

Eleni Pelican: Good afternoon, everybody. I'd like to welcome you to the Department of Energy's webinar on state energy strategic planning. We have a great agenda for you today. Let's see if we can go to the next slide – go over the agenda briefly before we get started. My name is Eleni Pelican, and I'm going to be moderating the discussion today.

And then we will have from now until 3:30 we're going to have a number of speakers – Kate Marks will be first... talking about the work at NASEO that they have done on... state energy planning both on their understanding of the plans across the country as well as guidelines for putting together an effective state energy plan.

Following Kate's presentation, we have two presenters from – Tony Usibelli is joining us from Washington, and Jeff Herholdt is joining us from West Virginia. They're going to talk about their individual state's plans and their process that they went through to put their plans together and what implementation looks like.

After that we will be taking questions. If – because of the large size of the webinar today, everybody is muted. If you are interested in submitting a question, please use your question box on your webinar panel. I will be collecting the questions and asking those of the panelists at the end of the presentation. If we're not able to get to your question, if there is a large number of questions, we will make sure to follow up with you after the webinar.

Let's see... I would also just like to quickly thank ORNL and Jennifer Travis who is helping us today with the technical aspects of the webinar. And before we get started, I just wanted to talk a little bit about the DOE Technical Assistance Program. They're hosting this webinar today, and the TAP program is provided through the office of weatherization and intergovernmental affairs and provides state, local and tribal entities policy and program assistance. We are part of the Office of Energy Efficiency and Renewable Energy. And we have a number of resources.

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The TAP has five priority areas – strategic energy planning is one of them, as well as program policy design, financing, data management, and technology areas. This is – the technical resources is distributed through a number of avenues – webinars like this being one of them – and going down to more specific... one-on-one training or one-on-one technical assistance.

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Strategic energy planning – why is it a priority? This is something that is becoming more and more prevalent. Every state has its own individual profile. And so state energy planning is something that can address the state's particular population resource space as well as energy policies. It's important not only to kind of reflect the individuality of the state but also to provide a base for stakeholders in the state to... work towards the common goals.

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And with that I will turn it over to Kate Marks at NASEO who's going to go through their work on evaluation and guidelines.
Kate?

Kate Marks:

Thank you, Eleni. And we appreciate DOE hosting today. So good afternoon, everybody. NASEO is happy to be here to share with you the work that we've been doing and will continue to do on state energy planning.

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So those of you who do not know, NASEO is the only national non-profit association for the governor-designated energy officials from each state and territory. We were formed by the States in 1986, and NASEO facilitates peer learning among state energy officials, serves as a resource for and about state energy offices. We operate within a committee structure, and we advocate on the interests at the state energy offices to both Congress and federal agencies.

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For some background, the state energy offices really are critical to the promotion of economic development in the clean energy sector. They're at the heart of what's happening in energy in most states. And we've really seen a move beyond just energy efficiency and renewable energy at the state energy office level to a more comprehensive slate of program, including growth and expertise in issues such as nuclear power, shell gas, and coal generation.

To pick up on just a few of the items that are listed here in terms of the state energy offices' efforts, they support private sector energy innovations and commercializations through things like business

incubators and job training. They advise the legislative and executive branches of the state on policy issues. They advance cost-effective energy efficiency retrofits and energy management practices of public buildings. And they conduct statewide energy planning as well as state energy assurance planning, which is intended to help states prepare for and respond to energy emergencies and direct disruptions, as well as build resiliency and redundancy in to the electric grid.

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The state energy office's work is funded in a variety of ways – through state appropriations, public benefits funds or system benefits charges and other self-funding mechanisms. There's also one federal program – the state energy program – that supports the efforts of all of the state energy offices. And this program allows states to allocate their resources based on state identified energy needs and opportunities.

According to an Oak Ridge study of the successful program, every dollar of federal funding under SEP is associated with about 1.03 million source BTUs, an energy cost savings of \$7.22. And each dollar of SEP funding is also typically leveraged at about \$11.00 to the dollar in non-federal funds. I mention this SEP program, because this is one of the ways that the states are able to actively take on the effort of energy planning.

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The process of state energy planning really helps to guide the states and build consensus among stakeholders towards a common goal of meeting future energy needs in a cost-effective and in a stable manner while also encouraging innovative technologies and fostering competitive energy markets. So in 2011, NASEO began an effort to collect state energy plans to evaluate these plans and also provide a resource to states and territories interested in developing similar frameworks as well as other audiences that are interested in learning more about the state energy plans.

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Eleni went in to this a little bit about the importance of state energy planning, but I do want to point out a few things. For example, by 2030, energy demand in developing countries is expected to be about 75 percent higher than non-developing nations like the United States. So this means more demand on our global energy

resources, which in turn means higher energy costs. In a world full of uncertainty, one thing that we do know is that rising incomes and population on a global scale will push energy needs higher.

At the state – sorry – national level we have new options opening for natural gas, there are pending air regulations, power sector investment is expected to become increasingly capital intensive with the rising share of renewables. And then in this economy, the states really are trying to do whatever they can to these economic opportunities. And we do see vast opportunities in the energy sector. So in light of all of these issues, we really need to take a more comprehensive and strategic approach to energy policy.

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So as I mentioned, in 2011 NASEO took an effort to collect all of the states' energy plans. Our research is based on energy plans that were available at the time that the analysis was conducted, we captured those plans that were created or in place by December 2011 and that were considered to be in effect by the state. It's also important to note that the evaluation around these plans is backwards looking. So I'll spend a little bit of time on the evaluation and then move in to our guidelines that were developed as part of our research. As part of this, I really want to emphasize that our collection and evaluations is an iterative process, and we plan to conduct regular updates to our database as states review and revise existing plans as well as develop new ones.

In terms of context, most of the plans that we reviewed were developed before 2010, so there is a reflection of energy markets, resources and demand factors that may have changed since then. Also of note is that a state energy plan is not an electricity procurement plan which the utility views to solicit and secure electricity and associated transmission services for consumers.

There's also a point that some states focus solely on clean energy that may be a result of the entity that was slated to conduct the planning. Also, as mentioned before, the state energy plans reflect current and trending fuel demand, supply and price characteristics. So there are a number of external factors that influence the energy sector at the time that a plan may have been developed and are often reflected in the plan.

The last is that policymakers seize opportunities – as they should – and states with comprehensive frameworks really are at an advantage because these plans will guide near and long-term

energy decisions and provide a more strategic direction that can help to avoid reactive policies that may not achieve an intended result.

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So in 2011, NASEO collected plans from 38 states and the District of Columbia to provide a resource for other states and territories that were interested in developing similar frameworks. The yellow dots on this chart actually signified the states that are required to develop a state energy plan.

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These are the data points that we collected and evaluated as part of those 39 state energy plans. We do have a report currently under final review that explores the economic and energy trends that surrounded the states' energy planning efforts. It evaluates the development and substance of state energy plans including the statutory authority, the offering agency, the role of municipal government, the outlook, the format, the goals, any financing mechanisms and any updates that they've done as well as any metrics that they're tracking. And it also considers how current trends may impact future state energy planning efforts.

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From our research, NASEO's found that there are multiple benefits to having a state energy plan. We saw some major themes that emerged that were based on when the plan was developed. So plans that were developed before 2010 really aimed for reduced dependence on green – reduced dependence on foreign fuel sources, reductions in greenhouse gas emissions, and increased security and reliability. Post-2010 – as a reflection of the economy – state energy plans typically focus more on job creation and economic development in the energy sector.

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We also found that energy efficiency and renewable energy were the two most common goal areas that were included across all of the plans followed closely by transportation. We do delve further in to these and other areas to outline specific topics that were part of all of these goals in terms of the actions and recommended items as part of the evaluation report.

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Once we reviewed all of the state energy plans, we began to identify some steps in the state energy planning process. And we compiled these steps in to a set of guidelines which also are currently undergoing final review and should be released publically very soon. This chart shows the ten steps that we believe will help to establish comprehensive and strategic energy plans. And I'll go through all of these steps in detail.

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The first step is to have the driving authority for the development of a plan from the legislature, governor or agency directive. These typically provide an over-arching vision for the plan, they identify the various stakeholders from a high level perspective, they provide resources or funding to actually conduct the planning effort, and they offer a timeline by which the plan should be completed.

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Step two is to convene the planning team. This list here shows the most frequently seen public and private sector stakeholder groups that are involved in planning teams – which is really the group that leads and drafts the plan.

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Of the energy plans that we collected in 2011, we did find that 21 were led and written by the state energy office, 1 was written by the public utility commission, 3 were written by the governor's office, and 14 were written by an advisory board of which 10 state energy offices sat on that advisory board.

And essentially, as I mentioned before, the planning process it engages stakeholders, solicits public input and actually writes the energy plans. Step three is a very important step that really lays the foundation for the plan and entails analyzing the states' energy data and their related information. This can be a time-intensive and resource-intensive task.

Some important questions to ask during this process are – what other energy-related plans or policies exist at the state level that can be leveraged as part of the energy plan? And what is the

current profile of the state's energy sector in terms of energy resources, industry figures and intellectual capacity?

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This fourth step is where the planning team develops a vision for the energy plan. As I mentioned before, this may have already happened in the first step; and if so, it's still important for the planning team to reflect on this vision. Keep in mind that the vision for the plan really should reflect the outlook for the plan. For example, is the state considering a 5-year plan, a 10-year plan or a 25-year plan?

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Step five is one that can occur at various points throughout the energy planning process, but we collectively reference public input at this stage. So garnering public input and establishing feedback mechanisms is a critical part of the overall energy planning process, because it helps to drive broad acceptance of the plan. There's various ways to conduct this research as provided here. And the state really needs to consider its resources in developing a strategy for how to garner this public input.

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Step six requires the planning team to identify goals and actions that relate to the overall vision and really respond to the question – how are we going to meet this vision? The smart goal's framework captures the essence of what to consider in the development of each goal.

So *S* stands for “specific”, which means identify who's involved and the timeframe that the planning process should take. Make the goals measureable; so make them quantifiable so that you can track progress. Make these goals attainable; you want to make sure that you create goals that are actionable and achievable. *R* stands for making these goals realistic or relevant; so you really want to set goals that the state is willing to work towards and goals that align with other goals that are set at the state level. *T* stands for “timely”; you want to ensure that you establish a practical and certain timeframe.

So once all of these goals are established, it's important to recommend actions to meet each of these goals, explore the financing mechanisms that will allow you to pay for implementing

the goals, and then include evaluation and measurement criteria for each of them.

So examples include things like – generate 50 percent of the state's electricity needs from renewable and alternative energy sources by 2025. Reduce state government energy consumption by 20 percent by 2012. And by 2025, 50 percent of the state's energy facilities should be equipped with management – sorry – carbon management technologies. Those are just some of the... types of smart goals that we saw in a number of the plans.

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Once a state has determined its priorities through the development of the energy plan, the question arises about how the state will pay for the recommendations and initiatives that are proposed as part of it. This chart summarizes the financing mechanisms and programs that we saw suggested throughout the 39 energy plans that were reviewed for our evaluation report.

As you can see, the most common financing mechanism was tax incentives. And this includes property tax incentives, corporate and personal tax incentives, sales tax incentives, income tax incentives. And these were intended to increase the use of clean energy sources.

As a side note, states often pay for the planning effort through state appropriations, utility assessments, foundation and federal support and any kind of resources from labs or universities as well as the state energy funds I mentioned earlier. We really expect this chart to change in the newer plans when we go through those that are being developed now or have been developed since 2011. At least we likely will see more innovative financing mechanisms moving forward.

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Step seven is to actually draft the plan and put it on paper. And although state plans differ in the specific vision, goals and recommended actions, the following general content considerations or outline can really be applied to any state plan. So you can see it goes down the line of executive summary, scope and purpose, current energy profile, some of these other things that I've mentioned so far. And the state can really use this to ensure that their plan provides all of the different elements.

Step eight.

Next slide *[laughter]* – thank you. Next slide, please.

Step eight is to finalize and adopt a plan. The plan should really be delivered to the appropriate authority for approval, and then planning team may need to make any suggested modifications, and then the plan should be made publically available.

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Step nine is an important step that we're seeing more effort around in some of the more recently developed plans. Outreach and marketing of the plan really goes back to the idea of raising acceptance of the plan on a broad scale so it doesn't really sit – just sit on a shelf. So some of the options for marketing include using a high-level graphics firm that can present a final version of the state energy plan in a professional way, hosting local events to showcase the plan, creating a website where the plan can be featured broadly, and then hosting a series of committee meeting – sorry – community meetings.

And again, this is one of the points that the – would really depend on the state's planning budget. Limited budgets may find that something like a website would be the most cost-effective form of communication.

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So this is the last step in the process, and this is where the idea of not having the plan sit on a shelf really comes up again. This step recommends that a state should formally develop an outline for how the progress of the plan will be measured. Oftentimes states will publically report on this progress in the spirit of accountability and transparency. And it's also important to note that a plan should account for some reflection of reality and be flexible enough to accommodate a state's evolving needs or objectives as well as external factors such as global price or resource changes. So a number of states, for example, will require that plans be updated or modified on a every other year basis. Maybe in the off-year they'll actually do a report showing the progress of the plan's accomplishments.

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As part of NASEO's guidelines, we do provide some broadly applicable policies, programs and resources that states have widely adopted. We recognize that a state's energy plan will reflect its energy resource mix. But this list of customer-cited generation and demand side management activities are proven and really provide options that all states could consider including in their plan. And this is also part of the documentation that is under final review; so we expect for this to be released in tandem with our guidelines.

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So bear with me while I describe this slide. But we do expect that almost 47 states will have operational state energy plans by the end of 2013. So the plans that are in blue are plans that were collected under our 2011 efforts that are still operational. Purple is plans that were newly developed in 2011. Orange is plans that were updated or developed anew in 2012. And red is plans that were developed anew in 2013. The yellow is new plans that are underway in 2013. And the stripes are operational plans that we expect to see some updates to in 2013.

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So in conclusion, we believe that the process by which a state develops their energy plan is critically important. There is an opportunity to draw a national perspective from these plans, and we hope to take some time looking at the newly developed plans or the most recently developed plans to try and draw out that national perspective.

There's also some connections to be made as part of these plans to those local and federal agency actions. We do know that some states will even require local entities to look at their state energy plan when developing their own plans. And then lastly NASEO overall is seeking to elevate the significance of these plans and institutionalize the process across the states.

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So moving forward over the next year, NASEO's going to continue to monitor state energy planning efforts and will provide support to the states through online trainings and direct technical assistance. We are in the process of launching a new website – and that will come up any day now. We have a database that's tracking all of the plans that I showed you in that last slide in terms of their development, and we'll continue to update that database, and we'll

release our documentations soon – that includes the evaluation reports, the guidelines as well as those policy program options that I mentioned.

And I encourage any of you to contact me if you'd like to discuss this effort further.

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Thank you very much, and I look forward to working with you all in the future.

Eleni Pelican: Thank you, Kate. Next we are going to hear from... Tony Usibelli from Washington state. With that I will turn it over for him. I'll remind everybody on the call – if you have an idea for a question and you don't want to forget it until the end of the call, please feel free to type it in to the question box, and we will track it and ask it at the end.

Tony Usibelli: Thank you, Eleni. This is Tony Usibelle from the state of Washington. Good morning or good afternoon as appropriate.

The state of Washington falls in to that – the map that Kate showed of completing our state energy strategy in 2012. And in fact this was the first comprehensive work on our state energy strategy that had been done since the early 1990s. We'd done some preliminary work be – in the interim, but this is the first comprehensive attempt at a statewide energy strategy.

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We use the legislature and the governor as our authorizing environment for the strategy. So we have legislation passed and a budget to go along with that to conduct our work. And the legislature and the governor charged us with three major goals – the first of which – I think not surprisingly given Kate's summary of the objectives – are largely around the economy and the environment – the first maintaining energy prices you'll see from this map – which is a few year old – that Washington is one of the red states, although typically I think we're not thought of as a red state.

In this map in terms of particularly low electricity prices and for us, the goal was for us to maintain our competitive energy prices really maintain our competitive electricity prices where nearly every one of our utilities actually has electricity prices that are

below the national average. And that has an important impact on our – the structure of our economy in the state.

Second was to do a little more forward-looking effort to find those opportunities around the clean energy economy and the jobs associated with that. The graph provides statistics to go to the next slide – provides some statistics on the nature of the clean economy in our state. And you'll notice that conservation, hydropower production, energy saving, building material – those kinds of things related to energy and clean energy development are particularly significant part of our... economy.

And then third on the next slide, please, the state has – statewide – has established statewide mandatory reductions in our greenhouse gas emissions. And you can see from the profile there that on a per capital basis Washington actually is a relatively low emitter of greenhouse gases. That's largely a result of our... hydro-dominated electricity generation system. But the state has nonetheless committed to reducing out greenhouse gases in an orderly fashion with three specific milestones between now and 2050.

So one of the first things we had to do as we were putting the strategy together and work through the strategy was to begin to see how we could go about coming up with recommendations that balance these three goals. And as you might expect, in some instances those goals can be complimentary, and in other instances they may in conflict.

If you go to the next slide, you'll also see that it was not simply enough for the legislature to give us three goals; they wanted us also to focus on principles. And in fact these principles we used for the energy strategy but are also a part of the enabling legislation through which the state energy operates. And so they provide us with our ongoing guidance of our focus.

And I'll just mention a couple of them here. Not surprisingly – I think as you'll see this and the next slide as well – the first goal being conservation – so if you stay on that first slide for a second – pursue conservation as the preferred energy resource. That's not simply electricity conservation but efficiency and conservation is the first resource we'd look at for meeting our future energy needs. And then focusing on a range of other items beyond that.

So you can go to the next slide.

And I'll note just a couple here. One of course is – and I'll talk more about number five, which is improving the efficiency of our transportation energy use. And also looking at the opportunities around making the state a model for many of the things that we are proposing to do at a statewide level.

So if you go to the next slide, you'll see the areas that were the focus of our strategy. Our predominant focus – represented by the large circle there – was on transportation and improving the efficiency of our transportation system. We also focused on building efficiency largely because of the predominance of energy efficiency as a major industry in the Pacific Northwest and the achievements that we've had over the last 30 plus years and investments and particularly electricity efficiency and electricity conservation and the opportunities that we saw in that space for economic development, greenhouse gas reduction and maintaining our competitive electricity prices.

And then we picked distributed energy; so this is on-site generation, combines heat and power and district energy systems. And that really came out of a focus by the house energy committee and a strong interest by them to look at distributed energy opportunities in Washington. So we picked that up as a third focus area.

And then sort of off to the side there – overlaying all of this since this was done during the recessions and the immediate aftermath of the recession – a predominant focus that sort of illuminated everything else in this process around jobs.

Let's go to the next slide.

Why did we pick transportation? Well if you look at this flow diagram of the sources of energy use on the left side of the diagram and on the right side – where would we consume that energy? – you'll see that petroleum is our biggest energy use by far, and transportation is the major consumer of petroleum, and in turn there's a significant amount of inefficiency in that system. And so we spent a significant amount of time working with our advisory committee to figure the focus area and really decided that transportation provided the biggest challenge and opportunity for us to focus on.

So go to the next slide.

And so why didn't we pick up electricity planning? I think that's a question that often comes up where many people equate state energy policy or state energy activities around electricity largely because of the regulatory nature of electricity, or in our case both regulated utilities and large number of publically owned utilities, municipals and others.

Well the reason for us was because of the existence of an organization called the Northwest Power and Conservation Council. This is an interstate compact made up of Oregon, Washington, Idaho and the western part of Montana that was created some 33 years ago for the purposes of mitigating the impacts of hydro-electric development on a river system. And most importantly for our work for developing about every five years a comprehensive conservation and electricity power plan.

And this is done over the course of five years using fairly sophisticated modeling of the operation of the electricity system and in turn provides a snapshot for the connected electricity system of the four Northwest states and a blueprint that's used by the states and particularly used by the utilities in the Bonneville power administration to direct our electricity development. And so we really didn't focus on electricity, because we felt we neither – we did not either have the resources to do the level of analysis the council had, and in fact also we felt that it was somewhat redundant.

And you'll notice from the council's work – if you look at the graph, the label figure 10-1, energy efficiency turns out to be by far and away the largest resource for the region, and in fact on the electricity side the council believes that something like 85 percent of our energy needs can be met by efficiency over the next 20 years.

So let me shift a little bit on the next slide to what our process was. So you can see here that we had a sort of a two-part process – an analytical process that we began in 2010 and a policy and implementation process that we moved in the same framework. We did pull together a number of options, we ran that by an advisory committee, we developed a set of scenarios and some kind of rough forecasts up on the analytical side, produced an update of the process – this was a two-year process – an update in 2011, and our strategy was issued late in 2011 and took effect in 2012. Our plan is to now make this a relatively regular process, so we'll be starting up another state energy strategy process

completing it by the end of 2014 to deliver to the governor and the legislature in 2015.

So if you go to the next slide, you'll see the range of different folks that we had as members of our advisory committee as I think has come out well in the NASEO analysis a broad range, a highly representative of public interest, business, elected officials, energy organizations and so forth to provide us with advice. That group met on a fairly regular basis. And it was chaired by the director of our agency, the Department of Commerce where the energy office resides, and by the former chair of our utilities and transportation commission – which is our public utilities commission – and a member of actually the national energy policy committee that was at a national level. So we used them to provide feedback and direction and buy-off on a lot of this.

And then if you go to the next piece, we also convened a – the next slide – the technical experts panel representing the various organizations that had particular expertise or had done analysis such as the Northwest Power and Conservation Council, the National Laboratories, several of our universities, Puget Sound Regional Council, in that case a regional government that had done extensive work in transportation planning – extensive technical work that we could draw on.

And if you go to the next slide, you'll see sort of our ideal analytical framework. This provides you with a basic sense of what we tried to pull together in some ways roughly modeled after some of the EIA work. We use this probably not as much as we had hoped. It turned out to be significantly labor and cost-intensive, and so we use this more as a framework to analyze individual scenarios and particular individual recommendations.

I'd also – should also mention that we did draw pretty heavily on previous work. Kate mentioned this, I think, in her overview. But that's an important element of the state and a few years prior to this had run a multi-year climate action process and a climate action team that had come up with a number of recommendations and had used a lot of consulting analytical work to develop strategies. So we used many of those strategies. We cast them and re-work them as a basis for our recommendations, and then of course the work of the Northwest Power and Conservation Council.

Go to the next slide. Just to give you a little bit of another idea what I had in the previous slide was that sort of down and dirty

details of an analytical model, we also spend some time to kind of think about larger scenarios and what did we think the future might be in terms of two axis from a highly-innovative situation to a fairly stagnant situation, a world where there's a lot of turmoil and uncertainty around energy and so forth to one that's pretty geopolitically stable and came up with a range of different kinds of scenarios. Again we used this more as the way to get out advisory committee and others thinking about what big picture long-range futures might be.

And then let me finish off here just giving you a sense of what we came up with in terms of recommendations. And I won't go in to these in any major detail, but I think this gives you a flavor of the outlet. So if you go the next slide.

We divided our recommendations in the process in to near term recommendations – things that we thought were feasible and achievable within a rough two, three, maybe four years – that time period between the issuance of our plan and when we would next do our stray – our version of an energy strategy again at the end of 2014, 2015 – and had the three different areas – transportation, building efficiency and distributed energy.

Now, transportation space, we then split that in to vehicles and fuels, efficiency of travel and some near-term pricing schemes associated with that. I'll just highlight one or two of these. Lots of interest in electric vehicles – we are one of the states that has a lot of the deployment of the DOE ARRA electric vehicle infrastructure; so there's quite a bit of interest and focus on electric vehicles in our state and having a hydro-based pretty clean electricity system at a low price it's very attractive as an alternative in the transportation space. And then some time looking at some of the pricing schemes around electric vehicles, mileage, car-sharing, mileage-based insurance and so forth.

Go to the next slide. Some of the near-term recommendations around buildings, we really had those in three different areas – performance and transparency, funding and vulnerable organizations – low income and rental housing.

And if you go to the next slide, around distributed energy, some fairly specific policies that we've actually been moving forward with on updating our interconnection standards, working and updating our net metering policies, and looking at ways to streamline some of our permitting around distributed generation.

So those were the near-term, the two, three, four-year kinds of pictures.

Looking at the long-term – if you go to the next slide – again, we use the same major categories in transportation. A lot of focus on those kinds of things such as land use planning and transportation choices in the long-term. The pricing, a variety – we examined a variety of different pricing models around congestion, mileage, cordon pricing – those kinds of things.

And then, I'll particularly highlight the one that's listed under pricing under number six; and that is carbon pricing. We had that as a – as you'll see, there's a paring in all of the long-term strategy. It's really a recognition that many of the things that we are looking to do in terms of efficiency, cost-effectiveness, et cetera, through the strategy could be accomplished with a focus on finding a price of carbon – establishing an overall price of carbon.

There was – I wouldn't say unanimity among our advisory committee in that space, but I think a lot of interest in moving forward on that, and I think in part we were influenced by the fact that British Columbia – our neighbor to the north – has had a carbon price in place now for about five years; and we spend a lot of time looking at that analytically.

Go to the next slide, on distributed generation, similar kinds of things looking perhaps more in the bigger policy framework in terms of some of our purchase agreements, our renewable portfolio standards and some ways to focus on financial incentives. And then I think I actually forgot the long-term building one there, but let me just finish up here on the last one, if you go to the last slide.

I'll talk a little bit about a few lessons that emerged out of this. I think if we put this together, I think we went in recognizing that the analytical work is difficult and complex. And especially with limited resources, the state does not have a comprehensive energy model that models carefully all of the inputs and outputs of our energy system. So we kind of worked around the edges to try and develop some of that.

But we still do not have the resources to be able to do that in any kind of a comprehensive sense. But I think that's a piece – as people are thinking about energy planning – important to recognize and not underestimate the amount of analytical work that may be done and the resources needed to do a good job with that.

I mentioned the links to other plans and other organizations are critically important. There has been a lot of very good work done in terms of energy planning. We tried not to reinvent the wheel in that regard and build off of that rather than starting from ground zero. And also to recognize that there are a range of different organizations with different responsibilities and different levels of authority in the state that control different parts of the energy system. So having an advisory committee that's broadly representative, that's engaged in this is very important.

In the state of Washington we have some 60 electric utilities ranging in size from 500 customers to more than 1.25 million customers. So that makes for some interesting and challenging policy implementation pieces, so it becomes critical to make sure that they're well-engaged as well.

And that really leads me to my third point – it can be difficult often to translate some of these recommendations in to a political and a policy agenda within the legislature. We've had some success in that space, but I would say it's been fairly limited. So we've looked particularly to ways that we can execute many of these recommendations from executive branch rather than necessarily relying on the legislature and recognizing that the legislature and a legislature strategy is not just a short-term strategy but a long-term strategy.

And then finally I'd mention for those states that aren't looking at state energy plan as just an electricity plan, the state's government role and role of state governments beyond electricity is much more difficult. If you're involved in the electricity space, you typically have a utility commission that regulates the operations of the utilities that investor run utilities and then any other utilities, as in our state, are a unit of local government. And so government has a pretty significant role and a significant ability to influence the direction with electricity with both transportation and non – other non-electricity energy uses that can be more difficult.

And then of course from the state of Washington, since we do not produce energy other than from our electricity system, we're not involved or engaged in energy extractive industries beyond electricity generation.

So with that, I will thank you for your attention. And I look forward to the question and answer – the last slide here has my e-mail contact. Thank you.

Eleni Pelican: Thank you, Tony. With that I'm going to hand it over to Jeff from West Virginia who's going to take us through their process.

Jeff Herholdt: Okay. I'm Jeff Herholdt, director of the West Virginia division of energy.

And the next slide please.

Who we are – we're part of the West Virginia Department of Commerce, so I report to Keith Burdette, the secretary of commerce. I also serve as chairman of the West Virginia Public Energy Authority; that's a group appointed by the governor. There are two functional entities within Division of Energy, the energy efficiency program and the Coalfield Community Development. The Public Energy Authority was the first stop on the presentation of the West Virginia energy plan.

Next slide, please.

And overview of West Virginia – we have a population of 1.8 million. We're the third most forested state in lower 48, behind New Hampshire and Maine. Our most significant employers are coal, chemical and natural gas. We are number two in coal production in the United States, number one in coal exports. Our coal exports go to Netherlands – the tops four are Netherlands, Italy, India and China. We're number three in net electricity exported, while we're at 16th in electricity generated, we're number three in net electricity exported, and it's – which points to significance of our electric power grid or East Coast electricity.

Our natural gas production is up 40 percent; we're actually number 10 in natural gas production in the U.S. And you can see from this chart the lower left is our imported energy on the international petroleum. The lower right is our energy – in-state energy consumption. So we are – as the breath of these – this chart would indicate, we are a significant exporter of energy.

Next slide, please.

What we're talking about, our annual five-year plan – this is actually our second plan; the plan we're in to now was just sent to the legislature or actually a couple weeks ago. This is the five-year plan that begins 2013 and goes to 2017. The overarching policy points – increased awareness energy uses on the environment in the economy, energy infrastructure, developing implementation of advanced energy projects, increased energy efficiency, traditional

and alternative energy uses, water as energy assist to resource and siting of energy facilities is the overall thrust. Another point that should be made is that we are required to submit an annual development plan to the governor and the legislature that requires us to update progress on the plan.

Next slide, please.

As far as what we are to cover as the... the traditional fuel such as coal, natural gas, oil, renewables, solar, wind, hydro, geothermal, unconventional landfill gas, fuel cells, animal waste as in chicken litter, alternate fuels, waste, coal, coal-mined methane, coal gasification, coal liqui-faction.

Next slide.

I was – I think I'm gonna – the next slide, please. Thank you.

Yeah this is the cover page of our energy plan – the process and recommendations.

Next page.

The emphasis here is – our energy plan is the governor's plan. The governor submitted a prefaced plan. I – why my picture here is larger here than the governors, I don't know. But I – the letter from me is on the right.

Next slide.

On our – this is a section out of our website where we talk about the energy plan process. That identify – that has the link to the part of the code, the defining which being the plan and speakers, we have all of the public hearings, we had the speakers' transcripts and audio from the speakers are available on this website. Public comments – all the written comments submitted through there – energy plan news – news releases we made, legal advertisements and announcements – and presentation from both West Virginia University and Marshall.

A big part of our planning activity was the subcontracting out of the resource documents. We worked with West Virginia University on the fossil side and Marshall University on energy efficiency and renewable energy policy.

Next slide, please.

The actually energy plan documents... in the energy plan flip book you see in the middle top that that contains the governor's preface, the letter from me, and the governor's recommendations. This is a 16-page let's say highlights of the energy plan. The documents below are the three individual sections of the energy plan dealing with renewable energy, energy efficiency and fossil energy. The document to the right where it says, "Energy Plan 2013 2017," is a flip book of the entire plan.

Next slide, please.

One of the fun parts of the energy plan was our public meetings. In fall of 2012 we had three public meetings held in Huntington, Morgantown, Martinsburg. Each meeting was well-attended, and we had media coverage at each location. And each meeting we have three presentations from West Virginia University on fossil again, Marshall – energy efficiency Marshall on renewable energy. All comments provided were transcribed and included in the plan. At each meeting we had a question and answer session at the end of the presentations.

Next slide.

Again, there is a section in the beginning of the plan that details the governor's energy plan, recommendations – the general recommendations. We continue to monitor and publicize energy production. We have a document called Energy Blueprint documenting the significance of West Virginia that – as an energy supplier. This document was presented to eastern states and congressional delegations. We will be updating that document.

We're also to advocate the economic importance of West Virginia's energy resources and to convene meetings with industry, academia, federal agencies and public officials to assess current fossil energy production evaluated opportunities.

Next slide, please.

The coal recommendations – top recommendation is to work to development of a polygeneration plants. Polygeneration is to put coal to liquid plants. Those liquids could be gasoline, diesel fuel, methanol. We have one announced put coal to liquid plants in there are a couple others that we're working with behind the scenes. Another coal priority is to continue to use the reclaimed

surface land for local economic development, provide briefings on status of coal to the executive and legislative branches.

The legislative briefings are always fun. Promote coal and coal technology research funding, assess feasibility of enhanced EOR, EOR enhanced oil recovery with CO₂, this disaligns ourselves with the U.S. Department of Energy's carbon capture activities, that they're a carbon capture sequestration partnerships. We are involved in both the Midwest partnership and the Southeast partnership. Their goal is to come up with a method to effectively use CO₂ produced from power plants.

The next to last bullet – advocate retention of coal fired electric generation. As all – as *most* coal-producing states have been challenged recently with the EPA regulations on maximum achievable compliance technologies, we're losing 14 percent of our electric generation capacity. We've also had significant reductions on the coal side in mining. So we're challenged on that avenue.

And last one – West Virginia's location where industrial energy users access who access to affordable, reliable supplies. Well we are home to many energy intensive industries.

Next slide.

Natural gas recommendations – monitoring current development midstream natural gas facilities as referenced earlier, our natural gas production is up roughly 40 percent. When we talk about midstream, we're referring to gas separation plants where we're separating the propane, butane and ethane from the natural gas stream.

The second bullet deals with downstream petrochemical refines. Downstream refers to the ethane – one of the liquids we take out of natural gas. Use ethane to make ethylene – which ethylene is the building blocks for plastics.

Next slide.

The energy efficiency recommendations – or certainly the top one continues to be the 2009 International Energy Conservation Code. This is our fifth year at it. We just got the legislation out of the House again this year; it's going over to the Senate. We're in the last two weeks of our legislative session. We look forward to having this issue finally resolved this year.

The last bullet there is make training on energy codes. We are – this is the first year where the West Virginia Home Builders have actually pushed – helped us push the code. They've taken a leadership in pushing the code this year, and we've in turn provided energy code training to each of their eight regional Home Builder organizations.

Next slide, please.

We are an energy intensive state. We have always prided ourselves in our involvement in the Historical Industries of the Future Program. That program is certainly changing at the federal level, and we are migrating some of our activities from IOF to the West Virginia Manufacturing Extension Partnership. We're making extensive use of the E3 services provided through MEP.

We continue with the assessment center. We have Industrial Steps Assessment Center, West Virginia University, and we're now doing boiler mact activities. All boilers now come under the new – the same Maximum Achievable Control Technology standards. So we're using the extensions – the industrial assessment center to do both assessments and tune-ups for those businesses in the state.

Goals – next goal – establish benchmark programs for both state and county school systems – we have some support for that; we don't have total buy-in as of yet – and deal with the utility energy programs, working with them on energy savings targets. We're not finalized with that goal either.

Next slide, please.

Alternative fuel recommendations. The goal is to promote alternative fuels units to local government private sector fleets. That's really now an effort of the compressed natural gas vehicles and propane vehicles. We had earlier legislation last week we had the electric vehicle incentives removed; so we're kind of more limited. We do have – the governor formed a natural gas vehicles task force. Need to make a plug for the Appalachian Natural Gas Vehicle Expo and Conference that'll be here in Charleston on May 13 to 15.

We're also involved in monitoring the implementation of a hydrogen fueling station at West Virginia University. This fueling station was actually moved from the Yeager Airport here in Charleston to Morgantown.

Next slide, please.

On the solar recommendations, we're maintaining – we aim to maintain the current income tax credit for photovoltaic installations, monitor solar integration activities, review the performance of photovoltaic systems installed the state and local government facilities and monitor the update of net-metering policies as necessary.

Next slide, please.

On the wind recommendations, we do have tax incentives for commercial wind – both a property tax reduction and a business and occupation tax reduction. Those two tax incentives have not been messed with, with the current legislation. We're also monitoring national wind integration activities.

On the third bullet we work with a Brown Fuels Assistance Program in looking at the wind opportunities for surface mined lands. We did work with them on the purchase of a sodar unit – a ground monitoring wind system. And we are finding some – a significant opportunities out there.

Next slide, please.

On a hydro recommendation – the focus there is on small scale hydro possible public sites.

Next slide, please.

The biomass recommendations we do data collection work on a annual basis on biomass availabilities – chips, bark, sawdust – and also on slash. We would like to begin creating a world woody biomass centers where people or businesses would have access to trees harvested for mining, road-building and other land-clearing activities. Determine if small-scale wood-powered systems make sense, promoting the use of wood pellets in residential and commercial buildings. We will be including wood pellets in our energy flowchart that I began our presentation with.

Next slide.

On the geothermal, we had Google – the internet company – use Southern Methodist University to identify geothermal opportunities in the Eastern U.S. In that study they found a hot

spot under West Virginia. This is a unique hot spot that was not anticipated. And they made a... press *[laughter]* about this opportunity and kind of challenged West Virginia to try and advance it as an energy resource.

This resource is 10,000-foot deep, 10,000-foot – 2 miles deep, and it's 300-degree water. So while Google may have been excited *[laughter]* at that time, once we found out what resource is actually there, it has not maintained its excitement, at least excitement in this office.

Landfill gas – we are working on the landfills that have been identified by EPA as having opportunities admittedly we are a regulated electric environment in West Virginia, so there is not – there's a hindrance to landfill gas developed.

And with that I am done.

Eleni Pelican:

Thank you, Jeff. And thanks to both of our presenters from Washington and West Virginia. As I mentioned in the beginning, each state has a very different profile; and I think we saw that with these two states both in their approach to energy and their priorities.

A couple of questions. Again, for those of you who missed my introduction today, if we were not able to have the phone lines open because of the size of participants on the call today, if you have a question, please feel free to use your question box, and I will present them to our panelists.

Also there have been questions about – will the presentation slides be made available? Yes, they will. All slides will be available after the webinar is finished.

Question for Tony, and I'm also going to extend it out to Jeff – how much did it cost to develop your state's energy strategy plan? And I'll add – I'll also ask – where did the financing come from?

Tony Usibelli:

So this is Tony. We did not have an absolutely separate budget for it; it is part of our general operating budget for the office. But I would say, given staff time and other sorts of activities, it was probably \$250,000.00 for each of two years; probably \$500,000.000 there. And that was from the – directly from the state budget.

Eleni Pelican:

Jeff, same question for you.

- Jeff Herholdt:* Sure. Ours we had sub-agreements with Marshall and West Virginia University. Each of those agreements were priced out at \$100,000.00 each. We got the \$100,000.00 for energy efficiency and renewable energy through our state energy program account. And the other monies for fossil energy through a state account.
- Eleni Pelican:* And how does having a state energy plan, how does that help guide the conversations on energy policy and programs in the state? Is there anything you could – examples you could specifically point to as to how having the plan in place, stakeholder process, how that's had an effect on the implementation?
- Sorry, this is either for Jeff or for Tony, or both of you... again.
- Tony Usibelli:* Go ahead, Jeff, why don't you go first and then I'll follow.
- Jeff Herholdt:* Okay well I could get in to – it certainly helps frame the issue – framing the issues of what our principle activities are. We do get a lot of interest in people out there for us to do something that's completely... different from anything that's in our plan, and it helps us to kind of better define how we spend our day in and day out here are the West Virginia Division of Energy.
- Tony Usibelli:* So I would echo what Jeff had to say. I think for us, I'd add two things. One is, it really did establish some stronger relationships, particularly with our Department of Transportation and I think gets legislators and the executive branch more focused on the transportation side. Typically a lot of our focus has been on electricity, and we have a large number of policies and other incentives and other things related to electricity. So I think that has been very helpful and very valuable.
- And then it reinforced some of the other efforts that we had underway on sort of the smaller policy efforts such as working on the interconnection standards with our utilities and transportation commission, focusing some of our work on the development of distributed generation, establishing some of our priorities around which areas and efficiency in buildings we wanted to focus on.
- And we in fact have used several of those to help attract some of the federal dollars that support efforts in both solar and efficiency. I think having that in the strategy – while not critical – was helpful in us attracting those funds.

Eleni Pelican: Great. Question for Kate. Actually a few questions for Kate. One question – I don't know if I can ask this of Kate, actually. The question is, "When do you NASEO will be releasing its state energy strategy report?"

That is under review by the Department of Energy right now. So I feel like I can't ask Kate that, because it's – ball's kind of in our court. We're looking at it and hope to give comments back to NASEO in – as soon as possible and have the report out in the next month. And then that will also be made available to everybody on the call today.

But Kate, there is a question – there's been a lot of research on financing energy efficiency. Did you incorporate that in your analytical document?

Kate Marks: We did. And that slide that you saw that tracks the financing and funding mechanisms shows what incentives have been used in the past. And as I mentioned, we do expect to track a little bit more of that moving forward, because we know that there are more innovative mechanisms being used now – especially in light of the economy – in looking for now ways to finance and fund energy projects and programs.

So that is a part of the analysis. We do delve in to it a little bit further just in terms of what the states have used. And we do intend to make that a stronger part of the work moving forward.

Eleni Pelican: You mention in your presentation that the developing world will have more energy demand than the U.S. Does NASEO have any international focus to address this issue?

Kate Marks: We do have an international program, but it's very focused, and so it doesn't really get in to those sorts of issues. But we are basing that on reports out of the Energy Information Administration and other large corporations such as the Exxon-Mobil report – I'm sure many of you are familiar with – that looks at global energy demand and usage. It's about where those – that information has come from.

Eleni Pelican: Also another question for Kate. Does your study attempt to track impacts of campaign funds on state energy planning process? If not, are there any overall insights that you might be able to share from your studies?

Kate Marks: Sure. I think that's a good point. I think one of the reasons that we actually took on this effort was – after that major election in 2008 we did see a number of shifts in the leadership positions obviously, and so we did wanna take a look at what the states had done to establish a baseline and then be able to build on that moving forward.

I think that one of the things that is critically important to the energy planning process that helps move it away from a bipartisan type of effort is really to ensure that a number of stakeholders are involved. And we share the list of public and private sector stakeholders that have been involved in the process in the past and really that we would point to as an expansive list of stakeholders that should be involved. And I think that that really helps to drive a more comprehensive and strategic energy planning – or energy plan and one that is not rooted in... one side of the aisle or another.

Eleni Pelican: Thank you, Kate. There's a question here regarding fracking for West Virginia, for Jeff. Does the state have any plans for requiring companies to reveal the chemicals used in fracking? I understand there is often confusion in state planning as to who is responsible for regulating, monitoring this rapidly-expanding area of natural gas and oil fracking. So I guess, was there something – as I guess natural gas is growing in West Virginia? Does the state energy plan address this as a – as kind of a gross area? And what were the details of that particular resource?

Jeff Herholdt: Right.

Jeff Herholdt: That would – fracking would come under the jurisdiction of the oil and gas division of the Department of Environmental Protection. We do not address fracking in our plan.

As for what is in the fracking... fluids, I think that's all public information put out by our DEP.

Eleni Pelican: Thanks, Jeff. Not to jump around a bit, but there's a lot of different information when you cover state energy plans across the states. It's – I guess the information does jump around.

So for Kate, is there a common timeline among the plans?

I think this is a great question as – in terms of outlooks, what did you find? For example, the California plan has a target out to 2030. Was there a lot of variation there?

- Kate Marks:* There is a lot of variation. But we typically see plans that are looking at by about the 10-year outlook, and that's pretty standard for most of the plans. Others in the pretty distant past, some of the ones that were back to 2002, for example, that we evaluated as part of the 2011 analysis... tried to come up with the 2025, 2030 dates – which are – it's a long outlook. But I do think that most of them come in at the 10-year stand.
- Eleni Pelican:* Did – Jeff and Tony, did your plans have long-term outlooks? And what – well I guess that's the question. How far out do your plans go?
- Jeff Herholdt:* This is Jeff. Our first plan initiated in 2005 had long-term goals. We were – that plan was reviewed by our legislative auditor in the formal whatever process that is where state agencies are audited. And one of their findings is that anything that we put on our plan needs to be accomplishable within the timeframe of the plan. So we do not have anything in our plan over a five-year period.
- Eleni Pelican:* Jeff, same question.
- Jeff Herholdt:* Yes, that was Jeff.
- Eleni Pelican:* Oh I'm sorry. Tony.
- Tony Usibelli:* In ours, most of it of course – we did the short-term long-term focus where the short-term was the next two to four years. In the long-term we did try and look at – at least a bit analytically – to 2035. And that tied in with the second of our greenhouse gas reduction goals, some of the work that had been done on transportation planning by some of our regional governments like the Puget Sound Regional Council and so forth. And we thought that was at least a realistic timeframe to look out analytically.
- Eleni Pelican:* So another question for Kate. Can you talk about some of the big ideas that you saw in the plans – for example, Net Zero Energy in California and Massachusetts? Or were they less visionary and more technical when you got in to each plan?
- Kate Marks:* And that's an interesting question. It's really a little bit of both. And I think with some of the more recent plans you do see things that are a little bit more visionary like Net Zero Energy and maybe look out a little bit further about how well – promote economic development and encourage job creation. Whereas some of the plans before were a little bit reactionary; they were responding to

things like high oil prices, high natural gas prices. And so I think that we're going to see a shift in there.

We do – in the analysis – get a little bit in to why the states may have taken on some of these action items. And so I think that that will help to clarify the vision a little bit more. But we could probably spend hours right now talking about all the various – the points that were made. But I really do think that some of the goals are visionary, and then the recommended actions can be broken in to short and long-term – and that's where you'll see more of the technical aspects come to light.

Eleni Pelican: Did you see anyone look at carbon dioxide removal goals?

Kate Marks: Well I think it's important to keep in mind that there's also climate action plans, state implementation plans and other plans that look at some of those more direct activities. But some of the energy plans certainly will get in to some of those aspects and reference some of the other plans at the state level. And that's why we really point out that it's important to look at some of those other plans and make sure that you're not conflicting in the comprehensive energy plan, because it really is intended to be the overarching plan for the states.

Eleni Pelican: Great. Well those were great presentations. And I wanna thank all of you for giving us both the birds-eye view of what is going on. It seems like there's a lot of activity in state energy planning going on across the country. And then from each of our states the kind of what – how each state approaches state energy planning and how that can differ across the states.

I think that... let's see – we have one more question that has come in. I'm gonna ask it. And this is for Jeff and Tony. It has to do with long-term contracts for generators. It says, "Are long-term contracts important for getting capital intensive assets built?"

Tony Usibelli: Well I can speak to the state of Washington. We currently have... about \$1.75 billion worth of permitted wind projects that are in hold in our state. We've had a lot of construction. We've probably spent \$4 billion to \$5 billion on the current wind projects in this. \$1.75 billion are on hold because the – what the wind developers are telling us they do not have long-term contracts for their output. So I think the answer in our case is "yes".

Jeff Herholdt: Yeah on the wind side I think we have 560 megawatts in place when we have a 100 megawatt project that has no power purchase

agreement. So it's selling power directly in the grid. I would assume our wholesale rate in the grid is a little bit more than \$0.03 a kilowatt hour. So it's somehow making a business case out of selling wind in the grid at just over \$0.03. But all power – all major... electric projects have to be assured of market before they can be financed.

Eleni Pelican:

Well, with that said I think we are going to wrap up our presentation. I want to thank everybody for joining us. Just to reiterate, we have – Kate mentioned in – as part of her presentation, we have additional resources for states who are in the process of state energy planning. NASEO is offering both online training as well as direct technical assistance. If that is of interest to your agency, please contact Kate or myself, Kate Marks at NASEO or myself, Eleni Pelican here at the Department of Energy. We will be making the presentations available as well as our contact information after the webinar. We will send it out to all of the participants.

But I'd like to thank everybody for participating today and hope you found the presentation useful and informative. Jeff, Tony, thank you for taking your time out of your busy day. And Kate, same to you.

So everybody, hope you enjoy the rest of your day and your week.

Jeff Herholdt:

Thanks so much.

Tony Usibelli:

Thank you.

Eleni Marks:

Thanks everybody.

Jeff Herholdt:

Okay.

[End of Audio]