

WIND POWERING AMERICA PROGRAM UPDATE

September 21, 2011

Coordinator: Welcome and I'd like to thank you all for holding and inform you that your lines are in a listen-only during today's conference until the Question and Answer session. At that time to ask your question you'll press Star 1 on your touchtone phone.

Today's call is being recorded if you have any objections you may disconnect.

I'd now like to turn over Ian Baring-Gould. Sir you may begin.

Ian Baring-Gould: Great thank you (Ed). Welcome everybody to another WPA webinar. This one that we're focusing primarily on the activities of the Wind Powering America DOE's program over the last year with looking ahead a little bit to what happened - what's going to happen over the next year.

But first off as everybody knows most people who know that Michele DesAutels left us about a month ago to take a position at the Department of Interior and we were very sad to see her go and her leadership. But it's a pleasure that I get to announce that Jonathan Bartlett has been given the assignment to take over as the National Director of the Wind Powering America program. Jonathan has worked the DOE program for a number of years and has actually spent a couple of years working upstairs for Steve Chalk and the senior management at the Department of Energy, Energy Efficiency and Renewable Energy.

So it's a pleasure to let everybody know that he has joined the team and Jonathan I'd like to introduce you and if you have a couple of words for the team out here that would be great.

Jonathan Bartlett: Thank you very much Ian. This is Jonathan Bartlett. Looking through the list of attendees I know a number of you and I'm familiar with a number of the other people listed. I'm very happy to be back within the Wind and Water Power program.

As Ian mentioned during my I guess closing on three years within EERE I spent the first year within Wind and Water as the Budget Lead and then was elected to chair of what EERE called the Assistant Management Board and it was for people who haven't been within EERE for very long to contribute ideas to either making operational improvements to EERE and also moving the overarching mission of increasing renewable energy, technology progress and deployment and energy efficiency.

And it was a very good experience. I was there for what five, six months and then spent an additional period of several months working in the communications and outreach office for EERE. I am as many of you are probably feeling the same way very disappointed that Michele left us but I know that she'll still be indirectly involved in many ways which is great. However, I am very, very happy to try to do my best to fill the large shoes that she has left. And I'm looking forward to working with all of you.

So with that I'll hand it back over to Ian.

Ian Baring-Gould: Great thanks Jonathan. Also I wanted to acknowledge that Russell Raymond from Energetics has also left the WPA team. He supported Michele from the Washington office and he has actually went off Tunisia to follow some other life experiences so we're going to miss him.

But Chris Fry has stepped in as well to support Jonathan and the team in the DC office working with the Wind and Water program. So I'd like to welcome Chris Fry as well to the team.

And the lastly to thank Brian Connors from DOE who shepherded the little ship in between Michele's departure and Jonathan's startup of the program. So thanks Brian as well for your support.

So without further ado I want to jump into the presentations today really talking about the different parts of the Wind Powering America DOE stapled their engagement activities. We're going to have three presentations myself talking about the name Wind Powering America activities, Charles Newcomb who's going to talk about Wind for Schools and then Suzanne Tegen who is going to discuss the work that we've done in the modeling and benefit assessment area.

As our Operator said in the beginning we're going to do questions at the end. As we typically do we're going to do live questions again this time. And so when you have a question kind of once we announce that you press Star 1 on your phone and the Operator will come and then lead you into the session where you can announce the questions verbally.

If you would like to do your questions by typing them in you kind of think of them halfway through event, you can still go up and hit the Q&A tab at the top of your screen and type in your questions and we will get them here and so we'll kind of go back between verbal questions and if anybody does a written question we can do that.

So without further ado (Sue) why don't you pull up my slides and the beginning of my slides and we'll head into the presentation. Great, thank you (Sue).

So we're going to quickly go through kind of a summary of the activities that we have done over the last year with the slight look ahead to what we expect for the coming year. So just as an update for folks in 2010 led by Michele we did kind of a complete look over the WPA program with the idea to really develop a mission and really try to redirect and understand where Wind Powering America is going. For the first ten years under Larry Flower and Phil Dougherty we - the program spent a lot of time really focused on state activities and that was a very successful activity.

But going into the new decade and having past 40 gigawatts of installed capacity there was certainly an understanding that the same methodology wouldn't necessarily work going forward and so we needed to rethink that.

And so Michele spent a fair amount of time in developing a new strategy for WPA with the mission to really educate, engage and enable critical stakeholders in the wind space to really impact the US electrical supply with the objectives that we see in the bullet point down there, provide the accurate and needed information so that people can make good decisions based on knowledge not based on scare tactics and things of that nature.

To build and support a really diverse partner network because if wind power is going to get the 20% of the nation's electrical supply, it's going to be done not by DOE doing things but by a broad network of organizations all moving in the same direction.

And then lastly continually evaluate the effectiveness of the program to ensure that the taxpayer dollars that all of you supply to the department to work in this area are being used in the most efficient way possible. And so that was the goal that Michele or the strategy that Michele outlined for us and we continue to pursue those activities.

And so just to remind everybody kind of where we sit this is 2010 end of 2010 at just over 40 gigawatts the vision of the 20% report which is just one vision certainly it's not going to come out this way but tells us what the math might look like in 20 or 2030 when we have 20% of electricity.

But I think this map here demonstrates that there are certainly areas where there's a long way to go. The Red states reflect the - the Red, Yellow and Green states reflect the previous WPA high, medium and low priority states. And the numbers that we see there represent where the states are, each of the specific states are in relation to where they should be if we were following the 20% track.

And so the states like South Dakota have only installed 43% of the expected generation, wind generation that the 20% indicated that by 2010 we would expect to see in the state of South Dakota given the assumptions that were used in the 20% report.

And I think what this slide helps clearly demonstrate is that there are issues out there that are keeping states from moving forwards in the deployment of wind technology. DOE is working on a bunch of them siting issues, environmental issues, radar issues but we can certainly say some of them fall into the issues of permitting, social acceptance and the types of activities that Wind Powering America has historically addressed.

And so we're certainly very happy with the success that we've had over the ten years but a map like this just makes us all think that we have a lot more work to do going forwards which is terrifying and exciting at the same time. But the Wind Powering America activities are really determined to address these. And so we're working in a number of areas. I apologize for the bullets on these slides. I think we all know that it'll work sometimes and clearly it's not working now.

Charles who's going to look or talk more about the Wind for Schools program so I won't address it more than just these indications here that we're working with the five new states, working with AWEA to move the historical six states that had Wind for Schools programs over the outside planting resources working closely with Larry Flowers at AWEA to expand the number of states using the affiliates program to - that they use their own funding, continuing to focus on improving a K through 12 outreach education and then conducting the Wind for School Summit that we do every year.

In relation to water workforce development activities we released the latest draft of the Wind Workforce Spring Work that you can see there on the right, that really talks about how we or some of the steps that we can take to expand the workforce infrastructure to be able to supply the jobs needs of a 20% scenario.

And so working with AWEA and other partners that provides that document that is now available for draft. And then continuing to work for the implementation of something like the American Academy of Wind Energy a takeoff on the European Academy but working with universities and different governmental sectors to move that forwards.

And from an engagement standpoint the stuff in Blue are kind of the titles of things that we said we would move forwards with over the last year. And so to a degree this is reporting on the successes and failures of those activities. Certainly the monthly webinar series we have 80 about 87 people on today's webinar and that has continued. So we've done 12 in the last year mentioned below but all of these as well as a bunch of other webinars are also loaded on the WPA Web site so that people can go back and use them at some time in the future if they aren't able to make it.

Newsletters that we provide every other week. So far we have done 25 and we'll continue to do those activities or we're at about 4,500 people that received those newsletters and a lot of people indicate that they provide significant value and so we'll continue to do that.

Julie Jones our Web (Adminstris) has been working diligently to complete a revamp of the Web Page and you see that over there on your right. We've seen some changes already. A new Search function which is very helpful in looking up documents that might be on the Web site but we're also seeing a lot more of that coming over the next year with continued redevelopment of that Web site. Again following the goal of Wind Powering America to provide information in the fastest way possible.

And then lastly the shift away from print communications to more Web based products which give us a lot more flexibility as a much lower environmental impact than printing out a bunch of flyers. And then also it saves your taxpayer money by getting the resources out there at the least cost possible.

And some of the examples of this is the new development of the Wind Working Group Wiki. About seven years ago we produced a handbook for Wind Working Groups how to formulate them and things that they should be

aware of. We've moved that to an electronic form so that people in the fields can update it with their experiences and we don't have another document but it's basically obsolete as soon as the copy paper is dry. And so looking at that.

Twelve radio interview broadcasts that are again available online after they were done over the air. Other webinars that we've done are available, the success stories. And then moving to more of these postcard products that you can see here on the lower right that provide links to the work on the Web site that allows us to keep the Web site current with information that yet have something that we can hand out to people so they can easily access the information that's available. All of these postcards for people's reference are available for download and self printing.

So if you are going to or hosting an event the cards we have a small supply of cards if you need them but it's probably easier just to print them off locally and make those available to people if you would like. And we have a whole series of those and we'll continue to produce more of them as more documents become available that we want to highlight.

And certainly one of the main issues that we were hoping to do over this last year is really expand the outreach and engagement and outreach activities to kind of leverage all of the work that's happening across the nation in wind. There was the plan for a funding opportunity for regional entities that the department was planning on doing but unfortunately the funding reductions from the continued resolution that passed in March did not allow us to go forward so we weren't able to that.

But we continue to work with the state wind working groups and the finalizing the three year priority state activities and the medium priority activities that were funded through the Department of Energy Gold and Field

office. And so finishing up those work including the publication or the development of summary reports for the different states. Currently we have no specific plans to provide further funding to state organizations again following the DOE and direction of trying to focus more regionally and putting our focus there.

We conducted a bunch of regional meetings to capture feedback from the state and regions. Seven meetings took place and I'll talk a little bit more about that. And then also the All State Summit with over 100 people attending and then a fun twist to that. That was the first time that we did electronically understanding that there are a lot of people who wouldn't have the ability to travel to California for the Summit so allowing people to be able to participate electronically. And we had almost 80 people do that. And so that's certainly something that we'll continue to do in the out years.

We had a number of changes over the last year really trying to work at developing the framework for which Wind Powering America operates developing a number of multi-year plans and engagement concepts that we have done and clearly some of it has not been able to be achieved as an example of really trying to look at the measurements of success and the assessment strategy for the Web and the electronic format that we do. I've done a lot of work in the economic analysis area and Suzanne will talk later about that so I won't really spend some time at this point.

We also expanded technology in or expanded worked in other areas with a large effort in the small and distributed wind. And Charles Newcomb joining our team as well as the continued support from Trudy Forsyth and Jennifer States from PNNL to support the small and distributed wind area has been a great help. And so that was another thing, another success.

We've only continued to work in baby steps in regards to the offshore program but expect that that will go forwards as well into this next year and expand.

In regards to the Native American organizations that activities are being transferred over to DOE's Travel Energy program which is fabulous. It allows us to integrate more closely with the work that they are doing. But as part of this we've developed - put a lot of the data that was collected by the Anemometer Loan program on the Web and we'll continue to do that as well as develop paper on the challenges of that organization that we hope to release publicly or print publicly in the next couple of months.

And then as we talked about almost a year ago a stronger focus on off ramping of activities that can be supported by outside stakeholders. And we continue to move in this direction though it is causing hardship we understand and are continuing to try to move in that direction because we understand that's the way we need to go but also trying to work with organizations that are suffering this hardship so that we can do it in a controlled and clean manner.

This map shows again the high priority, high, medium and low priority states but then stars represent the different stakeholder meetings that we had across the country. And so the lighter Blue ones are kind of the regional discussion meetings we had, the WPA Summit out in California. And then two kind of regional topical discussions. One co-supported by the Great Lakes Wind Collaborative in Chicago. And then the second one done by NEWEEP in Massachusetts looking at social acceptance issues.

So two other programs that were supported by DOE to really engage in the social acceptance and permitting issues.

And what came out of a lot of these meetings was a good understanding of the activities that are impacting the deployment of wind technologies across the United States and I bring them here in order based on the surveys that we did as part of these regional meetings of public acceptance, the lack of state markets motivating expanded wind development, the concept that the RPS is in many of the states are to a large degree played out and that combined with the turndown in the economy means there is a kind of (glut) of power in the markets so being able to get GPA's and things of that nature is difficult.

The limited transmission that all of us know would be the complexity with planning permitting ordinances and the development processes bears to the community and distributed wind space that are keeping smaller projects from being implemented.

Clearly the funding for stakeholder engagement activities the states industry everybody is feeling a pinch of the recession. And so being able to have the resources to counter what seems to be a fairly well organized but informal organiza - or network of organizations that are providing missed and this information about wind technologies is a struggle that everybody seems to be facing. And integration issues and then permitting and accessing the federal lands.

So these were the kind of large barriers that were identified as part of the meetings that we held across the country and certainly going into the next year we hope to spend more time addressing these types of issues. And so the plans for the upcoming year will be to take the feedback from all the regional meetings and state reports and then produce a national summary of wind deployment so that we all kind of have a framework to go forwards.

We are still planning to support more regional discussions and topical sessions to help promote dialogue or the key stakeholders that we have. The development of expanded information and outreach to key national challenges as I've just talked about and then continuing to work through the IEA Task 20, 28 social acceptance of wind energy to really gain and understand that national experience. A lot of the work on key challenges like sound and infrasound and property values are happening both here but also internationally.

And so being able to gain that international experience is really helpful as we work in addressing those issues.

I put this up because I always think it's better to address a question head on than wait for the questions to come. What we see here is funding levels for both the Energy Efficiency and Renewable Energy Department at DOE as well as the Wind and Water program. And what we can certainly see here is that the funding levels that we see in Congress as should be no surprise are basically flat. And so the - this is going to cause pressure on all programs within the wind and water portfolio especially given the recent focus and I think the needed focus on offshore wind technologies.

And so really kind of how this will play out in regards to funding letter - funding levels for the current activities is very premature. And so we can't say other than knowing that as we can all guess given the current climate in Washington and the current condition of the economy the - we're not seeing huge amounts of money to fund loss of activities and I certainly think that that's worth keeping in mind as we go forwards.

So what we do know is that we'll continue to do in the monthly webinar series. We know that offshore and environmental impacts are coming up over the next two months so certainly encourage people to link into those.

The E-Newsletter has over 4,500 participants and we certainly hope to double that over the next year. We're going to continue to use the Web site and providing information through that. And then expanding the electronic communication products so more fax sheets. Hosting ours and any other webinar materials that people have so certainly if you are planning webinars that you think cover material that would have a national impact certainly let us know and we'll try to capture that information and make it useable to wider audiences.

Providing more information on success stories demonstrating what has worked and to a degree what hasn't worked so we can all learn from our experiences. More activities like the radio interview series and documentation addressing barriers trying to arm all of you with the information that you need to be able to make the case for wind technologies in your areas. And then clearly continuing to use Web based maps - maps and user edited materials.

When Wind Powering America started it was much more of a seed that was designed to provide experts to push that information out and now as wind has developed across the country to the degree that it has, we really see the Wind Powering America activities more as a mechanism to spread the great work that everybody is doing to everybody else so that we can learn from each other as compared to the kind of central hub pushing information out about the different technologies to all the people in the field.

So with that I'm going to again say, (unintelligible) sees the wind pass the baton over to Charles who will talk more specifically about the activities and

the workforce and development area. And then certainly encourage people to if they have any questions to certainly contact us. But to visit the Web site and especially the new Web site as it rolls out and provide any feedback that you have on those products to us so that we can work to improve what we're doing. Charles.

Charles Newcomb: Thank you Ian. I see there's one question on the floor. Do you want to answer the questions at the end or is now...

Ian Baring-Gould: Why don't we...

Charles Newcomb:...(unintelligible) given.

Ian Baring-Gould: ...do it at the end.

Charles Newcomb: Okay...

Ian Baring-Gould: Yes we'll do it at the end.

Charles Newcomb:...very good. All right so I'll be ready for you to bring up the slides when you're ready. I guess that is ready. Sorry I'm included by my Q&A. But good - good day folks I'm not sure where you are so I don't know whether it's morning or afternoon where you are. Ian thank for you - thank you for the introduction.

I'll walk us through the Wind for Schools project sort of how it's gone, where we are and then a little bit about where we're going. Although I think as Ian suggested it's a little bit hard to tell where we're going until things are finalized.

So a little bit of background for the Wind for Schools projects for folks that are less familiar with it. The premise was that it's not a mystery that a lot of the wind development that we anticipate and looking at it in slides of where in the country a lot of the wind development is anticipated to go in. It's going to be rural area it's not going to be in downtown Chicago or New York, it's going to be out in prime country in areas that are often where the winds are most plentiful and where the people are not.

And to that degree we anticipate that a lot of the economic and jobs benefits are going to be landing in these areas. To that degree we're trying to figure out what's the most efficient way to get the message out. And one of the ways is to excite the younger population about the promise and a role that wind plays today and what it would play in the future. And also to educate and kind of inspire tomorrow's engineers.

When you look at the workforce development slides and the grass which sort of show we're a little bit shy of the jobs we're going to need within a decade or so. It's going to be really, really, important that we get some very well trained and excited and talented young engineers and project developers and accountants and lawyers in the mix. And the Wind for Schools project is one of those ways of doing that and it seems to be working out reasonably well.

The objectives for the project were to engage rural America on this concept that wind is a good thing it has a place in energy future as well as our economic future. And rural America is going to be where a lot of this happens. By engaging the school and the schools in the K-12's and the teachers themselves it's a message that can live on. And as we prepare these schools with the right curricula, with the right tools and frankly with some tangible compliments in the field in the way of small turbines or midsize or even large

turbines and some cases at schools this is a legacy that can live on. And it's very exciting.

And again equipping these juniors and seniors and often grad school - grad students with the experience that they're going to get through working through the Wind Application Centers is going to be a critical part to getting them into the workforce.

Here's a little graphic that kind of provides a perspective of the network of the Web itself. The Wind Application Center is the WAC just to the left of this school with the wind turbine. And the Wind Application Center is somewhat of a hub obviously the project is a hub too. But the Wind Application Center is a center of everything in this model.

The notion is that they're coordinating between incentive organizations and those can be at the state level or the federal level. It can even be at the private level. So if there's a foundation or a corporate donor or a sponsor that wants to be involved they'll help with that. And they land a tremendous amount on the students and the Wind Application Centers about how do you finance these projects? Where do you find the funds? And it is always fascinating to look back and see the head of the balance sheet for each of these projects and see that route.

And the school - we like to see the school the K-12 host schools with some skid of the game so that they care about the project and that it's operating and everything else. But a lot of times that investment can be appropriately low and sometimes zero but that's obviously not really the objective.

NREL's role and the Wind Powering America's role with Wind Application Centers to provide the structure for the Web and make sure that the links of

communication and the lines of communication are open and making sure that the Application Centers and thereby the school the K-12's themselves have access to the information they need in order to develop successful Wind for Schools projects. And it's - it's very - it's been fascinating to see the types of questions that come up.

It's also - it's a really fascinating ear to the ground for our team to kind of know oh that's interesting. In Virginia for example folks are looking for a wet stamp for a temporary 20 meter anemometer tower. That's something we haven't come across before. How are other states handling it? And before you know it you've got three or four institutions tossing wet stamp drawings in the right directions which is very helpful. So just a quick example of the system working nicely.

This next slide is the approach again is to support these and develop these Wind Application Centers. So there's a process of selection originally for the original six and then less for the second five Wind Application Centers that came into the program. And once they're there to nurture them, to promote them and to help them develop and allow them frankly to establish their own personalities because no two (routes) are the same, no two states are the same. And they all have individual programs in their states.

So in the case of North Carolina they are able to partner with a very active program already on the water conservation and land conservation side. And that's where we're able to leverage a great deal of funds and get most of their proposed projects funded very quickly. So it's exciting to see how creative these Application Centers have become. Others for example Nebraska on Jerry Hudgins' team they have and they have figured out how to work with the USDA's World Business Enterprise Grants which is a challenge in itself.

And so the students that have been involved with that are (unintelligible) grant have really learned a lot about how do you work with federal incentive programs and what's the paperwork involved and what is the National Environmental Policy Act review look like et cetera, et cetera. So they end up through the process certainly the players at the Wind Application Centers end up with a tremendous amount of institutional knowledge and practical skill and experience with regards to getting projects permitted and installed and even monitored. So of course that's a challenge.

A little bit on the numbers we got now everything's over because we're in a little bit of flex in getting our reports. But we've got over 70 students currently involved at the Wind Applications Centers throughout the country. In some Application Centers you'll see two or three students involved that actually funded through the program and then they'll have a whole lot of other people that are involved.

Some Applications Centers they'll focus on just a dozen schools but they're working with the K-12's and other Application Centers will be a clearing house for helping the public to understand if smaller (unintelligible) them are whatever will (unintelligible) them and you'll see that they're processing hundreds of applications a year.

There are over 70 turbines currently installed in the - within the Wind for Schools. I do have an error here I should fess up a little bit. But some of these turbines installed is the 70 turbines within the Wind for Schools program itself either at the Wind Application Centers themselves or the K-12's there's only 50 of them that are actually at the K-12's.

And here's the picture of the Data Sun right here that's the next slide and clearly we have some work to do. But this is one of the most challenging

things in fact is to get data from a well run turbine in the single installation and getting it to consistently pipe data up into a complicated network of machines scattered around the country but then collect all the data and host it for us.

So currently it's being hosted largely at IML. There's a number of schools that do in fact have turbines that are - that they're monitoring on site but have thus so far have been unsuccessful at getting the data all the way to (iron out) and they're working through that. And part of that is developing equipment that is I don't want to say dumb enough but it's specialized enough that if the power does go out there's no rebooting required.

So when a ratter wakes up it knows exactly where it is and where it belongs. And one of these solutions actually has been to use a laptop base because it's an expensive and it's accessible. But that can lead to most of the problems in fact. So clearly we have a little bit of progress to make in this regard.

So looking forward into the future a little bit again in this murky crystal ball, we do see ourselves working very closely with Larry Flowers and then we have to transition the original six Loan Application Centers and invest the programs in those states often with some form of public private support. And Larry's made some great bounds in that direction and we're excited to be working with him on that because that is again one way that we anticipate and hope that the program lives on.

And again as the role of the Department of Energy and Wind Powering America is to get systems moving, to establish systems of ongoing support and then allow that to continue on its own in an organic fashion. So that's working reasonably well in that direction.

We are planning to continue to support the second set of the five Loan Application Centers and that's the plan. Of course we all expect that we'll up wake up with funding at some point coming forward so that'll be fun.

We have a lot of when I say, new projects these are the K-12 and some of the selections and each of the Loan Application Centers has a handful of applications projects that they're installing even with (south) and as far as South as Arizona and North Carolina and as far North as up in Alaska. So it's exciting to see those happening. And we're continuing to leverage this expanding network of talent they have the (quality) Application Centers they are nearly self sufficient.

There are very few days in fact where we have the opportunity to weigh in because by the time a question has been posted to the group, how do I handle this? By the time we see the email roll through there's six answers and it's fascinating and very gratifying to see the system working on autopilot and it's very exciting.

And we are exploring again I mentioned these ways to increase our data capture rates. A big piece of knowing or seeing the value and the relevance of the small and turbine or a wind turbine installed at a school is actually being able to figure out what's it's doing, how it's doing. So the important distinction is that if it's not sending data (unintelligible) it doesn't necessarily mean that it's not being seen in the classroom. That's the easy part of seeing it in the classroom getting it through the firewall not so easy.

So a lot of times we will have systems that have piping data put halfway through a half a dozen or more classrooms in the school and the kiosk in the front of the building and then they still won't be sending (data now) because we're still worrying about the pipe.

So Ian with that.

Ian Baring-Gould: Great...

Charles Newcomb: Back...

Ian Baring-Gould: ...thank you...

Charles Newcomb:...to you.

Ian Baring-Gould:...Charles. Yes thank you Charles. And then lastly Suzanne Tegen who is going to talk about the JEDI and the economic assessment work that we've undertaken - that she and her team has undertaken over the last year. Suzanne.

Suzanne Tegen: Yes great thanks Ian and Charles and thanks to all you on the phone for joining us.

I am going to highlight a few of the projects that the Wind Powering America Economic Development Team has worked on here at NREL. Okay.

Ian Baring-Gould: Suzanne.

Suzanne Tegen: Yes...

Ian Baring-Gould: Are we with you? Oh there.

Suzanne Tegen: ...okay so the first thing I wanted to mention is that we are supporting work by colleagues here at NREL and we did a little bit of this previously for colleagues that Lawrence Berkeley National Labs to estimate the jobs that

come from solar and wind projects funded by the 1603 Treasury Grant program. And I can't show results of that just yet but we hope to have those out the first week in October. We were hoping to have them out actually this week or last week but we are still checking on things. So we should have those out by the first week of October.

And I think NREL's analysis will be one of a few analy - different analyses that are happening on, you know, whether the - whether this program did in fact support jobs for the new wind and solar projects that were built with the money from the Treasury Grant. So stay tuned that should be interesting.

I'll also go through some of the - I'll just mention some of the other updates here that you can see listed on this page. So the JEDI model that you might have seen the August webinar on Jobs and Economic Development Impacts or JEDI I presented a little bit about the JEDI model and so I'm going to just briefly talk about that today and then skip to other projects.

We've updated the wind, gas and coal models which you can download off of our Web site. And we have a new draft transmission model that's not on the Web site yet it is right now specific to the Rocky Mountain region but we will definitely be working on the transmission model. And so this is Jobs and Economic Development Funds Transmission. We're very excited about it and you can pare that with the Wind model for a project if you have project specific data. So look for that in the next fiscal year.

And we were able to create that model and because we are working on the report for the Wyoming Infrastructure Authority and that report has been published and you can get it off of the NREL Web site. I'll just mention this briefly and (Eric) talked about it in the August webinar too so I won't go into detail here. But what we looked at was 9,000 megawatts of wind coming

online which is a huge amount of winds, 1,800 megawatts of natural gas and then some transmission. And this is kind of what the timeline looks like for that infrastructure deployment.

You can see the little diamonds there in color are the transition lines that went in. And then the wind installations over time and the natural gas installations over time. So that's an interesting report if you're interested in that kind of thing check that out.

Another report that was done was done by our colleague Sandra Reategui and another one Stephen Hendrickson that was actually done in 2010 and published this year. And you looked at the first 1,000 megawatts of wind energy in Texas that was a long time ago for Texas. But we wanted to really dig in and look at how many jobs were supported by these wind projects. And how much local labor was used that kind of thing. And you can see just for the onsite construction jobs it was 600 and then the local revenue in that second category that supply chain was many more jobs both during the construction and during operations.

And they did a little a couple of scenarios here to look at sensitivities and their study results show a little over 2,000 jobs and then they did scenarios for, you know, if Texas had more wind manufacturing and they were able to source some of their components from within the state look how much better the jobs could look. So that was - that's what that looks like.

And then Eric Lantz also did a report with Texas Christian University on specific projects in Texas and they looked at employment - similar things so jobs and economic development. And here you can see a chart of the installation started in 2005 and so you see the constructions jobs. And then out

till 2025 you see the operations and maintenance jobs and the other jobs that go along with that.

And something really interesting that I wanted to highlight we - they compared the JEDI default model to actual results. And I really like this slide because it's a great example of the ground trucing that we do with the JEDI model. These the Blue bars there are what the model results would be if you didn't put in your own project specific numbers.

So you'll - you see that they're a little bit - that the default was a little bit high for the construction period and then they're low for the operations period. And this is because of economies of scale. And the JEDI model was originally designed for smaller projects than these and so it was designed for 100 and 200 megawatt projects. And so with economies of scale you're going to see that there are fewer jobs in construction and then more in operations. And there were other differences too but that - the economies of scale was the main one.

And just in case people don't know you can download the JEDI model for free. It estimates the jobs to your state and then also other economic impacts to your state. Right now we have JEDI models available for wind, some solar ones, some (F&L) ones and then some gas and coal and marine and hydrokinetic as well. And we are developing the geothermal ones, the hydropower one which is sort of conventional hydropower. And then offshore wind and small and midsize wind are both kind of dependent on funding but we'd like to be working on those and then transmission as I already mentioned that as well.

So one of the things with all of these JEDI models that's really important is, you know, where were the components manufactured? And one of the things

that the WPA team works on is this wind powering manufacturing facilities map that goes into an annual report that the Department of Energy puts out every year. And this not a comprehensive list of every US facility that manufacturers wind turbine components but it's a pretty good one of the larger facilities.

And so you can sort of find where you are here in the US and you can see that in the Southeast where there isn't typically a lot of large scale winds put in they still have a lot of manufacturing down there. So that's great they're still really receiving economic benefits from wind power.

And so out into the future you've heard from both Ian and Charles that things are a little bit unclear still but that's pretty normal. And in the next fiscal year we are going to continue to do the types of things that you've seen up here. We'll be more - providing more of a supporting role instead of taking the active lead role in doing the reports and that kind of thing. We'll provide support to others who are doing reports like this and we'll definitely keep working on the domestic wind manufacturing map, support for state and regional level analyses.

And then individuals that are user support for all those models and especially the wind one which we do update a couple of times a year usually. And we'll continue to update the JEDI models with new multipliers and whatever new information that we have. I did want to add that last year - this year in not the fiscal year but the actual year they've been about 1,600 unique downloads for the JEDI models as of I think that's as of the end of August or mid-August or something like that.

So that's my last slide and I'm happy to take questions.

Coordinator: At...

Ian Baring-Gould: Great...

Coordinator: ...this time.

Ian Baring-Gould: ...thank you. Yes thank you Suzanne. (Sue) can you go to the opening slide or not the opening but the next one yes.

So (Ed) you were going to say something.

Coordinator: Thank you. Yes if you'd like to ask a question on the audio portion please press Star 1 on your touchtone phone and do the automated entry you must state your name for the automated service so that I can announce you. Again that's...

Ian Baring-Gould: Great.

Coordinator: ...Star 1 to ask a question, Star 2 to withdraw your question.

Ian Baring-Gould: Great thank you (Ed). And then some quick questions that have come over on the line. The first one I'll take is "How is funding for coal and natural gas affected by the budget cuts?"

And doing a quick look at the Senate and House marks again nothing has passed so all these should be taken with a grain of salt. The cuts are basically in line with what's happening with renewables I think it's 33% for coal, there isn't really a natural gas element to DOE's work and then nuclear activities have a cut of about 25% or something of that nature according to what's been passed by the House and Senate that's far an important note I guess is that the

level of congressionally directed projects is also significantly down and that use to impact the wind program funding quite drastically.

So I think the fact that the wind program funding is level across the board from 2010 actually as compared to it going down in its own I think is good to know.

Charles we did have a question from Brian Connors about what happens to the data that's collected from the Wind for Schools activities. Would you mind answering that?

Charles Newcomb: Yes, so the data that's coming off of most of these turbines is I think it's important to understand that it's collected on turbines that are shorter and so the value of the data for much of the dynamic (data) and project interest is somewhat limited. In other words there's no gear box temperatures and yaw rates and all that fun engineering stuff that some people might like to see. Instead it's going to be production figures, estimated wind speeds and instantaneous power in some cases.

So currently that data is being collected by various folks and the Wind Application Centers have started to develop modules that can go into curricula so the K-12's can say, oh now I understand what a probability distribution function for wind speeds might be or now I can understand I can start to draw a power curb relations and I can actually even start to access estimates of what the production would be versus what it is. So what we've experienced and I don't think anybody's doing a (unintelligible) predict kind of evaluation at that level for sure.

And then the goal is is that ultimately this will get wound and more incorporated with (unintelligible) wind is doing and also what (Meade) is doing but to date that hasn't yet happened.

But as - and hopefully perhaps as we start to get larger turbines with more sophisticated (unintelligible) and are able to capture some data from those I think it could be even more interesting because there's a whole lot of fun educational modules that will capture and really excite the wonder and awe about wind power when you can start to see that level of information.

Ian Baring-Gould: Great thank you Charles. (Ed) do we have any calls on the phone?

Coordinator: I have no responses on the audio portion sir.

Ian Baring-Gould: Okay Suzanne there's a question for you. "What - how much would it cost to conduct a regional offshore wind JEDI model analysis for the Great Lakes region?"

Suzanne Tegen: That is a great question and I'm glad that our DOE folks are on this call to. We are really hoping that we'll be able to get the offshore JEDI wind model going and we started it a couple of years ago and then had a issue with funding and so we haven't been able to finish that model. So I guess I could talk to somebody offline who wanted to kind of do their own analysis and they could maybe work with our subcontractor who is the modeler for that if you'd like to do it that way.

Otherwise we'd love to get an offshore JEDI model that everybody can use online and download for free and we've had a lot of requests. I bet I get at least one request for that a week. So we're working on it and for the regional you do it would probably be on a statewide basis and we probably have a

national model as well. And then for regional analyses you would work with the model that you'll hopefully be able to download from our Web site and then work with the modeler to do whichever region, whichever states you'd like to include on that.

And we'd be able to provide support for that so we wouldn't take the lead. But if the Great Lakes folks want to take the lead on that then we'd be able to provide JEDI support on that. And I can't give you an exact number because I don't know how many states they're going to include and that kind of thing. But feel free to use my email and get in touch with me and we can have - start a conversation about that.

Ian Baring-Gould: Great thank you Suzanne. We do have another question about information on kind of Cape Cod, New Bedford, offshore wind development and wind farms in that area. I think that that's actually a really good question for the next session and to a degree a nice lead in. The next webinar that we're having is on Offshore Wind Development and it's going to be providing an update from the Department of Energy as well as the Department of Interior on the kind of current status of offshore wind development.

So we're not in a position to look at or to kind of discuss any specific projects at this point but certainly phoning into the webinars the next webinar we'll certainly be able to answer those types of questions.

Let's see there's another question about whether you'll be able to obtain a recording of this? And yes as all of the WPA webinars this one will be available on the WPA Web site. It takes about a week and a half or so to get it up there but that webinar is there as well as every other webinar that we have done over the last year. So issues of sound, the last offshore wind update all of

those webinars are available for people to view those when they choose and have time.

Another question for Suzanne as we kind of wrap up here. “When will the transmission JEDI model be ready for public release?”

Suzanne Tegen: So that should be - you can never really predict these things but it shouldn't take more than six months. Where I would hope that it would be about three or four months. Our peer review process is what takes so long as we need to have people in the industry review all of our defaults and assumptions and that kind of thing. So as long as we can get people to do that for us and go through the review process and then the final edits and everything we - I'd like to say we'll have it out within three or four months but probably not sooner than that.

Ian Baring-Gould: Great thank you Suzanne. (Ed) are there any other questions coming through voice?

Coordinator: I still show no responses sir.

Ian Baring-Gould: Okay well that's all of the questions that we've had thus far. So and we're a couple of minutes past the hour. So again I just want to highlight that the next call is going to be or the next webinar is going to be on Offshore Wind Development on the 19th. And then November 17 Wind, Wildlife Interactions again the third Wednesday of every month at 3:00. Again putting, if you have any questions or have comments or topics that you would like addressed please don't hesitate to contact any of us.

And again thanks to Jonathan Bartlett for joining our team. We're very much looking forward to working with him. And so until next month have a very nice Fall and we'll talk to you all soon. Bye bye.

Coordinator: At this time that concludes today's conference you may disconnect and thank you for your attendance.

END