things like that, household supplies. I've been to, you know, a couple of Department of Economic Development meetings just in the last two weeks with global companies looking to Nebraska and the strength of our ethanol industry here to do similar types of projects going forward focused on renewable chemicals and products that would utilize ethanol or one of their co-products from an existing plant in this other application.

HUGHES: So you see that pure ethanol being diverted into the industry--

SARAH CASWELL: Some.

HUGHES: --as a growing market?

SARAH CASWELL: It is a growing market, but I don't think that it necessarily needs to be in place of ethanol fuel under the right policy environment. But currently, we're seeing trends towards greater production and deals in the state and elsewhere to make renewable chemicals and products like the one I just described. Again, under the right policy environment, where refiners that do control the U.S. transportation fuel supply must utilize or blend certain levels of biofuels, including corn starch ethanol. I think that they don't need to be necessarily, you know, I think they can be compatible.

HUGHES: Well, I guess where I was heading was that if, if there is a different stream of ethanol being split off that no funding is coming for the board, you know, maybe that's something we should be looking at. But if you're diverting 30, 50, 100 million gallons that there should be some sort of a tax on those gallons, as well as the gallons that are going up to the highway fuels issue.

SARAH CASWELL: We've had preliminary conversations along those lines at staff levels, and I would welcome the opportunity to talk with you off-line about that in your offices and potentially it could be something that we could discuss for the future.

BOSTELMAN: Very good. Any other questions? Senator Bostelman. Thanks, Chairman Friesen. Friesen? You look so much alike. Senator Hughes, Chairman Hughes. We're in transportation the last two days. My

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

apologies. Thanks for coming today. Question on all ethanol plants in the state, do they fall underneath the board?

SARAH CASWELL: Yes.

BOSTELMAN: And is there a membership with that?

SARAH CASWELL: No, it's a state agency. It's a check-off, it's a state agency.

BOSTELMAN: Right. So what interactions do you have with those ethanol plants?

SARAH CASWELL: I interact with them quite often. I mean, we're a state agency much like, I look at it much like the Ag Department, the Energy Department. We're representing the state's interests in terms of the strength of the ethanol industry. And so, when appropriate, and when it directly impacts existing ethanol plants in the state, we have very strong relationships with them and involve them in conversations to make sure that what we're working on corresponds with what they need, etcetera. So we have very good relationships with them and with the trade association representing many of the plants in the state.

BOSTELMAN: And are you here in Lincoln?

SARAH CASWELL: We are. Yeah, we're at the State Office Building.

BOSTELMAN: OK. So my staff is sitting over here, Riley or Noah, if you could give them a card.

SARAH CASWELL: Yeah.

BOSTELMAN: I have something I would like to talk with you outside of the hearing room.

SARAH CASWELL: That would be great. That would be great. I look forward to it.

HUGHES: OK, any additional questions? Seeing none, thank you, Sarah, for coming in and doing this, introducing yourself to the committee. We appreciate that.

SARAH CASWELL: Thank you so much for the opportunity.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

HUGHES: Very good. With that, we will now commence with LB700. Senator "Commissioner Gordon," I believe. Welcome to your Natural Resources Committee.

BOSTELMAN: Thank you, Chairman Hughes. Good afternoon, Chairman Hughes and Natural Resources Committee members. My name is Bruce Bostelman, that's Bruce Bostelman, and I represent Legislative District 23. I am here today to introduce to you LB700. LB700 would add a new section that would require any person owning, operating, or managing a wind energy conversion system in this state shall be responsible for all decommissioning or reclamation costs necessary for removal of such system, including the removal of any above-ground or underground equipment and restoration of the land to its natural state in accordance to Greenfield decommissioning restoration practices. Currently, there are no state statutory requirements requiring underground deconstruction of wind energy conversion systems when decommissioned. The underground component of a wind energy conversion system consists of the, of the concrete pad and rebar. And the one handout that Senator Gragert is looking at right now and Senator Geist, that kind of gives you an idea of what the base, what we're talking about. The average concrete pad for wind turbines consists, consists of two components: the pedestal and the footing. The pad, pedestal is the raised concrete structure upon which a wind turbine will be fastened and stand; and the average pad, pedestal measures the 18 to 20-foot wide and about 8 to 9-feet deep. The pedestal is further supported by the footing. A typical footing measures about 50 to 65-feet wide and about 4 to 6-feet deep. Currently, the purpose, the process for decommissioning is an application is made with a plan submitted to a local board obligating the private electric supplier to bear all costs of decommissioning of the privately-developed renewable energy generation facility. Then, when the wind turbine is decommissioned, the owners of the turbine are responsible for, responsible to deconstruct the energy conversion system. Currently, most of these energy companies contracts state, contracts state that they will only remove the pedestal below the, below the ground. They will leave the large concrete pad in the ground below that, and they typically cover the pad with about three foot of dirt. Ultimately, this does, this does nothing to ensure proper restoration of the land to its natural and workable state, and is prone to erosion. Should the landowner want the rest of the concrete pad removed, it would be left up to them to do it themselves or hire a contractor. This bill, following the Greenfield practices, would ensure that the land truly gets back to its natural state prior to when the facilities were

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

installed, where it is serviceable for planting, building construction, or other common uses. This is important to recognize. As with electric generation facilities, of nuclear and coal for instance, they have a requirement when decommissioning a power plant. What we're talking about here is wind turbines are a power plant. They must return the site to what is called a Greenfield status. And that's important, Greenfield status Greenfield status means restoring the land to a preproject condition where residential development might occur. In other words, a land is restored so housing may be built on top of the area they are decommissioning. That would mean, in the case of a wind turbine, everything must be removed both above and below the ground. Hence this bill. Nuclear power plants decommissioning is spelled out in federal regulations Part 20, Subpart E, also 10 CFR 50.75, 50.82, 51.53, and 51.95. Coal power plants are subject to EPA rules related to coal combustion residuals, which are CCRs, and any hazardous materials associated with such. They must all remediate closed and monitor CCR areas. Coal and natural gas plants have two decommissioning options. One is the Brownfield decommissioning process and the other one is the Greenfield decommissioning process. The Brownfield means restoring to a condition suitable for another industrial facility, and it does not restore the land to preproject conditions. In other words, another facility is going to be built on top of the existing land or the area that this, the plant that's currently sits on. If the power plant owner decides a complete decommissioning, i.e. Greenfield, then they must remediate to preproject conditions aligned for home, in this case, for instance, for home construction. Since wind energy, energy continues to grow in our state, and they are a power plant just like nuclear, coal, or natural gas, they too need to decommission their facilities as the other generation facilities are required to do. In other words, if you want to be a generator of electricity you need to decommission your facilities just like everyone else. Further, I have provided you with a couple of contracts that wind companies are using in Nebraska. And I want to draw your attention to their decommissioning of underground facilities. In the first contract offer on page 21, they will remove the foundation to a depth of about four feet. I think we have that marked for you on the page. In the second contract, on page 9, they were they will remove the pedestal to a depth of four feet. And then in the third contract, on page 8, they will remove all physical material to a depth of three feet. In all of these instances, and every contract I have seen, that the decommissioning of underground facilities does not meet the Greenfield test requiring the removal of the entire facility. I would say the majority of wind turbines are

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

being placed on areas that will be highly erodible or, if farmed, are row crops. The current minimal covering of dirt will erode off with normal farming practices, thus leaving approximately 9,000 acres of ground sterile for future production or use. So why do I say 9,000 acres? Well, there are 802 existing wind turbines in the state, and an addition, and an additional 2,108 either under construction or under development in the state. My source is the Nebraska Energy Web site, Energy Office Web site. The average site with a turbine, the pad, and surrounding area is three acres. So we take three acres times the 3,000 turbines that are either constructed or potentially under way to be constructed, we get the 9,000 acres. That is a lot of ground either taken out of production or so you can, or so you cannot build or live on it. Let's look at the financial impact using today's commodity prices. If I were to raise irrigated corn, which averages 220 bushels an acre at \$3.60 a bushel, the market value of this crop on 9,000 acres is \$7,128,000. If it were dry land and at 150 bushels an acre, it's \$4,860,000. What we, what if we planted soybeans? With a price of \$8.50 per bushel, the irrigated average bushels is 78, 70 bushels, and the market value is \$5,355,000. And dry land, \$3,825,000. Of course, not all of these acres will be planted in this manner. I think you get the idea of the economic impact this will have if decommissioning is not carried out in a Greenfield process. If the land was not, if the land was to be built on for housing, the economic impact will be significantly higher. Many people move out into the rural areas and they build their houses, build acreages, those type of things. So that it is a reality that, you know, housing can be developed in these areas or, or smaller suburb-type areas. I want to finally draw your attention to the Texas Law, Law Review, and I-- there is a handout with that as well. Volume 95:123, titled Wind Energy's Dirty Word: Decommissioning. In this law review, Mr. William S. Stripling speaks directly to the decommissioning of wind turbines. This is an extensive nationwide review of what he calls a lack of consistency in decommissioning throughout the U.S. He states on page 145, and I want to quote: Aside from these few examples, however, much of local regulation continues to fail to provide decommissioning security. At present, decommissioning law required remains a patchwork of state regulation and local ordinances. As in many new industries, the law is struggling to keep pace with the boom. The previous sections of this note have sought to illustrate the enormous task that wind farm decommissioning will present within the next several decades and highlight the underdeveloped state of current law governing decommissioning. End quote. Finally, in his conclusion, he states, and I quote: More troubling is the open question of whether many wind

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

farms will be decommissioned at all. Ten years after America's best-documented case of wind farm abandonment, we continue to face the specter of a day when green energy's glistening installations are instead fields of full-- fields full of falling-down junk. End quote. This bill will not address the financial impacts of decommissioning, but it will address the complete appropriate power generation decommissioning requirements of Greenfield, just as every other power generation facility in the state must complete. Therefore, I ask you, your, for your support on LB700 and its advancement to General File. I believe that this bill, what I'm asking is that the concrete piece be removed. I believe it's an environmental issue, I believe it's an issue that we need to take care of at the start and not wait till we get 3,000 turbines put in the ground and try to figure out what we're going to do with 9,000 acres of land that we may not be able to use as it was before. So I'm happy to answer any questions that you may have.

HUGHES: Thank you, Senator Bostelman. Are there questions? Senator Geist.

GEIST: You know, I've thought about this when we had some other discussions in other years about wind energy. And, and at the time it was in the Sandhills. And, and something that I've not ever heard an explanation for is a little bit of what you're addressing here. And that is, tell me if you know, about the impact that this has on the environment around it if you don't remove the concrete pad.

BOSTELMAN: Well, I think there's, I think there's issues that when we start putting fertilizers and sulfur and other things on, we have concrete, we have steel on the ground, as you work that soil. If it's not always flat soil, so that's going to leech down into that area. What is that going to do to that concrete, to that steel over time? Do we now have a groundwater issue, those type of things? So just to eliminate that, we're on the site, we're decommissioning, we have the equipment there, let's just pull it out and then we don't have to worry about it.

GEIST: And then, could I ask a follow up to that? And how-- this looks like, I know you gave yards or feet or whatever. How much stuff is that really?

BOSTELMAN: I think that's something you want to ask maybe someone who comes behind me from the industry itself. They can answer that question for you.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

GEIST: OK, thank you.

HUGHES: Other questions? I've got a couple. So the, I'm assuming, I've never been to a wind farm, so I'm assuming the power generated goes underground to a substation?

BOSTELMAN: Correct.

HUGHES: Are you thinking we should take those wires out as well?

BOSTELMAN: No, that's a good question. I mean, we had a discussion earlier this morning about that. And, you know, and maybe someone behind me can answer it, but I was looking at the statutes, and I think that's already required. We're just not doing it. I'm not looking to do that, no. My focus is that concrete pad and that's all. Get that concrete pad out of there so that we can return that land back so we can farm it effectively, use it in the years to come. Or if we're going to build on it, we can build on it.

HUGHES: Do you have any idea what it, what it would cost to decommission a wind tower?

BOSTELMAN: You know, that's a question I've asked them several times, and maybe someone from the industry will be able to give us that answer.

HUGHES: OK. Do you have any, any figures of what kind of revenue generated that, that we're looking at? I know, are they-- do, do any of them qualify for state incentives like the Nebraska Advantage Act or anything like that?

BOSTELMAN: Sure. Currently, currently, I looked up earlier today on applications for the Nebraska Advantage Act. And right now, there's \$2.447 billion dollars being requested through the Nebraska Advantage Act by wind companies. So that's a B, a billion, not million. Production of a wind turbine itself, over its life, it's going to generate, and that's if it's a 20-year life cycle. If they last that long, it's about \$1.45 billion dollars, million dollars, sorry. So it's about, you know, \$80,000 a year without adding in the Nebraska Advantage funding as well. So that includes PTCs, you know, about \$285,000 annual in sales.

HUGHES: So this, this \$2.44 billion that apparently the state is on the hook for, how long--

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

BOSTELMAN: Well, it's applied.

HUGHES: --to pay that?

BOSTELMAN: Yeah, well--

HUGHES: Is that with, over the 20-year lifespan or the next 5 years?

BOSTELMAN: Well, these are the applications of the Nebraska Advantage Act. So they apply, and once they fulfill those obligations then they apply to--

HUGHES: So that's only if everybody gets built?

BOSTELMAN: Exactly. So if they meet all the requirements of the act, then that's the money that would be paid out, yes.

HUGHES: I'm in the wrong business. Senator Geist.

GEIST: Yeah, sorry. I didn't mean to interrupt. I do have one, I'm ignorant too about some of the decommissioning. Is the, is the tower itself recycled, or what's done with the tower?

BOSTELMAN: Well, my, my understanding on most of it, if there's steel structures right now, that's recycled material. The nacelle itself, the material within the nacelle is recyclable. The blades are not. The blades are made of, of a compound that's not. Now, older turbines may, newer turbines may not. Again, maybe someone from the industry behind me would better address that. But the majority of the above-ground structure, my understanding is, with the exception of the blades, because they're just made of a material that does not, they can't recycle or decompose-- and it doesn't, I guess--

GEIST: Degrade?

BOSTELMAN: --use in that area.

GEIST: OK, thank you.

HUGHES: Any other questions? Seeing none, I assume you'll stay to close?

BOSTELMAN: Yes.

HUGHES: With that, we will open it up to proponents to LB700. Welcome.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

KRISTEN GOTTSCHALK: Thank you. Senator Hughes and members of the Natural Resources Committee, my name is Kristen Gottschalk, K-r-i-s-t-e-n G-o-t-t-s-c-h-a-l-k. I'm the government relations director and registered lobbyist for the Nebraska Rural Electric Association. We have 34 rural electric members with 285,000 meters across the state with over 95,000 miles of distribution line. And we're here today to testify in support of LB700. And several years ago there were concerns that, as more and more wind and solar development occurred in the state, that landowners needed to have some kind of guidance with respect to decommissioning. And I believe Senator Dubas in 2012 had legislation that addressed decommissioning in a very permissive sort of language. And as LB700 is drafted, it goes into those sections and statutes and adds these new requirements that, that mandates a certain level of decommissioning. And, with respect to, as Senator Bostelman was discussing, the need to ensure that agricultural practices can take place uninhibited after these wind turbines have fulfilled their useful life and are decommissioned is, is an important aspect. So we do agree with that. One comment we might have is, with respect to a language of decommissioning in other sections of statute, and that includes Chapter 70, dealing with wind energy development, and there may be a need to coordinate some of the language to cross over Chapter 66, Chapter 72, and then into Chapter 70 and 70-1014.02. We do understand, I'm not an expert, so I can't tell you how far down the concrete goes. But it is our understanding that even the concrete that's removed from the ground has a recyclable value and a monetary value, and can be recycled after decommissioning take place. I would say it doesn't cover the cost of decommissioning, but it certainly would offset a little bit of that. So with that, again, just emphasize that we do support this process of clarifying decommissioning in Nebraska. And I'd be happy to answer any questions that I'm able to.

HUGHES: OK. Thank you, Ms. Gottschalk. Are there any questions? Senator Geist.

GEIST: I'm full of it today. OK. Now, Senator Bostelman referenced when he, in his opening that you have, rural public power would have a responsibility for decommissioning whatever you might have to decommission. What is, what does that responsibility for your business look like? Or for--

KRISTEN GOTTSCHALK: The decommissioning would just be removal of poles and wires in the process. If we, if we retire lines, we do have to

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

remove and retire those, and that's part of easement language that we have with landowners.

GEIST: Do you have to return that area to Greenfield? Or, I'm just-- what I'm getting at is do you have the same responsibilities?

KRISTEN GOTTSCHALK: Since it's not generation-- for my members, since it would not be generation facilities; and the Greenfield, Brownfield status applies to generation facilities. You know, removing a pole, you remove the entire pole.

GEIST: Right.

KRISTEN GOTTSCHALK: You're not leaving a portion of it in the ground.

GEIST: Okay.

KRISTEN GOTTSCHALK: So it would be a totally different level.

HUGHES: Additional questions? Seeing none, thank you for your testimony. Next proponent. Welcome.

PHILIP WEHRMAN: Thank you. Thank you, Senators, ladies and gentlemen. I am Philip Wehrman, that would be P-h-i-l-i-p W-e-h-r-m-a-n. My wife Diane and I reside west of Nelson, Nebraska, which is Nuckolls County. We farm, we have three children. Two that, I think one is back in farming, one's thinking about it. I was past school board president and elected to South Central Public Power District, which is power company distributor in our area. And you guys, you have had mentor, parent, grandparent that is instilled something to you that you go back to during life-changing decisions. My grandfather gave me several of them. Most of them I wouldn't want to use in public. But a couple of them is: Take care of the land and it will take care of you. It's relates to stewardship, to going from in the '30s when we plowed all the ground and dust blew everywhere, to nowadays you do no-till. You drive through the country, there's corn stocks in all the fields catching the snow and keeping dust from blowing too much. And all this bill looks to me like fits right into that stewardship of the ground, the farm ground, the pastures, everything. It's just good common sense. And the other one was to: If you borrow something, lease it, rent it, return it in as good a shape as it was when you picked it up. If not better. And that's all the wind power company is doing, is leasing, renting this ground for a long-term deal. And they should return it to how it was before they got it. And got to use my notes.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

We had a '05 pipeline, natural gas pipeline cut across our farm, they done a tremendous job of doing what they said they'd do. Trenching it, putting it back as it was, and that's been 14, will be 14 years ago. And last fall, the yield monitor, you could tell right where that pipeline went across the farm. And all they did was put a piece, put a pipe in and cover it up versus a lot of yards of cement. And I just think it would be-- I'm a full supporter of this bill.

HUGHES: Thank you, Mr. Wehrman. Questions? Senator Gragert.

GRAGERT: Thank you, Chairman Hughes. And just, you know, as a landowner then, what environmental impacts of these components remaining underground do you see?

PHILIP WEHRMAN: Everything from a 3, 4 foot down corn roots would normally go 5, 6 foot in the ground. During dry spells, the root would go down and hit the cement and go out, and these spots will burn up if not adequate rainfall. The road going in will be like that pipeline 30 years from now, you will see a yield dip no matter how good we do it. You will have less vegetation over this area. And hopefully, you can get it pulled out. Well, if it's still there, you can't build anything there. Can't-- limits your ability to do things with the parcel of ground.

GRAGERT: So you're talking, you know, your corn yield is possibly going down because the roots actually go further down than four feet in seven years, along with other types of grasses. Right? Ryegrass.

PHILIP WEHRMAN: Yes.

GRAGERT: OK, thank you.

PHILIP WEHRMAN: The-- where was I going with it? Any kind of wind erosion, moisture erosion, they, we still do deep tillage: 18 inches in places, call it ripping, kind of break up hard pan. And very much any kind of erosion, you're going to be hooking into a piece of cement.

GRAGERT: Thank you.

HUGHES: Additional questions? Congratulations on one of your children coming back to the farm and another. That's very good.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

PHILIP WEHRMAN: Oh, forgot to even mention that my kids would be sixth generation farming.

HUGHES: Very good for you. Do you have any, any wind generation on your property?

PHILIP WEHRMAN: No.

HUGHES: Is there any in the area?

PHILIP WEHRMAN: There's leases being taken, gotten in the area now.

HUGHES: They're actively--

PHILIP WEHRMAN: Actively soliciting.

HUGHES: --property in your area. OK, very good. Any different questions? Seeing none, thank you for your testimony. We appreciate you coming in.

PHILIP WEHRMAN: Thank you.

HUGHES: Next proponent of LB700. Welcome.

TERRY MADSON: Thank you. My name's Terry Madson, T-e-r-r-y M-a-d-s-o-n. I live in Nuckolls County, down the watershed away from Mr. Wehrman's place. Grew up on a farm that had, has been in the family since 1910, and would kind of like to share a story of unintended consequences. When my people got there, the creek called Elk Creek, and it was called Elk Creek because there were elk along there originally, by 1910 they'd been hunted out. But it was, it was almost all prairie at that time, and prairie chickens were very abundant. But you could, my dad says that in 1910 his, his dad could leap across the Elk Creek. And then came the 1930s and everybody clean farmed, of course. And so no rain, no vegetative cover because it died, and then high winds and so erosion occurred. And so the unintended consequence of that clean farming and the desire of the government to be a world player in wheat production was that now today that Elk Creek, and I just put a bridge across it here in the last couple of years, and from the deck of the bridge to the water it is now 13 feet. So the unintended consequence of, of well-intentioned, productive practices ended up being that that's a nonrestorable sort of occurrence. Nothing that's a, that's, that's financially possible will ever bring that back to what it used to be. And so what, what I worry about from the standpoint of my grandchildren and that

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

generation and beyond is, if we're not careful, even a good-intentioned wind generation facility could very well end up causing something similar. And one of the things I think that, that Senator Bostelman says, by the way, I agree with everything in the bill, may not have gone far enough. It might have been preferable to get more specific about the roads. The access roads are generally just placed at the convenience of the contractor or the, or the facility owner. They don't give a lot of concern to upgradient and downgradient or on the contour, they just put them in. And unless those roads are managed correctly, you're going to see a lot of incisement, a lot of silting in the road ditches, the watersheds and ponds and so forth. And in fact, in Webster County, there's a 40-some turbine installation, and you can see that even today. And they've just barely started. So I don't know what it will be like 40 years hence. The other, the other concern is, is that I think that the wind companies tend to want to seek out every available acre. And down in our particular county, there's 120 turbine proposal. And the contract actually solicits the landowner to allow the tenant to help them get out of a CRP contract. And I'll just read you a quick sentence: landlords shall cooperative at no out-of-pocket cost to the landlord in any effort by the tenant to remove all or a portion of any land from the CRP as needed for construction operation and maintenance of the project. The problem with CRP land is, is by, by definition it's highly erodible, or at least a big portion of it is highly erodible. I don't remember anymore. It may be 10 percent or 30 percent, but, but it's gonna be steep and they're not gonna go, they're gonna go on the most convenient route to the nearest road to service those turbines. And so, I guess, my point is, is I think Senator Bostelman is doing the right thing to be far-sighted on this. I sure hope you folks will support his effort and move the bill out of committee.

HUGHES: OK. Thank you, Mr. Madson. Are there any questions? Seeing none, thank you for your testimony. Additional proponents. Any additional proponents? Seeing none, we will move to opponents of LB700.

DAVID LEVY: Thank you. Good afternoon Chairman Hughes, members of the committee. David Levy, D-a-v-i-d L-e-v-y, here on behalf of BHE Renewables. Going as the first opponent, I may be subjecting myself to many of the questions that came up earlier. And that's OK, I'll do the best I can. I am here in opposition to LB700 for a couple of reasons. Really, first and foremost, and the primary issue with the bill is the requirement to remove the entire foundation, rather than the top four

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

feet, three feet, five feet, whatever the local county typically would require. Before I get to that, though, I just would like the committee to know the belt and suspenders and whatever other item of decommissioning there is currently in Nebraska. First, Nebraska law requires a wind lease to describe decommissioning requirements and decommissioning security requirements, financial security requirements that may be applicable to a given project. Second, most counties even those without zoning, with which I'm familiar, have decommissioning requirements in their county zoning regulations. Or in the case of Wayne County, where we have a client doing a project right now, the developer and the county are entering into a decommissioning agreement, negotiated bilateral agreement, voluntary by the developer as part of being a good neighbor and a good member of the community. We also have a statute that this Legislature just adopted in 2016, that says, if there is no other decommissioning requirement or decommissioning provision, that then decommissioning, including again, financial security for decommissioning a bond, a letter of credit is handled through the Nebraska Power Review Board. So it's handled with the landowner; it's handled in the local county, as that county and its elected county officials see fit; and it's backstopped at the Power Review Board. This is a well-covered situation at our state. That said, again, my client's real objection to Senator Bostelman's bill is not that it requires decommissioning. Decommissioning as it is a fact of this industry and it's something that this industry takes very seriously. It is the requirement to remove the entire foundation. It is simply unnecessary and it is a great expense. On a 200-megawatt wind energy project, which is kind of the average these days in Nebraska, this would add approximately \$5 million of decommissioning expense. Could be more, could be less given project. But that's, that's an idea of the type of dollars that we're talking about here for something that really isn't necessary. There was discussion of Brownfields and Greenfields, and the EPA definition of a Brownfield, the U.S. Environmental Protection Agency essentially is: real property with the presence of a had-- a hazardous substance, pollutant, or contaminant. The EPA does not classify either concrete or steel as a hazardous substance, pollutant, or contaminant. So the Brownfield, Greenfield distinction, with all respect here, really is, is not applicable. It's apples and oranges. We're not talking about a Brownfield if the foundation, the lower part of the foundation is left. Those are not hazardous materials under the definitions under federal law. Just a couple of other things, and I would be happy to respond to any of your questions. One of the other things that, that is missing from this bill is some clarification between, or some

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

clarification of what is decommissioning. I was at a hearing yesterday in a county in Iowa regarding a wind project, where the wind project has been there for a while and the company is repowering that project. They leave the foundations, they leave the towers, they replace the nacelle, the part at the top, the generator, and the blades. We need to make sure that that's not considered decommissioning. That project may not be running for some time while they are doing that work, and that needs to be very clear. I think we want to encourage that repowering in that reuse of those projects, and we need to be very careful with that. One last point. Senator Bostelman mentioned a figure of three acres per turbine. With all respect, that, that is not consistent with my experience working on many wind projects in this state. That number is more like a quarter acre or so between the road, the foundation, the area around the foundation, and so forth. So however that math goes, that I think it was 9,000 acres, in my estimation is a, is a very high number based on an unsubstantiated assumption. Really, this comes down to local control and landowner control. This bill is, again, with all respect, a solution seeking a problem. This has not proven to be a problem in Nebraska, landowners and local counties and the Power Review Board have it well-handled. With that, the red light is on and I'm happy to answer any questions you might have.

HUGHES: Thank you, Mr. Levy. Are there questions? Senator Geist.

GEIST: I will ask, it sounds like maybe you're-- well, you're on the spot I guess, but maybe you're the person to ask. How much of, how much would it cost to remove that pedestal? Is that what it's called, the base?

DAVID LEVY: Well, the part below--

GEIST: Yes.

DAVID LEVY: --four feet or five feet?

GEIST: Like, roughly.

DAVID LEVY: Sure. So, and let me take the opportunity also. If four feet is not the right number and five feet is the right number for corn roots, that's, you know, that's something worth discussing. Four feet is the typical number. But again, to use a 200-megawatt project, the difference between removing that and not removing that is on the order of \$5 million for that project. So it's a significant additional

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

expense. And it's not just an expense at the end of the project. In most situations after the first 10 years the project has been operating, the developer is required to post a bond to cover the cost of decommissioning. There's been concern-- hasn't come to pass, but that they might not be present or might not have the financial wherewithal to do the decommissioning. And so they are required under state law or under county ordinances and regulations to post that bond. Those bonds are very expensive, surprisingly expensive. And so that additional \$5 million of decommissioning costs isn't just a future cost, it's a current cost and the cost of that bond that that developer has to carry for 10 years, 15 years, 20 years, whatever the case might be. And again that's a 200-megawatt project. It would be more for a larger project.

GEIST: Right, as it grows. All right.

DAVID LEVY: Yeah, thank you.

HUGHES: Senator Moser.

MOSER: How many towers are there in a 200-megawatt?

DAVID LEVY: Oh, on average, somewhere around 80 to 100. Something like that, 75 to 100.

MOSER: So \$5 million. If they're \$100,000, that would be 50 towers? Is that how that multiplies out?

DAVID LEVY: I think that's right.

MOSER: And so what would it cost to dig it down four or five feet? I mean, how does the total removal compare to just taking it to what requires, what's required of it right now?

DAVID LEVY: Sure. It's fairly proportionate. So if you've got, let's try and make the math easy. If you've got a 16-foot deep foundation and you're going to take it down to 4 feet, you're, you're taking off the top quarter of it. So if it costs \$5 million to take out the remaining three quarters, it's about \$1.125 million to take off the part that's required to be taken off.

MOSER: Are they severable, or do you have to go in there and chip it out a chunk at a time?

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

DAVID LEVY: You have to go in there and jackhammer it out. And then you come in and backfill and compact and do all those things.

MOSER: Are there other things in that foundation other than concrete and steel?

DAVID LEVY: No.

MOSER: Do the conduits that carry the electricity to the gathering point, wherever that is, do they go through that foundation?

DAVID LEVY: No. The cabling comes out of the wind turbine and--

MOSER: Over the surface?

DAVID LEVY: --under, it goes under the ground, typically, in a conduit.

MOSER: Are there salvage, are there salvageable materials when you take one out that you can get some money returned for what you tear out?

DAVID LEVY: There are, typically the, the salvage value of a facility is factored into the decommissioning. A decommissioning plan that one provides to a county has an engineer-prepared plan an estimate of decommissioning costs. That's how the value of the bond is figured, and that salvage value is in there. So the steel is salvageable, the concrete can be recycled. The blades actually now are recycled, there are a couple facilities in the country where you take the blades and they recycle those. The wire that connects the turbines underground is copper, so that can be reused. So a lot of it is reused. But the salvage value still is somewhere in the neighborhood of, at best, half the actual decommissioning cost.

MOSER: That surprises me that it would be that much, because concrete is not worth much when you've got to chip it out with a jackhammer.

DAVID LEVY: Yeah, it's the steel and copper that is the vast majority of your salvage value.

MOSER: Thank you.

DAVID LEVY: Sure.

HUGHES: Additional questions? Senator Gragert.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

GRAGERT: Thank you, Senator Hughes. Just a couple of questions. In the opening, Senator Bostelman brought up the components down below concrete: rebar. Now, you don't see any susceptibility of sulfate ammonia attaching to those through the application of fertilizers and that kind of thing?

DAVID LEVY: You know, I suppose it's possible. But again, if it did that, and let's say those materials break down over time, again, the EPA has not classified those as hazardous materials. Concrete starts out as natural materials. So if that happened, I'm not sure that the consequence would be anything necessarily bad. Again, it's backfilled, it's compacted to avoid erosion and things like that. But--

GRAGERT: It's interesting, because they won't let us up along the river put any kind of concrete on the banks that have rebar in it. So that's where I'm coming from with that. You know, I guess, could you just, you touched on it a little bit, but how much money decommissioning average right now per tower does it cost to decommission a tower? I mean, do you know? Are you just around \$100,000, or is it--

DAVID LEVY: So, you know, it's different again for every project, and the salvage value of metal and all that factors in. But the decommission, total decommissioning cost for a 200-megawatt project, for example, is on the order of \$13 to \$15 million, something like that.

GRAGERT: I thought it was \$5 million. What--

DAVID LEVY: That, that's the additional amount if you had to take out the rest of the foundation.

GRAGERT: OK. So the, the actual concrete then, how deep does it actually go on in--

DAVID LEVY: The entire foundation?

GRAGERT: Yeah, the entire foundation.

DAVID LEVY: Again, varies by soil type and turbine type and all of those things. But somewhere 15 feet, plus or minus.

GRAGERT: OK.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

DAVID LEVY: Twelve, 12 to 20 feet as a range maybe.

GRAGERT: So then do you take that in the decommissioning plan with the producer or the owner? And do they have their own itemized decommissioning plans or is there one decommission plan for everybody?

DAVID LEVY: No. In each case, at least in my experience in every county that I've worked in in Nebraska, they require a professional engineer or licensed engineer prepares a specific plan for that project that goes through that much steel, that much concrete, that much gravel, all that much copper wire, all of those things.

GRAGERT: For each individual tower, not, not--

DAVID LEVY: The decommissioning plan typically is for the entire wind farm, but it's based on decommissioning each tower.

GRAGERT: Yeah, but one, you may have producers that have one tower, two towers. They don't, I mean, so that they're all different. How do they write up the contract or in the lease the decommissioning portion of that? What is actually going to go down on their towers that are actually on their land?

DAVID LEVY: The leases typically are the same from landowner to landowner within a project, so that that provision will be the same. And then where you have a county zoning regulation that governs this aspect of the project, that will apply to the entire project, whether it's one turbine or 100 turbines or 200 turbines.

GRAGERT: And just confirming and clarifying for myself, the actual blades are fiberglass, so they're not recyclable, right?

DAVID LEVY: You know, I don't know how it works. But I do know actually, the hearing I think I mentioned that I was at in Iowa yesterday where they're going to repower the turbines, those blades are going to-- they take them down, they cut them in half, they take them to a facility in Oklahoma and in some fashion they do recycle them.

GRAGERT: OK. One last question then. I come from up in Holt County, which I stated earlier. So that county board may have a decommissioning plan. OK? How much money is actually put in first when that tower is first erected? How much money goes into this

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

decommissioning plan, and where is it? I guess I could ask Holt County that, but maybe you know.

DAVID LEVY: Sure. So the decommissioning plan is an attachment or an exhibit to the decommissioning agreement. Decommissioning agreement is an agreement between the owner of the facility and Holt County. So you could go to the Holt County clerk today and get a copy of that decommissioning agreement and that decommissioning plan for that project in Holt County. Typically, the way the financial security works is it's based on that decommissioning plan. Typically, it's given after the project has been operating for 10 years, because the theory is the project is highly unlikely to be decommissioned in the first 10 years. You've got lenders on these projects, so if something should happen to the developer, the lender is going to step in and operate the facility to, to protect their security interest in their nine-figure loan that they might have on this project. And then what most counties require is oftentimes after five years, and then at that 10 year point they require an update of that decommissioning estimate. So you get a current estimate based on the then-salvage value and all costs and all of those things, and then that bond or letter of credit is posted with that county in that amount at that time. And then many counties, and I think Holt County is one of these, they then require updates every five years or so as well, just to make sure that that bond or letter of credit remains adequate.

GRAGERT: So the owner of the windmills, not, not the producer, but the, the owners then, they have the obligation of updating that decommissioning every five years and making sure if it is going to by estimates going to cost more to decommission, they're going to put more money into that bond?

DAVID LEVY: That's right. That's right. And if they don't do that, then they're violating county regulation.

GRAGERT: One last question and I'll call it. But what if, what if that tower gets struck by lightning in the first two years and they decide they don't want to replace it? What happens? Decommissioning kicks in right at that point then?

DAVID LEVY: If it, if a tower was struck by lightning, for example, typically what the developer would do is they would replace it. They've spent hundreds of millions of dollars, in the case of the project in Holt County, that's a \$700 million investment, private investment in Nebraska. They would come and they would replace that,

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

that turbine with a new one and fix that. I mean, you're gonna make use of that investment. You've got the lease, you've got the foundation, you've got the wires that connect it, you've got the rope. You're gonna come back and make use of that.

GRAGERT: All right. Thanks a lot.

DAVID LEVY: Thank you.

HUGHES: Additional questions? Senator Halloran.

HALLORAN: Thank you, Chairman Hughes. May have misunderstood from previous testimony. But my understanding is that the power generation decommissioning standard for other forms of electrical generation is the Greenfield status. Does that sound correct?

DAVID LEVY: That, that was the testimony that I heard. And what I would submit to you here is that leaving the foundation is consistent with that. If a Greenfield is the opposite of a Brownfield, and a brownfield according to the EPA is something that has hazardous materials in it, concrete and steel are not according to the EPA hazardous materials. So leaving that lower part of the foundation there does not make this not compliant with a Greenfield concept.

HALLORAN: So define Greenfield concept to me, or Greenfield status then. What--

DAVID LEVY: I don't know that I can do that. The definition of a Brownfield is, is property with hazardous materials in it.

HALLORAN: I understand.

DAVID LEVY: So a Greenfield would be property, I suppose, without hazardous materials in it.

HALLORAN: OK. What, what is, what, what's the lifespan of a 22-megawatt project?

DAVID LEVY: So, a number of years ago, I believe it was 2010, the university did a study for a legislative bill at that time. And they determined, at least at that time, that the typical lifespan of a wind turbine was about 25 years. Now, as I mentioned, the project in Iowa, that project's been around for a while and they are repowering that project. So what we're seeing typically is when the lifespan or the useful life of turbines wear out, is they're actually replaced again

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

because you have all of the other infrastructure there and the leases and so forth.

HALLORAN: Over the lifespan of a 200-megawatt power project, what's the projected revenue? And that varies with I understand power.

DAVID LEVY: Yeah, that's impossible to say because power purchase prices vary so much, and wind speeds and capacities vary so much.

HALLORAN: Yes, they do. So surely though, when you do a project like this, you project revenue.

DAVID LEVY: Sure.

HALLORAN: Do you have some idea what that projection would be for a 20-year project?

DAVID LEVY: I don't.

HALLORAN: Also, when they do projects for building a project such as you're talking about, do they take into consideration we've got a wide variation of soil types in the state? From Sandhills' pure low sand to very heavy clay, loam soil. Is there a different decommissioning standard for those variations in soil types to return it back to its Greenfield state, let's just call it for--

HUGHES: Typically, you would backfill the part of the foundation hole where the concrete was gone with soil that was compatible with the soil in the area. Other than that, I don't know that it would be-- there wouldn't be a different standard per say, but you would certainly backfill in an appropriate way.

HALLORAN: I imagine the revenue is quite substantial for a 20-year project for a 200-megawatt, wouldn't it be?

DAVID LEVY: I would think so. But again, recall the project and Holt County, which is 400 megawatts. That's a \$700 million upfront investment. So I don't know that you can look just at the revenue, you've got to look at the investment, the capital investment upfront as well.

HALLORAN: OK, thank you.

HUGHES: Senator Moser.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

MOSER: How long is a typical lease? So if I owned land and I lease it to a wind developer, what do you typically, typically look for in the length of the lease?

DAVID LEVY: They are typically somewhere between 25 and 40 years.

MOSER: And is it renewable at the option of the developer or at the option of the landowner?

DAVID LEVY: Really depends on the lease. State law provides that a wind lease cannot be any longer than 40 years without the consent of both parties. But a lease is a bilateral negotiated contract between a landowner or a group of landowners and a developer.

MOSER: So if you develop it, and say 10 years down the road you figure out that there are new turbines and new gearboxes and whatever, or for that matter new design of blades that are more efficient, do you have to go back and re-- and increase the contribution to the landowner? Or is it just a steady rental?

DAVID LEVY: Again, depends on the lease. I can tell you that, again, the project in Iowa where I was at the hearing yesterday, that company is bringing all of those landowner leases up to their current lease standard. So they're acknowledging what the landowners that they're lengthening and improving the project.

MOSER: Does the landowner get to use the property around the tower or does the tower developer insist on a certain clearance that they stay away from them?

DAVID LEVY: There is typically a kind of a gravel circle--

MOSER: Perimeter?

DAVID LEVY: --of maybe 12 feet, something like that in distance from the edge of the foundation to where the farmer or landowner can do whatever it is he or she wants to do.

MOSER: but that might be a couple of hundred feet square?

DAVID LEVY: Oh, I suppose.

MOSER: Just trying to get the idea of it all in my head. Thank you.

DAVID LEVY: Sure.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

HUGHES: Any additional questions? Senator Halloran.

HALLORAN: Thank you, Chairman Hughes. So I am not necessarily expecting you to know what the decommissioning of coal-fired power plant would look like but the-- would, would they get away with four foot, five foot and leave anything below that in place?

DAVID LEVY: You know, I don't know. I do think though, I appreciate that question, because I think it's important. Again, the, the comparison between decommissioning a wind farm and decommissioning say a nuclear plant, again, with all respect, really is apples and oranges. I mean, nuclear plants use some of the most hazardous substances known to humankind. That's not the case with the concrete and steel foundation. But I don't know anything about the decommissioning specifically of a coal plant.

HALLORAN: Thank you.

HUGHES: Have there been any wind generators decommissioned in the state of Nebraska to date?

DAVID LEVY: There have. There-- one of the oldest projects in Nebraska was in Kimball County, and that project actually was recently decommissioned and replaced by a client of ours working with MEAN. And I believe MEAN may be here to testify. They can tell you more about that project. That's the only one I know of.

HUGHES: So it was decommissioned and rebuilt, not refurbished?

DAVID LEVY: It was, it was decommissioned and expanded. So the site was reused in a bigger way with new turbines.

HUGHES: OK. Senator Moser.

MOSER: Do other states require the complete removal of the foundation?

DAVID LEVY: I'm not aware of any that do. I know in the Midwest, anyway, that the common practice is the same as it is here in Nebraska. That's kind of how we got to this practice. I also know that Texas, which was brought up earlier, does not have a statewide decommissioning statute.

MOSER: Are the counties allowed to negotiate their own decommissioning requirements?

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

DAVID LEVY: Absolutely. It's very typical.

MOSER: So if they wanted it and have it completely removed, that could be factored into whether the deal goes forward or not?

DAVID LEVY: That's right. I've never had a county insist on that. But if they, they could if they wanted to, and it probably would mean that project would go elsewhere.

MOSER: Yeah, what's \$5 million?

DAVID LEVY: Right?

MOSER: OK. Thank you.

DAVID LEVY: If you're the Revenue Committee, I might be saying that too.

MOSER: We all spend money so there's no.

HUGHES: So there's no way you would-- a standardized decommissioning plan across the state? Yes or no? I mean, we're talking about counties can do this and they can't do that. So is that just strictly the decommissioning that is agreed to between the landowner and the developer?

DAVID LEVY: Well, the most counties, at least every county where I worked and where there is a project, has county, either has county zoning regulations on decommissioning with which you have to comply, or you negotiate a decommissioning agreement with the county. And there is not a standard, per se, but as these things go, counties have limited staff and limited experience with these type of facilities oftentimes. So they'll look to the other county or the Nebraska Planning and Zoning Association or somebody like some organization like that. So they tend to look similar, but there's not what I would call a standard. Counties are very aware of this. They hear about this from their constituents a lot. The two things that are pretty standard is, are this four foot and the posting of a bond or other security at 10 to 15 years after the project commences.

HUGHES: So an individual landowner, that, that could be negotiated.

DAVID LEVY: Sure. If a landowner had some particular requirement, they could negotiate that. And it brings up another point, you know, the placement of the roads, the placement of the turbine. It was suggested

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

that the wind companies can just go and put those wherever they want. They have a relationship with that community and that landowner, and, at least the companies I've worked with, try and work with landowners to put the roads and the turbines in places that are not significantly inconvenient for the landowner.

HUGHES: OK. Very good. Any additional questions? Senator Geist.

GEIST: I do have one more. I just, I just want to understand because obviously I don't. This is sort of a new thing to me, as far as the total decommissioning. When you, let's say you have a company that's going to decommission a wind farm. Who does that? Does the company have people that do that or do they hire local people to do that? How does that work?

DAVID LEVY: Typically, they would hire a contractor who had experience in doing that. And just like in the construction of a wind farm, those contractors typically hire local people wherever that's available, wherever those trades are available locally they'll try and do that. It's, it's better.

GEIST: So when, when a company comes in and builds a farm, and do they-- and they have a plan, I'm sure, upfront, what they think that would cost and that's how the bond is set.

DAVID LEVY: Right.

GEIST: So as you go through the years in this lasts longer, the bond gets the potential need-- cost of decommissioning that I assume would change from that period of time. So I'm just trying to understand how you know how much that's going to cost in a range over 20 years. Is it-- and you project all of that at the beginning of the, the project, correct?

DAVID LEVY: So at the time at the beginning of the project, before the project is constructed and operating, you enter into a decommissioning agreement with the local county. That decommissioning agreement has a decommissioning plan and a decommissioning cost estimate in it. Many of the counties then require the developer to come back and update that cost estimate every five years or something like that. So when they post that bond, it's an updated cost estimate, current as of that time. And then every five or so years after that, they come back and

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

check and make sure that the bond is, is consistent with that estimate.

GEIST: And so when you say it takes about \$13 million to decommission an entire 20-megawatt, that's, is that--

DAVID LEVY: Two hundred.

GEIST: Oh, I'm sorry.

DAVID LEVY: No.

GEIST: Two hundred. Is that just an average or, or is that what you've seen lately or--

DAVID LEVY: That's, that's kind of an average based on some decommissioning plants that I looked at. I would say it's a \$13 to \$15 million kind of range is what I saw. But those were also not all 200-megawatt projects. You know, everything is a little bit different but that's a decent estimate.

GEIST: Would that be something that we could see? Is there, are there decommissioning plans?

DAVID LEVY: Those, where those are public, certainly. I mean, not to say that you have to go get them from a county clerk. We can do that for you. But yeah, there's no reason not to get them to the committee where we can get them and they're already public documents.

GRAGERT: I appreciate that.

DAVID LEVY: OK, I'll do that.

HUGHES: OK. Any additional questions? Seeing none, thank you, Mr. Levy.

DAVID LEVY: All right, thank you all.

HUGHES: Next opponent. Sensing a theme here, of David coming to oppose.

DAVID BRACHT: We'll run out of Davids pretty soon, right? Thank you. Good afternoon, Chairman Hughes and members of the committee. My name is David Bracht. For the record, D-a-v-i-d, last name, B-r-a-c-h-t. I'm testifying today in opposition to LB700 on behalf of Invenergy, LLC, and NextEra Energy Resources, LLC, both of which have had wind

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

developments in Nebraska for five or more years. I've handed out some testimony, and much of that what has been covered in one fashion or another by Mr. Levy. So I might just hit a couple of high points, rather than burden you with hearing the same thing again. But you're welcome to read through that, and if you end up with any questions. The point that I would take from that is that decommissioning has been something that's been addressed for a long time, not only in the wind industry generally, but also within the state. First, and speaking broadly, in the dozen or so years that I've had an involvement of one type or another both on behalf of landowners and on behalf of developers, I can tell you, and not surprisingly, because most of who I was dealing with, with respect to the landowners, again, when they sometimes my clients sometimes who are considering lease agreements from my developer clients, are farmers. And they have a very deep tie to that land. I think many of the points that you made, Senator Gragert. And so decommissioning is probably the one topic that was most discussed in every single project that I can think of with that individual landowner. And so this is a topic that's been deeply discussed. And the Legislature has addressed it. That's part of the topic within my written testimony, is that if you look at the definitions in the sections, both those that were identified to be amended and then those within Chapter 70, those have existed, I know the one of them since 2009, a significant revision in 2010, and then again most recently in 2016. So this has been a topic that has been addressed. I'd also echo what Mr. Levy said, that if four feet isn't right, and that is something that I've commonly seen, and five is right, I am certain that both Invenergy and, and NextEra and the other companies that I've worked with within the wind industry would want to work with their landowners. It very much is a relationship business. And again, that decommissioning and that lease agreement is something that had been talked about. While it is exactly correct that the counties have sort of adopted those, some general plans, and there's some variations, and that's been done again with some assistance and education as well. That decommissioning plan is designed by an engineer, certainly not a bunch of lawyers, to take into account what those specifics are and what those needs are. With respect then, where I might say because of those discussions, that has been something that's been done with the agriculturists that are involved. I grew up on a farm and I can really also relate to that, that, that, that kind of discussion. And I have seen, while the lease agreements tend to be very similar, if not nearly identical, that's not to say there isn't some variation. There's one of lore that talking about the roads, identified that in the lease agreement had a specific provision that

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

said the road would not take out the purple lilac bushes. Actually, I think I have that one saved in a file that we had to be conscious of that. So I would say to you that the companies that I've been working with, they value that relationship. They understand the importance of what that land is to the landowner. And, and that it needs to fit the needs after. I would question as well, with respect, that, that whether it's necessary to remove that entire foundation, particularly for the uses that it's in. And in fact, in some instances, that operation could be very disruptive, and in fact might be worse. You know, the cure might be worse than the disease at that point. If you look at it that way. So with that, I would respectfully close my testimony and be happy to answer any questions.

HUGHES: Thank you, Mr. Bracht. Are there questions? Senator Gragert.

GRAGERT: Thank you, Senator Hughes, Chairman Hughes. On the contracting by different companies, because I understand, you know, these windmill farms can be passed from company to company. Could you just give me a-- I'm always concerned about the actual contract from company to company and the decommissioning and all that carrying forward, that the producer himself, he or she, you know, I don't-- do they use a lawyer every time they, you know, they transaction? I know they probably should.

DAVID BRACHT: So, I guess, if I understand your question, Senator Gragert, I think that, and correct me if I'm not getting it correctly, but that the concern might be is, is a developer starts a project and at some point, and this is certainly common within the industry because these are many, many millions and sometimes approaching a billion dollars. And so it's not unusual to have an initial development company that builds those early relationships and then later on a company that's really in the business of owning and operating and has the capital to do that. That transaction, however, it's the one good thing about having banks and lawyers involved, you can rest assured that that, so long as that first lease and the later purchases, purchasers of that wind project are always going to be concerned. Do we have a sound lease between the landowner and the project? And then once that it is in place, all of those obligations are going to end, it's going to be subject to what that, that lease is. And even though that transaction, that project may change ownership, and most often, frankly, the project itself doesn't change ownership, it might be some upper level organization. In other words, a company, a holding company might be sold. Those things are going to

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

go under significant level of legal review, none of which has to be done by the farmer because they're relying on that original lease agreement.

GRAGERT: OK.

DAVID BRACHT: Did that answer the question?

GRAGERT: Yeah. Because what I'm, what I would be concerned, or the yellow flag would go up, let me just put it that way, would be the caution flag would be, well, from one company and then we move to another company, and that company comes back when it's time to do something. Then said, well, no, that's not our, that's not our decommissioning plan. This is our decommission--

DAVID BRACHT: But remember, that's in that lease agreement. And the landowner would have had to have agreed to a change within that.

GRAGERT: OK, thanks.

HUGHES: Additional questions? Senator Moser.

MOSER: So I've-- have you seen very many wind farms disintegrate financially? I mean, go broke or go out of business or not be able to be resold because they turned out to be unprofitable?

DAVID BRACHT: So and Mr. Levy had suggested this as well, and some of you know that I, I actually have spent quite a little bit of time in the ethanol business. And that's certainly one where we've experienced in the state. That is a significant distinction between these two industries. And the answer to, the short answer your question, is no. And the reason is, is again, if you think about the way these projects are structured, they are really based on that 20 or 30-year power purchase agreement, where the wind project owner is getting all the financing that they're getting from the bank based on the fact that they have a contract with a credit-worthy utility that's going to continue to make those payments. And again, in a project that oftentimes can be \$500 million, \$600 million, \$700 million, there is a whole series of guarantees and everything that go with that. So my answer to you is it's almost inconceivable for me to see how, and, and I'm not aware of any in Nebraska, I'm not aware of any in Kansas, in Missouri, and South Dakota to the extent I've had contact with wind farms there. And I haven't done a lot of work in Iowa, but I'm not familiar there of ever having any wind project actually go broke. Now,

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

that could be sometimes where a wind project, particularly older ones, the technology has changed so much. Literally the cost on a "levelized" basis for a wind project today is, is 68 percent lower. It has reduced by 68 percent in the last 9 years.

MOSER: So it's 32 percent of the original?

DAVID BRACHT: It's 32 percent of what the cost. So if I would have built a wind farm nine years ago, I can build it for one-third of that cost today.

MOSER: So that makes some of those other farms not as competitive?

DAVID BRACHT: They're into those longer-term contracts, and so that you might see some repowering. That's why you're seeing the repairing that's going on, because there's still a bank out there wanting to make sure that they've done that. And those contracts were set up at that time and will continue to pay out. It's unlike, unlike the ethanol business, since I brought that up, that's where I got to buy corn, I got to sell ethanol, and those prices change every day.

MOSER: In the market.

DAVID BRACHT: In the market. That's not the case in the wind industry.

MOSER: So, this may not be a fair question, so you can answer it or not. But where's the money made in wind towers? Is it in the development up-- of it upfront or the operation of it or--

DAVID BRACHT: And I think there are-- so I don't know the answer to that, specifically, or in a way. But I would say this is that I think that what you see ultimately in the, the different kind of investors at different stages have kind of different interests. I think some of a development company that's just in the business development, they're hoping to be able to, to put together a package that's attractive--

MOSER: And flip it.

DAVID BRACHT: And be able to sell it to a development company. If it gets built, they're in the energy business. And, and like all utilities, they're in the business of producing power that is a margin that they can, and selling it at just a little bit above that for a long time. And, and enough to make their margin requirements.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

MOSER: Great, thank you.

HUGHES: Any additional questions? Seeing none, thank you. Oh, I'm sorry. Senator Geist.

GEIST: And just in listening to this, if, if wind farms are just repurposed and upgraded, is decommissioning something that you do, they do a lot?

DAVID BRACHT: So it depends. As Mr. Levy said, there's been one, that's the Kimball project here in Nebraska, which I believe was either the oldest or second-oldest wind farm. Essentially, it was fully decommissioned and then put up new towers. In other situations, and based only on articles I've read, it would be a description just as he had where, where the base and the tower is still good and they're just changing the nacelle. So I would say that in the Kimball project, from what I understand in speaking with the folks that were involved with that, they kind of decommissioned, took down the old towers and put up the new ones. I think there were seven towers in the original project and there's 12 in the, in the new project. And that's 30 megawatts or 2.5-megawatt turbines. They did that all at once because it's usually, you know, oftentimes \$100,000 to get a crane to go to your project, the mobilization fee. And so they did the decommissioning, same cranes to take down the old ones at the same time they built the new ones.

GEIST: But they weren't taking up any of the rebar.

DAVID BRACHT: Well, I'm sure, I'm sure that at least on some of the sites, unless the tower was put on the same, that they probably did some of that and then they would have followed whatever the agreement is. What's been typical has been the four-foot that I've seen.

GEIST: Okay. All right, thank you.

HUGHES: Any additional questions? Seeing none, thank you.

DAVID BRACHT: Thank you all.

HUGHES: Additional opponents?

JOHN HANSEN: Mr. Chairman, members of the Committee, for the record my name is John Hansen, J-o-h-n, Hansen, H-a-n-s-e-n. I am the president of Nebraska Farmers Union. I'm having a handout, I was short copies, but it is about the Kimball project. And so I thought it would be

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

helpful to the committee because it does get down to the specifics of how many turbines, those kinds of things. We had a presentation at our Nebraska wind and solar conference on this. You can Google that Web site, you can go to that presentation and do the PowerPoint. We may or may not have filmed it. If we filmed it, you can also get that. But as I remember that, it seemed like there was 97 percent of that project was repurposed. It was a very high percentage. And so we're now starting to get those kinds of firms that have more expertise in this kind of thing who go from site to site and then use local contractors. But they have a good level of expertise, have a place to go with the materials, and also have a secondary market, if there are secondary markets for the turbines themselves. There is, just like there is with used farm equipment, there are junkyards, there are places you can go to get used machines and parts and those kinds of things. So for somebody else that has, still has those kinds of machines, they would be interested in those parts yet. So there is that going on. And I must say that I've been doing this work for some time, and the landowners that we work with and that we represent are not shy about calling up and telling me what they think is wrong in the world and what we ought to be doing for them to fix. And I have yet to receive a call from a landowner who is unhappy with the four-foot depth. I think most of them realize that's a reasonable number. Some would like it deeper: five foot or six foot or whatever. But it's kind of a tradeoff between the viability of the project and what you can do. But I'm, I'm not aware of landowners that are unhappy with those provisions, that I know of at least. Goodness knows they call and, and discuss about everything else, but I've not gotten those calls. I've, I've had some experience myself in terms of cleaning up old farmsteads, and I used to own a Cat. And so we used to, when we ran across the farmstead that needed to be cleaned up, we did that work ourselves. And we usually tried to leave the top of the hole that we're putting stuff in as we're burying stuff about four feet. And the only problem we ever had is that the stray piece of equipment or something that worked its way to the surface. But the base of a wind turbine would not be working its way to the surface unless the top of the surface itself changed and you lost topsoil and you went from the top down. So the other issue relative to this bill that is of some concern, and I'm not, I don't have a clear opinion at this time, but that I do fear that it may have a retroactive aspect to it. And if that is the case, that is in my opinion a serious problem because that is the business of changing the rules of the game after you already started. And for those who are new to the committee, we have historically supported making sure that there are provisions in contracts and at the county

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

level and also efforts at the state level to make sure that decommissioning is, is done, is done properly, and is included in any kind of a development project. And with that, I'd be glad to answer any questions if I could.

HUGHES: Are there any questions? Senator Gragert.

GRAGERT: Thank you, Chairman Hughes. Thank you, John. The decommissioning and how many-- how many wind, wind have been decommissioned already in the state of Nebraska to know that four foot is enough or isn't enough? And I go to the individual that the pipelines went across his land, and he's seeing some right where the pipelines are when he plants his crops. You know, I'm familiar with different grasses that the grasses go down 5, 6 feet, the roots. So where did we come up with four feet?

JOHN HANSEN: I'm not sure. I-- it's certainly not, where in the game for me. But it's the number that's been out there for a long time it's kind of the number that, as we've talked about decommissioning standards, it's kind of been the accepted level. And as you kind of look at the base of a wind turbine as it goes out, of course, the farther you go down, you're, you're taking a lot more concrete and I'm assuming there's a lot more expense. But I don't have a clear answer about where we came up with 4 feet.

GRAGERT: OK, thank you.

HUGHES: Any other questions? Seeing none.

HALLORAN: Senator Hughes, if I may ask one.

HUGHES: Senator Halloran.

HALLORAN: Thank you, Chairman Hughes. All power industry is at the whim, whim of the market for power, whatever that might be from time to time. But wind energy is, is pretty dependent upon federal subsidies, correct?

JOHN HANSEN: They've certainly effectively utilized the, the, the incentives, the production tax credits that have been there in one iteration or another over time. Yes.

HALLORAN: Would that dramatically impact the viability of electrical or wind generation if those went away? For whatever reason, just to suggest that maybe that could happen. And if it did happen, what would

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

that do to this environment of de-- of the viability of these wind-generating farms?

JOHN HANSEN: The-- well, Senator, as far as everything that we already have under contract. And so the projects that are already built, they're already operating, they're already under contract, these are contracts for 20 years in most cases. All the ones I'm familiar with are 20-year contracts, so they already have a clear idea of what the revenue stream is going to be for the project. So to the extent that stuff is already in the ground, it's already operating, it's already under contract, that the future of production tax credits wouldn't impact that. But maybe five years ago I would have said, I think I argued publicly that, you know, the production tax credits were, were an important way to kind of level the playing field between this kind of energy and other kinds of competing energy. But as costs have come down for construction and some of the other competing energy costs have gone up, you know-- the true comparison, relative to energy costs and viability, to get to your question, is sort of what is the, what is the apples to apples, oranges to oranges costs between any particular kind of energy. New to new to new, versus old to old to old. And so I, you know, so we're, we're at the point now where new wind is competing with old coal and old other kinds of energy. On down the road, you know, depending on what those other sources do, I'm less, I'm less concerned about the production tax credit going away in terms of the viability of wind.

HALLORAN: So you're making an argument for new, for new wind generating fields that they don't need the federal tax credit.

JOHN HANSEN: Well, I'm-- that's the direction that we're headed, ready or not. That's where we're doing a five year phase down now. So we're doing a 20-percent-a-year phase down over a five-year period of the federal production tax credit. So that's the process that we're in now. And so, you know, as I read the literature, I read the industry publications, all of that stuff, that seems to be what they're preparing for is they're not assuming that the production tax credit is going to come back.

HALLORAN: OK, thank you.

HUGHES: Senator Moser.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

MOSER: Are the subsidies all front-loaded? I mean, you get a tax credit when you build it and then that's factored into the cost of the project moving forward. Or do they come in over time?

JOHN HANSEN: The federal Production Tax Credit is the credit that is at-- It's like the state incentive programs or other things. It's a contract, and so you're under contract for, you get in lieu of federal tax liability or the life of that. So you're, you're, you're locking in that rate over a period of time, as I understand it.

MOSER: So it's phased in over time?

JOHN HANSEN: Yeah.

MOSER: So even if they did away with the program they're still obligated to continue with what they contract says?

JOHN HANSEN: Sure. Just, just as the, the state incentive programs that we have. If, if we were to shut them off today, they have a very long tail as they say, because you have to fulfill that contract period. So it's a contractual arrangement, and so you have to fulfill your obligation and liability under those contracts.

MOSER: Thank you.

HUGHES: Senator Quick.

QUICK: Thank you, Chairman Hughes. And thank you, John. One of things, and it's probably off a little bit what Senator Halloran asked you, but I know over the years, especially with public power, they've been looking more at renewables because of EPA regulations. And I don't know if you know any of the EPA regulations, but it's been pushing more towards trying to bring more renewables in. I know the city of Grand Island went to-- they're almost 50 percent renewables. So I don't know if you know any of the EPA regulations and why we would probably have to look at renewables too.

JOHN HANSEN: Well, Senator, I think that there's-- some of the advantages of both wind and solar is that there's virtually no regulatory additional costs to consider in the future. Where they're, they're not about to impose any kind of a regulatory standard on those energies. There's not water use regulations that will ever impact them. So from that side of the equation, you, you, you're getting a product that's, you know, an energy source that's not going to be incurring additional costs. And of course anybody who's been in the

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

energy business over time knows that SOX, Knox, all those different kinds of regulations that you're more familiar with are out there and that they're-- and they're there for a reason, because they're, they are emissions that need to be dealt with. And so the big elephant in the room that hasn't been dealt with so far, but would certainly change the whole kind of the economics of certainly coal energy, would be some sort of carbon obligation or responsibility. And so, you know, that continues to get talked about. It doesn't get done in part-- in my opinion, it doesn't get done because not only is their lobby very strong, but the costs would be very substantial to existing energy. But, but at the end of the day, consumers support renewable energy. And if you can lock in 20 years' worth of clean energy without regulatory future exposure at 2 cents or thereabouts, which is at or below what you can do with your fossil fuel-based energy fleet, that's pretty attractive, because you've taken a lot of the risk out of the market and you've locked in the stuff that doesn't have any additional costs. And now, yeah, wind and solar both are both forms of energy for which Nebraskans get economic benefit, unlike coal. We do not own coal but we do have wind.

HUGHES: Any other questions? Seeing none, next opponent.

JOHN HANSEN: Thank you, Mr. Chairman.

HUGHES: Next opponent. Seeing none, neutral testimony?

CHRIS DIBBERN: Chairman Hughes, members of the committee, my name is Chris Dibbern, C-h-r-i-s D-i-b-b-e-r-n, and I'm the general counsel with the Nebraska Municipal Power Pool and MEAN. And I'm also a registered lobbyist for our organization. So MEAN is the-- I just want to answer some of the questions that we, we had today. MEAN is neutral on the bill. There's a lot of good things about the bill, but there are some questions that we had too. John Hansen and I talked about and I will bury my lead. The question about is it retroactive? Are there 800 sites in the state that have to do this work or is it going forward? That would be a big question for us. And also the question of who owns, operates, and manages. That's a lot of people that are in, in the contracts. And I'll explain to you in a little bit why I'm concerned about that. So that, those are the two questions I had about the bill. MEAN used to own the first small wind farm in Nebraska. We called it our wind garden, because it was seven megawatt-- it was a seven turbines, 10.5 megawatts out in Kimball. And Kimball County and the city of Kimball and our landowners were the best people to work with that we possibly could have asked for. They were very, very

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

helpful to us as, as when we first went out there 17 years ago, and also to the new relationship that we have with the new farm. Aspenall Energies, LLC, is the owner now and they're are private wind farm that gets the production tax credits. It's 30 megawatts, so we feel like we've tripled our wind out there for MEAN. We're very pleased about that. The transmission lines only go three miles into the city of Kimball, and they connect up with WAPA, Western Area Power Administration. They are buried, the transmission lines. These new 12 units are GE 2.5 wind turbines, and this is where I hope to answer some of your questions. We did have to remove the turbines. Ours were smaller, ours were a different size, ours were a different platform. And one of the things we learned in our old contract, 17 years ago, we had bring it down to ground level and the new company that we signed the PPA with, the production power agreement, said, oh, ground level is not industry standard. That's not a good practice. You need to take, we need to take-- they need to take it down four feet. So I thought that was terrific of the company to say, just because you wrote it 17 years ago and said ground level, that's not the right industry standard practice today. So in our PPA we asked them to decommission our farm, so I don't have a price for you. It's wrapped up in our price of, of a 20-year contract. We had a 20-year lease with those existing landowners and we had a renewal of one term, another 20 years. They used our same footprint and they expanded it. Their turbines are bigger, they needed a little bit more space. They went to the neighbors' property too. So they were on our footprint. They did not use our platforms. They did not use our equipment. They used a company called in NGC, a Lincoln-based company, that helped decommission it. And Sandhills Energy was the wind developer. And Aspenall Energy is the new company, and we were the older company. That's why I was concerned about who owns, manages, operates, controls. There, there are a lot of players in this picture. But we also had, it is my understanding that it was decommissioned October of 2017. It took some time for them to sell the metal, the steel, the blades, the operation units themselves. And some of them are still on the land but they have been sold. So they're waiting for winter to end before they can move them off. So we do have some turbines that are out there, but they have all been sold. They've all been the, the-- the steel is going to be recycled and the equipment is going to be moved. So that's MEAN's story, and I'd be happy to answer any questions. And that's why we're neutral.

HUGHES: Thank you very much. Are there questions? Senator Geist.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

GEIST: There must be at a significant cost difference between taking the platform from ground to four feet. Could you speak a little bit to that?

CHRIS DIBBERN: You know, they're--

GEIST: It's all wrapped up in the price?

CHRIS DIBBERN: It was all wrapped up in price.

GEIST: OK.

CHRIS DIBBERN: And there are lots of confidentiality agreements in wind contracts. It's very, very competitive. So but I do not know the price. So I can honestly tell you I can't not tell you. I just don't know it.

GEIST: OK.

CHRIS DIBBERN: And that, that there are confidentiality agreements in these agreements. However, from ground level to four feet, that's what they said they needed to do. That was industry standard. That does leave concrete that still may be underneath there. There are different kinds of platforms, there are different kinds of, of other ways that they attached them.

GEIST: OK. Thank you.

CHRIS DIBBERN: Thank you.

HUGHES: Any additional questions? Seeing none, thank you for your testimony.

CHRIS DIBBERN: Thank you.

HUGHES: Any additional neutral testifiers? Seeing none, Senator Bostelman your opportunity to close. We do have several letters. As proponents: Ben Stallings; Mary Ruth Stegman; Marjorie Shreve; Dennis Hamm; Dennis Schmid-- Dan Schmid, excuse me; Carol Windrum; Paul Statz; Stu Luttich, Luttrich [PHONETIC], Luttich; Tim Fickenscher; and Mary Bamesberger; Michael O'Hara. Two opponents: Jeff Clark and Lucas Nelsen. Senator Bostelman.

BOSTELMAN: Thank you, Mr. Chairman. I'm gonna take off the rose-colored glasses, now, what we just heard. Obviously, I've got

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

lots of notes. First off, decommissioning. In the, the Texas study that you have on page 133, talked about [INAUDIBLE] may cost on decommissioning turbines. The most expensive one is \$140,000. So I would like Mr. Levy to provide an engineering-sealed plan that states \$13 million decommissioning costs that he stated on the record. He stated otherwise to what I found on-line that it's \$150,000 to decommission a turbine, plus you have salvage value coming out of that. So I guess there's a question as to how much it really costs to decommission, which would be good to get taken care of. So the other thing I'd like to talk to you about is: we just don't need to change anything because nothing needs to be changed because everything's just fine and hunky-dory. We know as we sit here in this body, we change laws every day while we're in session. We look at things that's outdated, that need to be improved, that need to be updated. And there's concerns that come up that we need to have addressed and corrected. Out of Oklahoma Oil and Gas, Natural Resources and Energy Journal, Volume 2, Number 6, I want to read something out that says, out of it. It says: Rather than using the traditional steel tower, this turbine tower is comprised mainly of concrete. Using concrete in turbine towers significantly reduces the amount of steel needed to construct the turbine. Furthermore, the concrete has a longer life, useful life, and is much easier to transport. This new turbine built in Iowa weighs over 1,200 tons. This is 2.5 million pounds of material that would have, would have to be removed for just one turbine. The concrete turbines manage to decrease the installation costs, as materials are cheaper and last longer. But with the increased weight, the turbines will cost more to decommission will have a lower scrap value. And what we're talking about here is what's been happening in the past. We have new technology, new and new things are coming out and we need to change our laws to address the issues that we found. I think one key question, or one question I think Senator Gragert asked is, how many people decommission turbines? How many landowners have? I don't remember the answer but maybe a handful, if that. So how does any landowner know that what they have in that contract right now is what they should have? They don't. That hasn't been done. They don't know what that issue will be in 5 years, 10 years, 20 years down the line. So my one question I have to you is, and it's not a question you're going to answer. It's a question I'm going to put in your head, is how many of you know what a wind turbine is and how it's built? And how many of you would know how to decommission that thing? So if you're a landowner and someone comes up says, I want to put a wind turbine on your property. And, oh, by the way, here's the engineer, here's the documents, here's a lawyer, here's what you need to sign,

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

because this is what you need to do. How do you know that what they're telling you is what you actually need? The engineering study that's done is done by the wind company, not by your engineer. You don't know whether that's appropriate or not. Every-- my ground on my land, there's different soil tops, types all across the land. So how do we know that if there's 100 turbines built, but the first turbine, the soils and that, is one standard or one type, and the last half is completely different type and we need to construct those things and have a different basin in all those areas? So what they said is we have one contractor for everybody and live with it. That's not right. So what I've asked in this is a pretty, I feel, pretty simple opportunity for us to correct something in statute that needs to be addressed not only here in Nebraska but nationwide. We need to remove that concrete component out of the ground. Let's talk about county zoning. A little bit about county zoning. How many of you, if you're sitting as county commissioner today, and maybe some of you were, would know, if someone come up with a contract to know what that contract said and if was actual, exactly in the best interests of the other people of the county? You have the contracts. You read them, you tell me what engineer is going to come to you and tell you this is what's needed, this is what's not. You're going to take the advice of the wind company that comes in, tells you this is what you need to do. And, oh, by way, you've got a contract with them. That's common. That happens all the time in this state. You've heard that before from other individuals. Again, I'm just-- I'm not saying that we don't build them. I'm saying we need to remove the concrete out of the ground. The amount of sheer, a bonding-- Oklahoma requires bonding in five years, and then surety of penalties, \$1,500 a day thereafter. If we want to talk about finances, if we want to talk about those type of things, fine, let's do that. Let's change the bonding requirements, let's change the financial needs to make sure we protect those landowners that have these contracts. Because if you look in your contracts, they can, if they de-- if they stop operating today, some of them have 12, some have 18 months before they even have to come back and think about decommissioning that thing. Is that right? Maybe we need to change that. So we have a hodgepodge of contracts, hodgepodge of zoning, hodgepodge of, of addressing these issues across the state. I'm not saying that we're going to do a state zoning. That's not what I want. I'm just getting at we need to make sure we decommission these the same as any other power generation facility in the state would. Again, typically, \$150,000 is the most, if they'll say, to decommission. Then they're going to get salvage value back. So it doesn't cost that much. Remember, we're talking about billions of

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

dollars that they're looking to get from Nebraska Advantage. They're making \$80,000-plus a year profit after everything's taken out, \$1.45 or more million dollars in the life of that wind turbine. They typically build it and then they turn around and sell. And it lasts for a few years and they'll sell it again to another company so it keeps changing hands. So the money in there is about decommissioned-- is about tax credits, accelerated depreciation. That's where the money is made on these things: \$285,000 a year is what they make on selling the generation off of those. Leases are not, it will state that leases are agreed upon at 40 years and you can exit the contract. That's wrong. Read those contracts. The only person that connects those contracts is the wind company. The landowner has no rights. And in fact, that's a violation of state law. You cannot go more than 25 years. So every contract out there in the state of Nebraska right now is in violation of state statutes. I think landowners out there need to, need to have a say in that, and that needs to be changed. Who owns these facilities? If we don't know who owns these facilities, we're in trouble. I don't understand that comment. Typically who owns, who are the companies? They're LLCs, and they're LLCs out of the state of Nebraska. They're not here. Who builds these facilities? These facilities are built by trained labor crews that come in from out of state. They're used to building these things. They come in and they build them, they construct them. It's not five feet outside of the turbine is all the ground there is. They have access with vehicles, they have to get their maintenance vehicles on there. There's a crane pad on there. So it's a large site, and they're not right next to the road, they're all the way back into the section. So on average, you know, I think that three acres is pretty good. They're making their money off the PTCs, PTCs and the tax subsidies. On the coal-fired plants, I think Senator Quick talked about, I think Nebraska meets or exceeds every EPA standard in the state right now. That's not an issue. We have to have baseload generation in order to turn on our lights. I've said that before. What 40 percent of the day do you want electricity? What 40 percent of the day do you want your lights? What 40 percent of the day do you want heat? Do you want electricity, if you're electric? Have to have baseload generation. We've had, if we're going to go down that path of inexpensive energy for the state, we've had that because of coal and nuclear. That's why we have cheap electricity, that's why we've had it for years and years, not because of wind. So that kind of gets off on a tangent a little bit out of the subject. Turbines cannot be built without coal. Period. That's a fact. They have to have that in order to be built. I'd also ask that you go on-line and Google Michael Shellenberger and Bill Gates, who recently

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

commented last month on wind energy and batteries. They said that-- I don't, I'll paraphrase, I don't want to quote them, but basically their comment was is that we cannot survive on this. If we think that we're going to be 100 percent renewables. The sun doesn't shine, the wind doesn't blow all the day, every day. China is building coal-fired plants by the day, by the month. And they're not clean like here in the U.S. If we want to make a difference in correcting climate change, we need to go to those countries and help them reduce their carbon output, output. We're doing a great job here in the, in the US on production energy. So go out and see what Bill Gates says, he was in Japan at the time. And he says: if there is a typhoon, which they just had, it 2 gigawatt, 22 gigawatts of electricity they needed or whatever. What battery is there that's going to provide that for, for, for the city of, I think it was Tokyo, or wherever he was at. Not going to happen. So again, I'm off on a tangent. We'll get back on course. Tax revenues, sometimes we talk about-- this will be the last thing I talk, and I appreciate that the committee sticking with me and listening. In 2000, this comes up often, and I want to make sure I set the record straight because it's been before this committee as well.

In 2017, Nebraska collected \$3.5 million in tax revenues from wind energy. That's a 2017 nameplate capacity tax. Actual reported is \$3,000-- \$3.65 million and there's about \$500,000 from, from farm, from income from the farmers off that. However, in 2017, Nebraska paid out and approved refunds to wind projects: \$6 million . That's the Nebraska Advantage Act. Thus, the tax revenue went in the negative \$2.5 million related to wind, wind energy generation. That is, in 2017 there was a tax loss of \$2.5 million related to wind energy operations in Nebraska. In 2016, Nebraska collected \$3 million in tax revenues from wind energy. That's 2016 nameplate capacity tax actual reported was \$2,000-- \$2,649,229 and estimated landowner lease payments of, of income tax about \$400,000. However, in 2016, Nebraska paid out an approved refund to the wind project \$5.8 million. Thus, the tax revenue went in the negative \$2.8 million relate, related to wind energy generation. That is in 2016 there was a tax loss of \$2.8 million related to wind energy operations in Nebraska. So on back-to-back years a total net loss for tax revenues approximately \$5.3 million. We talk about \$2.5 to \$3 billion dollars stated investment in the state of Nebraska. It's not actually investment going into Nebraska companies and labors. This investment is a capital and construction costs of all wind-generation facilities, with the purchase of materials construction labor going to out-of-state companies in Iowa, Minnesota, Colorado, not Nebraska companies. So the dollars stated being \$2.5 to \$3 billion is not investment in real

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

Nebraska companies or materials. Again, I did not start this off and did not want this to be about subsidies or what's raised or not. But since we're gonna have people come in and talk about things I don't think are accurate, I want it, I want it on the record of things I feel are accurate and need to be talked about. Again, I'm talking about that concrete pad that needs to be removed out of the ground on that wind turbine when they decommission it. That's what the bill is about. That's what I'm asking you to do, is to approve this bill, pass this bill out onto General, onto General File. Thank you, Mr. Chairman.

HUGHES: Thank you, Senator Bostelman. Are there questions? Senator Geist.

GEIST: Thank you for bringing this and kind of calling this to our attention. But do you know, is any of this type of decommissioning that you're proposing taking place anywhere else?

BOSTELMAN: No. But that doesn't mean that we shouldn't be doing it, environmentally and otherwise. Because basically, as what the previous testifiers say-- and I would like to thank all the testifiers for coming in today. I do appreciate it, everybody that comes in. The supporters and opponents and the neutral. But what you heard from them saying is we're the ones, the wind companies, we're the ones, we're the ones that come in and write the decommissioning. And then you hear the wind company say, oh, it costs us too much money to dig that out. So how are you going to write that contract? You're going to write that contract that's cost you the least amount of money on the decommissioning. Right? That's my take. So unless people understand that that whole base needs to come out, what that means, and that they can do it. I'm not even sure that they're, that they're aware they can even do that because they're not told that. Because they're given a contract, and you see the contracts. This is what's in it, there's your options. That's what they know. That's all they know. So it's something I think we need to start here in Nebraska, so that it's something that, that's recognized and is done elsewhere as well.

HUGHES: Senator Moser.

MOSER: Did somebody bring this idea to you, or is this your own idea? Or how do you

BOSTELMAN: No, I think it's, you know, just looking at how things are done in the power generation world. You know, when we're talking about

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

generating electricity and we're seeing three, now we're seeing 3,000 individual power generation facilities built across the state. And I know that those don't come out of the ground, that that's something we need-- and everybody else, when they decommission, they take everything out of the ground.

MOSER: But there wasn't an entity that came to you and said, hey, we should be doing this?

BOSTELMAN: No.

MOSER: And then your tax flow analysis there, did that include the property tax on the wind towers or are you just looking at income taxes versus subsidies?

BOSTELMAN: On which one?

MOSER: Well, you were saying that Nebraska had a net loss of \$28 million or \$2.8 million. I don't remember exactly what you said. It's been a long day, and my absorption rate is declining here as we go along.

BOSTELMAN: Sure. This is, this is the tax that Nebraska collected.

MOSER: Nebraska?

BOSTELMAN: Nebraska.

MOSER: Or the counties?

BOSTELMAN: This is Nebraska. This is state of Nebraska. Because we, we've been told in the committee before there's \$17 million is what we get annually in property tax from wind turbines in the state of Nebraska, on what we get-- what we collect through production from the, the nameplate, nameplate compact, tax, capacity tax, which is what they pay in lieu of property tax. The wind companies do. And then the farmer, the landowner themselves, they pay as well, OK? So it's that tax, that money there that they pay in.

MOSER: So that is factoring in the in lieu of property tax?

BOSTELMAN: Right.

Transcript Prepared by Clerk of the Legislature Transcribers Office
Natural Resources Committee March 6, 2019

HUGHES: OK. Any additional questions? Seeing none, thank you, Senator Bostelman. That will close our hearing today on LB700, and we're [RECORDER MALFUNCTION].