

*Oklahoma Innovations* Radio Show

Air Date: November 28 & 29, 2009

Guests: **Robert Wegner**, secretary of energy; **Brad Williams**, deputy secretary of energy

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From the OCAST Radio Network, this is *Oklahoma Innovations*, a weekly science and technology radio magazine brought to you as a service of OCAST, the Oklahoma Center for the Advancement of Science and Technology. OCAST is the state's only agency whose sole focus is technology, its development, transfer, and commercialization. OCAST mission is to identify and fund promising research in technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of the state's most gifted and talented scientists, inventors, entrepreneurs, manufacturers, and business leaders who all have one common goal, developing technology-based economic growth for all Oklahomans. Now here are your hosts, Gary Owen and Steve Paris.

>> **Gary:** Welcome to this edition of *Oklahoma Innovations*, Gary Owen along with.

>> **Steve:** Steve Paris.

>> **Gary:** And we are delighted first of all to mention that this is the first weekend with our Tulsa affiliate to be on Sunday mornings. And so those of you that are listening to News Talk KRNG, we welcome you if you're a new listener and if you are a listener that's been following our program the last 14 years, we welcome you to our new time slot. And of course thank you to all of our other affiliates who carry this show. And we are excited Steve because we're going to be talking about energy and a conference coming up in December and what great guests to have this weekend.

>> **Steve:** That's exactly right Gary. You know we have the secretary of energy for the state of Oklahoma in the studio with us today. And we also have the deputy secretary of energy. I'm talking of course about Robert Wegner who's the secretary and Brad Williams, the deputy secretary. And we need to know a little bit more about these gentlemen.

>> **Gary:** We do.

>> **Steve:** They, Robert serves on the governor's cabinet, has so far about a year I believe. And has just gotten back from a conference we're going to hear a little bit more about and some things that are going on in Washington DC that involve Oklahoma. And involve the entire nation. But before we do that, I'm going to ask Robert to give us a little bit of history just in case there's somebody out there who hasn't heard who you are and what you've been doing for the last year.

>> **Robert:** Well it's my pleasure to be here, which was with everybody today and I have been serving Oklahoma for the last almost 5 years. I worked for four years with the previous secretary of energy, David Fleischaker as his deputy. And the governor, I was pleased that the governor had the confidence to appoint me secretary about a year ago now.

>> **Steve:** Outstanding and you've been a busy man I know.

>> **Robert:** Very busy.

>> **Steve:** And how long has Brad been with you?

>> **Robert:** Brad's been with us since March.

>> **Steve:** Ok. Brad, let's hear about you. Where's home for you originally?

>> **Brad:** Well, home for me originally is Edmond, Oklahoma. I grew up in Edmond and then attending University of Oklahoma undergrad and then graduated from Law School there in 2003. And after law school, I've been practicing New Orleans Gas Law here in Oklahoma City until Bobby presented me with this great opportunity and I jumped all over it and it's been great.

>> **Steve:** Outstanding. Well, we know energy is a subject in Oklahoma that everybody knows at least a little bit about. And most people know a lot about it. And so we want to hear about where Oklahoma stands in the field of energy. And we want to talk about your conference coming up. Let's kind of take care of that right now because that is so important and we'll mention it again before the end of the program. But you've got a conference coming up December 2nd and 3rd of this year. It's going to be held at the Cox Convention Center in Oklahoma City. Robert, tell us a little bit about the conference, what you hope to accomplish and how people can sign up for it.

>> **Robert:** Well, people can sign up, let's just start right there.

>> **Steve:** Ok.

>> **Robert:** Please can sign up by going to [www.okwindrevolution.com](http://www.okwindrevolution.com). And find full information on the conference as well as registration information. We're very excited about this. This is our second annual wind conference. And our objective is to have a sharing of ideas, to present some information to Oklahomans and to learn from Oklahomans about the developments in the wind industry across our state. And we have a lot of potential for significant positive economic impact in the state as we develop wind but we have to make sure we do it in a responsible way. We have to make sure that we integrate it with other energy resources. And our idea at the conference is to share ideas so that we have effective planning for the way we precede in the future.

>> **Steve:** Very good, now you mentioned the web, the [www.ok.wind](http://www.ok.wind), whatever, [windrevolution.com](http://windrevolution.com). There's also a phone number you can call. I want to give you that real quick. That's 1-800-203-5494, 1-800-203-5494. We'll give this information out again before the show is over. So those of you who are interested in attending and we recommend that you do so. If you're interested in wind energy at all, or the future of this state, you need to attend this. There's a little cost involved, it's a 75 dollar fee. However, if you're a student with a valid ID, you get to come free, right?

>> **Robert:** That's right.

>> **Steve:** You bet. Well we're looking out for our students because we want to develop students who enter this field and decide to stay here in Oklahoma and apply the trade here. Let's talk a little bit more about the conference. You've got some guests coming in, you've got some focuses that you've touched on, but let's talk just a little bit about, you mentioned a little bit before we started a while ago that there's somebody from Texas that's going to be talking about what they've done and the project they're working on, you don't know a whole lot about it you said, but you know a little bit about it. And so I want to tease our listeners out in Wichita Falls, Texas to listen to this part.

>> **Robert:** Absolutely. We've got a company coming in called Own Energy.

>> **Steve:** Own Energy.

>> **Robert:** Own Energy, and they're going to participate on a panel on small and community wind projects. These are little, these are projects that are a bit different than the traditional huge wind developments that we're all used to seeing. And what they do is they come in and they produce wind at a slightly smaller scale with a local community partner. So they find a land owner and who partners with them and has an equity interest in the project. And develop a smaller scale wind generation project. They're first project that they completed was right near Wichita Falls, Texas and currently they're working on a project in the Northern part of Oklahoma. They'll be here with us this year to talk about that project.

>> **Steve:** You know OCAST has a little history in wind energy from that small vantage point that you're talking about and I notice you have him on the program, Mike Bergey, president of Bergey Windpower down there at Norman. We funded them through OCAST many years ago. But one time and my information is probably a little bit, at one time, they were selling their wind generators, their smaller wind generators to more than 60 countries around the world. Most of them third world countries. And their specialty was to sell to communities that were outside a grid any where and that helped them to drill for water and it helped them to keep in communication, regular communication with their national capitals, things of that nature, things that we don't even think about in the United States. We have all that taken care of for us. So they have a unique niche there. But this is going to be two days worth of jam packed information. I see that you also have James Woolsey, former CIA director from Oklahoma who's going to be there also.

>> **Robert:** Absolutely, you know one of the things we have to remember is when we're focusing on energy issues, we really are focusing on national security issues. And that's the reason that we have to be so careful about the choices that we make and so careful about the way we diversify our portfolio. And Mister Woolsey, of course former director of the CIA, will be here to talk about incorporating renewable energy and natural gas and the importance of national security that developing that strategy has for our country. We're very happy that he's going to give his time and come back and share his thoughts.

>> **Gary:** Now you've got a couple of events that I want to talk about during this conference. One that caught my eye is Keeping it Green and it has to do with not only the environment but talking about protecting wildlife species. Talk about that a minute.

>> **Robert:** Well, that's an absolutely critical issue in Oklahoma as well as all across this country. And what we have to remember is that whether you're a wildlife conservationist or not, you have to recognize that protecting our natural wildlife habitat is critical to continuing development of this industry. In Oklahoma, this issue primarily affects us in the panhandle of the state where we have a significant lesser prairie chicken population. What we also have in the panhandle is an unmatched wind resource. A wind resource that no part of this country can compete with, but it's going to require electric transmission in order for us to tap that wind resource and move it to population centers. What we have to do is make sure that we understand how to develop transmission in a way that's responsible and does not have adverse impact on our wildlife habitat here in Oklahoma.

>> **Steve:** Now you're talking a little bit about the law of unintended consequences. We put up these wind farms for all the right reasons and then we find out that some of these birds fly into them and create some problems as far as the wildlife population is concerned.

>> **Robert:** Well, that certainly has been the case. The primary issue that we face in Oklahoma is that the prairie chicken feels that tall structures are predatory. So it is less of an issue with the turbines, but really an issue focused on transmission.

>> **Steve:** Drives them away.

>> **Robert:** It drives them away. And so, but there are things we can do. And for the last year our electric utilities across the state as well as our energy environment groups and our wildlife groups, state and federal, have been working together very closely to try to figure out what we can do to help address this problem. We've already seen now a significant voluntary contribution from OG&E directed towards wildlife mitigation and we're working to develop further actions that we can take together in the future that don't adversely impact economic development but at the same time provide the responsible wildlife protection that we need.

>> **Steve:** Very good. Brad, get up close to the microphone there, we didn't mean to leave you out.

>> **Brad:** No, that's, it's been a great discussion so far.

>> **Steve:** Well exactly and I know you bring a lot to the table or you wouldn't be here. Let's talk a little bit about your role with the, as the deputy secretary of energy and how that impacts what we're talking about today.

>> **Brad:** Well primarily I've been focused on the logistics of getting this conference together, talking to people, all around the state and the nation, trying to get the word out how important this issue is. And as you can see from our agenda, we've got people from not just Oklahoma, but all over the country taking their time to come and explain just how important this state could be in developing wind energy resources, not just for the citizens of Oklahoma, but for the entire region.

>> **Steve:** Exactly. And I know when you talk about wind energy, the last, I don't know how many years now since we've really had wind energy harnessed here in Oklahoma, it seems like it hasn't been that long, but I'll bet you it's been more years than I remember. But it's, everyone's interested in it. I hear people, regardless of whether it's on the Eastern side of the state or the West, they're thinking in terms of how can we develop this tremendous asset? And anyone who's driven through Western Oklahoma and looked at those, we call them wind farms, maybe that term is changing or not, but they're some what intimidating when you first see them. And you know I'm reminded of the movie you know about visitors from Mars, things like that, those look like the giant creatures coming over the horizon over there. But it is a fantastic sight and its progress. And I know a lot of the land owners are interested in how can we you know lease our property to these wind developers and make some money on it. And I'll bet that's a subject you all get to deal, do you not?

>> **Brad:** Absolutely. There's going to be a panel discussion focused on just that. We're going to have land owners from Oklahoma that are going to be here to talk about what their experience has been as far as wind farm developments on their property and on neighboring properties. And it's not just going to be Oklahomans but we're going to have someone from Wyoming who's part of a land owner association. And that kind of organization is gaining some momentum out there. There's some pretty large organizations in Wyoming and Nebraska and Kansas where land owners are kind of banding together and sharing their stories and information and they're doing

that so they can be more informed when they are faced with a potential wind farm development on their property.

>> **Gary:** Do I see a forming of land owner association here that is in this industry?

>> **Steve:** It's probably already here.

>> **Brad:** Yeah, they're already here, there's some out there in the counties in Western Oklahoma and I don't know what all, which ever county.

>> **Gary:** Sure.

>> **Brad:** That has one, but we've talked to a few people and they are starting on a county wide basis.

>> **Steve:** And let me point out, the area you just described, Wyoming, you mentioned Nebraska and maybe Kansas, I've forgotten all the other states. You're talking about the Great Plain predominantly, the lee side of the Great Rocky Mountains where we have a lot of wind and it's the Bread Basket of the world.

>> **Brad:** That's right.

>> **Robert:** That's exactly right and Brad highlights I think one of the most important issues on the, on the panels at the conference and that is this land owner issue. And it's absolutely critical that land owners have enough education and we share our knowledge so that we make the best deals for Oklahomans.

>> **Gary:** Got a lot more to cover with secretary of energy Robert Wegner and deputy secretary of energy Brad Williams when we return on *Oklahoma Innovations*.

[ Music ]

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>> **Gary:** Thank you for joining us on this edition of *Oklahoma Innovations*. Gary Owen and Steve Paris with you. I want to tell you about a conference we've been talking about called the Oklahoma Wind Energy Conference, going to be held December 2nd and 3rd in downtown Oklahoma City at the Cox Convention Center. Nationally known experts are going to discuss wind energy economics, wind's compliment to Oklahoma's natural gas industry, we've touched

a little bit on transmission and distribution and another topic we're going to talk about later in the program and that is the balance with environmental and wildlife issues and other energy industries in our state. Steve?

>> **Steve:** That's exactly right Gary. And you know when you talk about wind energy, you're talking about an energy that's developed right here, either in Oklahoma or here in the United States. And you know we have issues as you always do in a developing infrastructure and transmission lines, things of that nature. We're going to get those worked out and that's just a matter of time and a matter of dedication. And you know while every citizen in this state benefits to some level from wind, wind energy production, farmers and ranchers, land owners, they have a whole different issue as it relates to using wind energy and developing the infrastructure for that. And Brad you, you've had some experience in that area. It's kind of like dealing with oil and gas, is it not?

>> **Brad:** Absolutely Steve, it's just like it actually. Just like mineral owners have benefited in the state for the last 100 years from oil and gas development on their property, through bonuses and royalties on production, people that have a good wind resource on their property will also benefit in those same economic terms. Generally if there's a wind farm that's going to be developed on the property, the land owner is paid a bonus just like they would be paid a bonus for an oil and gas lease. And then to the extent that a wind farm is developed on their property and electricity is sold onto the grid, they also benefit from a royalty based on the kilowatt hours that are sold from their wind farm.

>> **Steve:** Been a big issue in western Oklahoma and certain parts of the state, not every area, but there's a lot of land out there that, that you know has multiple uses but sometimes those uses aren't that productive from a making a living standpoint. And if you have land that is conducive to wind generation, then this gives you a whole new lease on life from an economic standpoint, does it not.

>> **Brad:** Absolutely and that's one of the very important things that the secretary and I go out and talk to people about and that is you know the heritage industry in our state has been agriculture.

>> **Steve:** Exactly.

>> **Brad:** And right now our agricultural producers are hurting. Whether they're farming or ranching. And the wind opportunity on their property could really make a big impact on their bottom line helping those farms and ranches to survive.

>> **Steve:** Exactly. We had a report when we were talking about water not too long ago on just a very recent show, and one of the things that came up are projections about the population of western Oklahoma. I'll be the first to tell you, I don't know that I personally buy into this or not, but I've heard some projections that the population is expected to decline in many parts of western Oklahoma over the next 50 years. Now this subject came up in reference to water, the availability of water and the, you know the distribution of water. But this might turn some of that around. This might be one of those economic benefits that helps keep western Oklahoma a good place to live, it's a great place to live, but a place where people thrive and where the economy is really bolstered by the fact that we have all this generation going on.

>> **Brad:** That's exactly right, it very well could and if you look at the statistics from the National Renewable Energy Laboratory, they estimate that with every thousand megawatts of

wind generated electricity, we could create up to 1800 jobs and the bottom line economic impact could be in the hundreds of millions, closing in on a billion dollars for each new 1000 megawatts that we bring home.

>> **Steve:** And this is energy that's developed in Oklahoma? Not overseas, not in places where they don't like us very much. And so that makes us less dependent, although not much, not much oil gets converted to electricity or to production. Most of it is like home heating oil, things like that. But it's still, yeah, anything we do here in the United States to lessen our dependency on foreign oil is a safety issue, is a Homeland Security issue, is it not?

>> **Brad:** Absolutely and even though there may not be a one to one correlation as far as wind and a reduction in consumption of oil, it is related and I know we'll touch on a little bit later in our discussion but to the extent that we can find diversified uses for natural gas.

>> **Steve:** Right.

>> **Brad:** And I know we'll talk about natural gas being a base load and being a good partner for wind, but to the extent that we can find increased uses for natural gas and transportation.

>> **Steve:** Sure.

>> **Brad:** With compressed natural gas vehicles, we will be lessening our dependency on foreign oil.

>> **Steve:** I'm going to ask Robert an unfair question because we didn't clear this, we didn't talk about this earlier, but I sense we need a little bit of history. Oklahoma's experience in developing energy, can you kind of give us kind of a real, you know high flight overview of when we got started and what we were producing and what we're doing now.

>> **Robert:** Absolutely, that's a great thing to cover. We're doing very well in Oklahoma. We've seen all across this country in the last 10 years, the production of wind has exploded. It's been the same here as it has been across the United States. Right now Oklahoma is 11th of the 50 US states in production for wind. But it's really the future where we see us moving up that chart to the top. And in fact the Department of Energy projected Oklahoma could be as high as 2nd, the 2nd largest producer of wind in the country behind only Texas within the next 10 years, 10 to 15 years for sure. But the key is going to be, there are several keys, certainly transmission will be one of those keys. But it's important as we develop, as we think about moving from 11th to 2nd, that we take the time to have this discussion together and share ideas and share experiences so that we don't develop too quickly.

>> **Steve:** Get ahead of ourselves.

>> **Robert:** Exactly, get ahead of ourselves. And I want to touch back on some things Brad was saying on the land owner panel and some things you brought up. Our state's, one of our state's leading experts, Professor Shannon Ferrell from Oklahoma State University, will be at this conference to lay out detailed description of all of the issues that are critical for land owners to consider as they contemplate wind development. Another thing I want to touch on that you raised was water use. Water as we all know is the real resource of the future that we're going to be fighting over. And we know that we use more water to produce electricity in this country than we do to produce agriculture, which is absolutely shocking to me. We also know that wind is a Sea borough Water Use electric generation source.

>> **Steve:** Fascinating.

>> **Gary:** That's wild. I'll tell you we are visiting with Secretary of Energy Robert Wegner and Brad Williams, Deputy Secretary of Energy. More to come when we return on your science radio magazine, *Oklahoma Innovations*.

[ Music ]

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>> **Gary:** It's called Revolution, the Oklahoma Wind Energy Conference is going to be held December 2nd and 3rd in downtown Oklahoma City at the Cox Convention Center. If you're interested in registering or would like more information, the website is [www.okwindrevolution.com](http://www.okwindrevolution.com). That's [okwindrevolution.com](http://okwindrevolution.com). There's also an 800 number you can call if you'd like to get more information or register, 800-203-5494, that's 800-203-5494. Talking about that conference is secretary of energy Robert Wegner, one of our guests and deputy secretary of energy Brad Williams. Steve?

>> **Steve:** Thank you Gary and before we went to the break, we were talking about Shannon Ferrell. He is assistant professor of agricultural economics at Oklahoma State University and this is just an invitation. All the land owners out there, whether you're from eastern Oklahoma or western Oklahoma, it doesn't matter, wherever you are in the state, if you have an interest in

knowing how wind energy impacts land ownership, you need to come hear Shannon, right Robert?

>> **Robert:** That's absolutely, that's absolutely right. I think Shannon and everyone would universally agree is one of our brightest intellects in this area in the state as well as unmatched ethics. And I think Shannon will no doubt pull no punches and be as honest and helpful as he can be.

>> **Steve:** Exactly. That's in state, that's experts we have here in Oklahoma. You guys just came back from Washington DC and you learned some things up there about energy that the rest of us probably should know a little bit about. Robert, get us started along those lines.

>> **Robert:** Well we just had a great visit in Washington and we worked on several things. We worked on biofuels, we worked on transmission for wind energy and other electric sources, but what we really did was have some focus discussions on natural gas and what the views in Washington are evolving to on natural gas. And that as we all know is critical to our state, our economy really is driven by gas and it's a completely relevant issue to this conference because as we develop energy, any energy resource, but particularly as we develop wind, we have to understand how that connects to natural gas. And we're very pleased to learn in Washington that representatives, congressmen, senators, especially those from nonproducing states who don't have a long history based with energy issues are beginning to understand the real true attributes of natural gas. The fact that it's 50% cleaner to use natural gas.

>> **Steve:** Oh yeah.

>> **Robert:** Than to burn coal. The fact that it's 25% cleaner to burn natural gas as a transportation fuel than gasoline. So we're, we have some great leadership in our congressional delegation at DC. We were pleased by their updates and updates from others that the message is starting to get out.

>> **Gary:** And Oklahoma has got such an abundance of natural gas.

>> **Robert:** That's exactly right, not only do we have it here in Oklahoma but all across this country. We have at least a 100 year supply of natural gas and we have a real important opportunity in this country right now to decide how we're going to utilize that resource. And if we do it the right way, then every American will benefit by the increased use of natural gas particularly in the power generation sector. We're going to see great expansions in the transportation fuel sector. I think we're all in Oklahoma familiar with that. But a real opportunity for this country and for Oklahoma is to increase the use of natural gas in the power generation sector and for us we're very lucky because wind and natural gas could potentially be great partners.

>> **Gary:** That's true.

>> **Steve:** You know one of the things we've avoided talking about is how you know sometimes this may be heresy but we're talking about how cheap natural gas is. The proper word is inexpensive. It's very inexpensive right now, much to our chagrin here in Oklahoma. And it would really improve if it became more of mainstay of our fuel supply and an expanded use for a fuel supply regardless of what use that would be. It would benefit this state economically.

>> **Robert:** That's absolutely right. You know we have three options for base load electricity in the United States. Those are coal, natural gas and nuclear power and there is just no doubt that

natural gas is the cleanest and the most appropriate use of base load electric generation power in Oklahoma as well as several other states across the country. Any state that can gain access to it, it ought to be their focus for base load electric generation. But here's the key and you touched on it which is that as we increase demand, we'll likely increase price.

>> **Steve:** Exactly.

>> **Robert:** And so what we have to do in order to protect our consumers is make sure that we have appropriate responsible hedges in place to potential price volatility and wind is an opportunity to be one of those great hedges.

>> **Steve:** A good augmentation for natural gas. As you were mentioning the three ways we generate electricity, the predominate ways, it brought to mind you know one of Barry Switzer's comments about passing the football, you know you already have running teams, and one of his comments was that three things happen when you pass the football and two of them are bad. That's kind of the way, but you know we don't want to knock the coal industry, we don't want to knock you know nuclear energy, but right now nuclear energy is not a big part of our history here in Oklahoma. And coal is something we have to bring in from Wyoming because our coal has a lot of sulfur in it and so natural gas just seems to be the answer.

>> **Robert:** Well, I completely agree with you. I think it just makes sense. I think it's important just like in this country we're focused on domestic solutions to our energy crisis. We have to do the same thing on a state by state basis. And there's just no doubt that Oklahoma can capture competitive advantage for its companies, for its individuals and for its state by utilizing natural gas in a responsible manner. And as you say, the characteristics just make sense. It's clean, it's domestic, it's abundant, it's underutilized. As natural gas advocates, we don't have to compete against coal or nuclear. We just tell the facts about our own fuel product and it'll rise to the top.

>> **Steve:** Yeah. Let's talk just a minute about Oklahomans, the citizens of Oklahoma accepting wind energy and what their thoughts are about it. What I understand, pretty accepting of this concept.

>> **Robert:** Absolutely, there's a recent survey that was conducted that's going to be released on December the 3rd at our conference, on Thursday at lunch. We will have this survey released. And it's really interesting. The full details will be at the conference, but what we see is that Oklahomans, by a somewhat overwhelming number say that their two favorite, their two preferences for electric generation are going to be wind and natural gas.

>> **Steve:** And I'm right there with them. That just makes sense for us. And you know give us a little bit, a few more of the details of that report if you can. I think you were quoted in the release that went out, were you not?

>> **Robert:** Yes I was. And what we, more specifically the report says that Oklahomans are willing to pay a premium for wind energy. It also tells us Oklahomans recognize that as we develop alternative energy, particularly wind in this state, we're going to need to make a statewide investment in transmission infrastructure.

>> **Steve:** Oh yeah. The big issue.

>> **Robert:** The big issue.

>> **Steve:** You can generate all the electricity you want out in western Oklahoma, if you can't get it somewhere, it's not much good to you.

>> **Robert:** That's exactly right. And we've got to be able to move this renewable power to population centers all across the country. And transmission is how we do that. And as we all know, the key with transmission is not a debate over whether it's a good or a bad thing. I mean some people would debate that, but most people agree it's important. Not just for renewable energy but for reliable energy as well. But the key issue is who's going to pay for it.

>> **Gary:** Yeah exactly, because that's going to be an expensive venture.

>> **Robert:** Exactly, it's going to be a very expensive venture but we are leading the way in Oklahoma at this effort and we're doing that through regional planning efforts, at a regional transmission organization called The Southwest Power Pool. And one I think the most significant developments for transmission in history in the United States has just occurred. And that is that several states in our region have come together and agreed on a way to share the cost of transmission.

>> **Gary:** Wow, outstanding.

>> **Robert:** And I think that very soon we're going to see some significant developments across the Oklahoma, Kansas, Texas panhandle region.

>> **Gary:** Some great partnerships there it sounds like.

>> **Robert:** We really do.

>> **Steve:** We all know that when you start a new technology, that's the most expensive time. And once you get it ramped up, once there's acceptance, once you have your infrastructure built and people, the end user has been maximized or optimized, then the cost kind of tends to go down from the standpoint of the unit cost, things of that nature. And so we're, we citizens probably should expect to pay a little more for wind energy at first. And then down the road a major part of our, of our whole grid are the sources of energy, so I'm sure that's part of that acceptance thing is that you know we're concerned about energy so therefore we're willing to do things to make it better for the future.

>> **Robert:** I think that's exactly right.

>> **Gary:** Now you've got another session on your agenda, Getting Plugged In, Educating and Training Oklahoma's Wind Energy Workforce. Talk about that.

>> **Robert:** Well, it again it's one of these things that I think we're all familiar with and that is that none of these developments will happen without an educated and interested workforce. And as we see emerging industries and emerging opportunities to diversify our energy portfolio, we simply can't forget our workforce. Because if they're not here, the industries won't move. It's something that is not unfamiliar to us. We faced the same challenges in the oil and natural gas industry where we really had to struggle to make sure we inject enough youth into those industries to keep them going long term into the future. Well, it's very similar as we develop wind. These are new jobs that we've never had before that are analogous to existing jobs, but they're not exactly the same. So it's important that we have a dialogue at the conference so that everybody can understand and plan together for how we develop this workforce in the future.

>> **Gary:** Couple of panelists that are noted here, Terry Sampson who is with Composites Manufacturing, lead instructor for the Tulsa Technology Center in Tulsa obviously and Shea Ferrell who is instruction dean at the Tulsa Technology Center and also Macomb Fowler who is with Francis Tuttle in Oklahoma City on that panel. So that'll be interesting. Guys, we've got a

break coming up here in just a moment. Want to give a plug once again to the website if you're interested in attending the Revolution Oklahoma Wind Energy Conference December 2nd and 3rd. The website is [www.okwindrevolution.com](http://www.okwindrevolution.com). That's [okwindrevolution.com](http://okwindrevolution.com). And they also have an 800 number you can call, 203-5494, that's 800-203-5494. Talking about this conference, our secretary of energy Robert Wegner and deputy secretary of energy Brad Williams and we have another segment gentlemen to talk about because gosh we could go on and on and on about this.

>> **Steve:** Yeah.

>> **Gary:** This is a fun topic, energy I think is interesting to all Oklahomans and we know how important it is to our economic growth for the future. So some exciting stuff. Back in a moment on *Oklahoma Innovations*.

[ Music ]

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[ Music ]

>> **Gary:** Thank you for joining us on this week's edition of *Oklahoma Innovations*. This week we are honored to have our secretary of energy for the state of Oklahoma, Robert Wegner and deputy secretary of energy, Brad Williams with us. And we're talking about Revolution, the Oklahoma Wind Energy Conference going to be held in Oklahoma City at the Cox Convention Center December 2nd and 3rd. Nationally known experts going to discuss wind energy economics and the wind's complement to Oklahoma's natural gas industry, transmission and distribution and the balance with environmental and wildlife issues and also going to talk about the economic development opportunities for land owners and developer prospect and also developers from their prospective. I can't talk.

>> **Steve:** Ok. Well, you're going to talk about the Federal, I'll let you talk about that.

>> **Gary:** Yeah.

>> **Steve:** I knew I was going to get to do that.

>> **Gary:** This is interesting, you'll want to listen to this.

>> **Steve:** This is important and we need to give them a chance to talk about this. We have somebody coming from the Federal Energy Regulatory Commission, some, it's not often that we get a person of this magnitude coming to Oklahoma.

>> **Gary:** In fact, this is a first isn't it?

>> **Robert:** I believe that's right.

>> **Steve:** Talk about it Robert.

>> **Robert:** Well, as we've talked about, one of the key issues to unlocking our wind resource across this country and in Oklahoma is transmission. And at the end of the day, interstate transmission issues are regulated by the FERC, by the Federal Energy Regulatory Commission. And in the last year, we've seen a significant amount of discussion and debate across this country about the role of the Federal government.

>> **Steve:** Right.

>> **Robert:** The role of regional planners and the role of state governments in planning for transmission, both citing and cost. Certainly, that's something that is Oklahoma as a state, we want to make sure that we understand and we want to make sure that we're comfortable with the role that regional and federal governments are going to play. We are so pleased that Mark Spitzer, a commissioner of the FERC will be coming to Oklahoma to present at this conference on Thursday December the 3rd and to our knowledge, it's the first time that a FERC commissioner has given their time to come to Oklahoma to talk about this issue.

>> **Steve:** Obviously the federal government is concerned not only with Oklahoma but with the entire nation, but and I guess actually our interests go beyond our nation's borders because we kind of wind up being sometimes the, well what, we try to help take care of the whole world from the stand point of making sure people have a good quality of life. But Mister Spitzer with the Federal Energy Regulatory Commission as you said out of Washington DC. What's he going to tell us?

>> **Robert:** Well, we're about to find out.

>> **Steve:** Ok.

>> **Robert:** What he's going to talk to us about though is he's going to talk about the role of the federal government in developing transmission lines. And there's a lot of debate about that and there are some people on the FERC who think that they ought to jump in and be pretty aggressive.

>> **Steve:** Ok, we keep hearing of course about you know the federal government spend too much money on this and on that and everything. You know that's a constant disagreement among different parties. But I take it that when you're thinking in terms of building an infrastructure or building transmission facilities, this is going to be paid for probably maybe from private sector or you think the government's going to get involved in this?

>> **Robert:** Well, rate payers are going to pay for transmission.

>> **Steve:** There you go.

>> **Robert:** There we go. All of us across Oklahoma are the ones that are going to be paying for this.

>> **Steve:** As it should be.

>> **Robert:** Well, as it should be as long as we develop lines that benefit all of us. And so that's the real key is making sure the lines that we choose to build are lines that provide benefit across the board. And I think that's what we'll hear from this FERC commissioner. I think what he'll say is you know I really think that it's important in citing and paying for these lines that the state make the decision.

>> **Steve:** Right.

>> **Robert:** But we want you to know that we think this is important and we want to encourage to come to some consensus on how those decisions are going to be made so that we can stay out of it.

>> **Steve:** Right. And we all know the federal government has had a big role to play in many years past through and for electrification and things of that nature. But that was back when we didn't have a developed population. That was back when you know you were, in the beginnings of developing the infrastructure when it's the most expensive. It's different now. We have a populated nation and so there are people out there like those of us around this table and those who are listening, those rate payers as you call them and it's up to us to pay for it. It's up to us to take care of ourselves at this point.

>> **Robert:** That's absolutely right. And one of the things that's exciting is we haven't seen any major investment in transmission in this country in 30 years.

>> **Steve:** Yeah.

>> **Robert:** So as we make investments in transmission over the next 5 and 10 years, we'll be doing that not just to support renewable electricity but also to support reliable electricity. And we have to remember that if we can further develop the use of natural gas in power generation as we talked about earlier today that this increased transmission infrastructure through our investment will also provide a vehicle to move our natural gas to addition markets.

>> **Steve:** There you go.

>> **Gary:** Now based on everything that you've talked about on this program and I'm sure this is going to be part of the discussion at your conference, are we looking at this as, Steve and I always look 5, 10 years down the road. Oklahoma being a major hub for wind power?

>> **Robert:** Well, there's just no doubt about it. I think that that is what we're looking at if we do it right. As I say, Oklahoma could be the second largest producer of wind in the country. And I think we will be a major hub.

>> **Steve:** Wow. So all that electricity that's going to be on the former wheat and living stock production lane out in western Oklahoma, that's going to be going all over the country is it not?

>> **Robert:** I think that's right. I mean we'll see some, it will depend on certain federal developments. But one thing that we continually hear from the federal government is this discussion about a renewable electricity standard.

>> **Steve:** This is just kind of a human interest thing, maybe it is to me and not everybody else, but I, about a year ago I flew to San Diego. And I saw at least, keep in mind much of that flight was over desert or arid land. I saw at least five wind energy facilities. I'm talking about large numbers of wind generators sitting on those canyon, you know over the, on those mesas right at

the edge of the cliff. And it became apparent to me that you know we've kind of built this infrastructure while I wasn't watching. And I'll bet that's happened to a lot of Americans as we watch this system develop.

>> **Robert:** Absolutely. As I say, we're 11th in Oklahoma and we know that there aren't 10 states that are windier than it is here. So what that points out is there is a lot of wind development across the country that we haven't seen.

>> **Gary:** And it, wind power in Oklahoma ramped up relatively recently. I mean it hasn't been not an over night deal.

>> **Steve:** What is it, six year? Seven years? Is that roughly it?

>> **Robert:** Well at the most, I mean over the last 5 or 6, 7 years we've seen a significant expansion just to get where we are now. And we're seeing even more significant expansion plan for the future. But again, a key that we have to remember as we develop wind is that as much as we wouldn't believe this in Oklahoma, it doesn't blow all the time. So we have to remember that other sources have to come in like gas and like demand management to make sure that the lights stay on for all of us.

>> **Gary:** Well I, you know I was going to bring that up earlier just as an average listener out here going well what happens if the turbines stop?

>> **Robert:** If the turbines stop, the power stops, exactly. That's why natural gas is so important.

>> **Gary:** Yeah.

>> **Robert:** What we know is that coal plants and nuclear plans are not good backup for wind. When the turbines stop, if all you have to rely on is coal and nuclear, you're in trouble. So that's why we say gas and wind could potentially be good partners because you need to have a natural gas plant running and that way when the turbine stops, the power stays on because of your gas plant.

>> **Steve:** Talk with us just a little bit about, I mean, Oklahoma Natural Gas, Oklahoma Gas and Electric. In Tulsa, you have a public service company of Oklahoma. I know a lot of western farmers, I know I've left a bunch out because there's a lot of generating facilities around the state. But how do they play into all this? They're major players are they not?

>> **Robert:** Well, they are the major players. They're the market for the wind power. So if they expand, wind industry will expand. If they don't, it won't. But what we see is all the players that you just mentioned have a significant commitment, have made a significant commitment to the development of wind. I think it'll be less than a year we'll see PSO for example out of Tulsa have to 10% of their portfolio coming from wind.

>> **Steve:** Wow, 10%?

>> **Robert:** I think that's right. Western Farmers is already there.

>> **Steve:** I didn't know that. Of course now Western Farmers is located in western Oklahoma obviously and that's where most of the wind generation is occurring, at least right now.

>> **Robert:** That's exactly right.

>> **Steve:** So, they're right there with it aren't they?

>> **Robert:** They're leading the way.

>> **Steve:** Wow, this has been a fantastic story and I know we've just touched the surface because as, in your positions at the Department of Energy and secretary of energy and deputy secretary, you've, you're involved in all of it. You get involved in oil production which we don't do that much in Oklahoma anymore. Natural gas production which we have tremendous potential there. And wind energy and all the other sources of energy, whether it be you know from switch grass or whatever and you all kind of provide kind of a broad umbrella of support for all those industries, do you not? In a regulatory sense.

>> **Robert:** Well we do and that's, I think that Brad would agree, that's the most fun part about our job. I mean energy is king in Oklahoma. It drives our economy and what we have to do is we have to make sure that as we make decisions, we put all the pieces together and we look at the big picture.

>> **Gary:** Well I want to mention that we're going to broadcast from this conference and so sometime in December I would assume probably going to air that program. And we're going to have some of the panelists and the guest speakers interviewed on the program. Give us a little more insight to the future of Oklahoma in energy and particularly wind. This has been fascinating. Secretary Wegner and Deputy Secretary Williams, any final comments? We've got about a minute left. Anything you'd like to throw out here that maybe we have left off the table?

>> **Robert:** Just to say that we appreciate everybody's interest and we look forward to seeing you all at the conference on December 2nd and 3rd.

>> **Gary:** And.

>> **Brad:** We appreciate you having here today as well.

>> **Gary:** Well, dynamite. Steve?

>> **Steve:** Very briefly, Governor Henry has, you guys, you gentlemen work with, he's known as the education governor but he's also known as the first governor to I think to really put some emphasis on alternative sources of energy of which that's what we're talking about today. So it's a new direction for Oklahoma is it not?

>> **Robert:** It really is. As we say, energy is king and the more sources of energy and energy economy we can generate in Oklahoma as long as we keep strong what's carried us for 100 years the brighter our future will be.

>> **Gary:** Once again, the website [okwindrevolution.com](http://okwindrevolution.com), 800-920-35494 is the toll free number if you want to get more information or register. It's been a great show gentlemen. Steve, we'll see you next week.

>> **Steve:** Ok Gary.

>> **Gary:** On *Oklahoma Innovations*. Have a good week.

[ Music ]

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