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AMERICAN ENERGY INITIATIVE: IDENTIFYING ROADBLOCKS TO WIND AND SOLAR ENERGY ON PUBLIC LANDS AND WATERS, PART II—THE WIND AND SOLAR INDUSTRY PERSPECTIVE

OVERSIGHT HEARING

BEFORE THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

Wednesday, June 1, 2011

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OVERSIGHT HEARING ON THE "AMERICAN ENERGY INITIATIVE: IDENTIFYING ROADBLOCKS TO WIND AND SOLAR ENERGY ON PUBLIC LANDS AND WATERS, PART II—THE WIND AND SOLAR INDUSTRY PERSPECTIVE."

Wednesday, June 1, 2011

U.S. House of Representatives

Committee on Natural Resources

Washington, D.C.

The Committee met, pursuant to call, at 11:36 a.m., in Room 1324, Longworth House Office Building, Hon. Doc Hastings [Chairman of the Committee] presiding.

Present: Representatives Hastings, Duncan, Gosar, Labrador, Landry, Markey, DeFazio, Napolitano, Holt, Grijalva, Garamendi and Hanabusa.

STATEMENT OF THE HON. DOC HASTINGS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

The CHAIRMAN. The Committee will come to order. The Chairman notes the presence of a quorum, which, under Committee Rule 3(e), is two Members.

The Committee on Natural Resources is meeting today to hear testimony on an oversight hearing on the American Energy Initiative: Identifying Roadblocks to Wind and Solar Energy on Public Lands and Waters, Part II—The Wind and Solar Energy Perspective. Under Committee Rule 4(f), opening statements are limited to the Chairman and the Ranking Member of the Committee. And before I recognize myself for the opening statement, I do want to just kind of make some housekeeping observations.

We have had kind of fits and starts by getting this together. We have had to postpone this Committee meeting from past days, and then we had to postpone the time of this because the Republicans were invited down to the White House to meet with President Obama and, of course, that compresses all of the activity we have today. So we are then doing something that is again out of order, and that is combining the two panels into one.

So I just wanted to say that sometimes these things happen here. The best plans sometimes go awry. But the important part, of course, in all of this is the substance of the testimony that our witnesses are giving to this Committee, and that indeed is the important part.

I will ask unanimous consent that all Members who want to submit a statement for the record can do so. And without objection, so ordered.

[The prepared statement of Mr. Gosar follows:]

Statement of The Honorable Paul A. Gosar, a Representative in Congress from the State of Arizona

I would like to thank Chairman Hastings for holding today's hearing on roadblocks to wind and solar energy development on public lands.

The United States' dependence on foreign oil is one of the gravest national security issues facing our country. If we want to reduce its dependence on foreign oil, we must properly utilize all our resources right here in America. This hearing is critical to exposing federal policies that are prohibiting the industry's job creators from utilizing public lands and developing renewable energy infrastructure. It is important that this Congress learns from today's hearing exactly what agencies and policies are improperly stagnating our renewable energy development.

The State of Arizona has some of the most promising areas for solar and wind energy development in this country and perhaps in the world. Many of the most suitable locations are found on the state's public lands. Arizona's First Congressional District, which I serve, consists of almost seventy percent in public land; that includes around 2.6 million acres of Bureau of Land Management (BLM) land and 9.2 million acres of Forest Service land. The federal government must partner with industry, small business, and state and local governments to ensure our public lands continue to be utilized for diverse purposes such as outdoor recreation, livestock grazing, mineral development, and energy production, while still protecting natural treasures. The mixed use of these lands is a fundamental aspect my state of and my district's economic viability.

Arizona's First Congressional District can be a model for energy-driven economic recovery in this country. Rural Arizona is rich with natural resources that provide for sound extraction and contains a diverse climate that is conducive to all forms of energy generation including traditional fossil fuels, hydro-electric, solar, and wind power. However, renewable energy development, like other resource use and energy sectors, are being plagued by excessive administrative costs, duplicative permitting, and lengthy and burdensome lawsuits filed by any or all environmentalist groups. New generation pilot and developmental projects are simply not getting off the ground. The government is requiring redundant, costly and unnecessary environmental reviews; making inconsistent permit approvals and denials; and in some cases, even completely halting the advancement of projects already underway.

For example, there are 32 pending applications for solar energy projects in the State of Arizona alone. If all 32 of these projects were processed and approved today, Solar Energy Industries Association estimates that these projects could support nearly 100,000 new jobs within in the next five years. These projects would amount to over 18,630 megawatts of power.

The wind energy business is experiencing very similar struggles. I have met with a wide variety of companies doing business in my state, whose projects are in regulatory limbo. This includes an 85 megawatt project which would be the very first Native American majority-owned renewable energy project in the country. The unstable regulatory environment is simply unacceptable given the opportunities we have in the state.

Let me be clear, environmental protections are extremely important to me. My district is home to some of the most frequently visited destination locations in the country, and contains an abundance of other hidden natural treasures. But a careful balance between environmental protection and economic activity can be achieved. Regulations need to be developed in a transparent and streamlined manner, and with consideration for the negative impacts they may impose on our communities and the economy.

Currently, the federal government's policies are having a disproportionately negative effect on rural communities like mine which depend on public lands for their livelihood and continued economic development. At the same time, the federal government expects our communities to meet its obligations as stewards.

I look forward to hearing from today's witnesses, the industry people who deal with these policies on a day-to-day basis. It is important that this committee continues to investigate examples in which the federal government is doing a disservice to communities like mine so that we can move forward, implement policies that remove unreasonable barriers to economic development and get people back to work.

The CHAIRMAN. I will now recognize myself for my opening statement.

America has been blessed with many kinds, different kinds, of natural resources, and there is no doubt that we need to utilize all

of them to significantly reduce our reliance on unfriendly foreign energy. The House Republicans' American Energy Initiative is an "all-of-the-above" approach to address our energy needs, working to ensure affordable prices and creating good-paying American jobs.

Renewable and alternative energy sources, such as wind, solar, geothermal and hydropower, are an integral part of any long-term energy strategy, and there is tremendous potential to use our public lands and waters to help foster and expand their development.

Today's hearing is the second in a series to identify the roadblocks to wind and solar energy on public lands. On May 13th, the full Committee heard from the Obama Administration representatives when we received testimony from BLM Director Bob Abbey and BOEMRE Director Michael Bromwich. Today we will hear testimony from representatives of the renewable energy industry, who are struggling to fight through the red tape that is hindering clean energy projects and slowing job creation.

While the Obama Administration deserves credit for some advances on facilitation of their renewable energy projects on Federal lands, significant obstacles exist to renewable energy development. Ironically, the bureaucratic delays, unnecessary lawsuits and burdensome environmental regulations impede our ability to harness wind and solar energy on public lands.

As we learned at the last hearing, only 1 percent of BLM's solar energy zones, or SEZs, created from over 120 million acres of BLM land is currently being offered for streamlined solar energy production. Often, BLM's regulatory structure is so complicated and slow that companies don't bother applying, opting instead for private land.

Our public land has specifically been designated as multiple use. It simply makes no sense that the ability to access it, including for energy development, is so cumbersome and uninviting. Even more stunning is that the perpetrators of many of the lawsuits that are blocking solar and wind production on Federal lands are often the exact same groups that are supposedly the leading proponents for renewable energy development.

Time after time, renewable energy projects that the Obama Administration has highlighted its support for have been canceled, held up, or defunded due to their own policies or their inability to follow through with the licensing or permitting. The Cape Wind project off the Massachusetts coastline is an excellent example of an offshore wind project that has suffered from years of setbacks. While the Cape Wind project received construction approval in April, it was a 10-year process that was subject to numerous bureaucratic delays and red tape. BLM recently announced a request for interest from the public and received 11 submissions from 10 companies expressing commercial leasing interests. However, after receiving the submission, BOEMRE announced that it was reducing the leasing area by more than half.

There is tremendous wind energy potential off the coast of Massachusetts, but this Administration's decision appears to not have been based on any scientific studies with regard to potential for wind development in this area. There are clearly abundant opportunities on our public lands and waters for homegrown American energy, but until the restrictive government inefficiencies and

politically driven lawsuits are addressed, they may never reach their true energy-production potential. These policies cost American jobs, block clean energy production, and increase our dependence on foreign sources of energy.

So I am looking forward to hearing from the witnesses today to learn more about the challenges they are facing and what Congress may be able to do to better facilitate the renewable energy production on our public lands.

[The prepared statement of Mr. Hastings follows:]

Statement of The Honorable Doc Hastings, Chairman, Committee on Natural Resources

America has been blessed with many different kinds of natural resources and there is no doubt that we need to utilize all of them to significantly reduce our reliance on unfriendly foreign energy. House Republicans' American Energy Initiative is an all-of-the-above approach to addressing our energy needs, working to ensure affordable prices and creating good paying American energy jobs. Renewable and alternative energy sources, such as wind, solar, geothermal, and hydropower are an integral part of any long-term energy strategy and there is tremendous potential to use our public lands and waters to help foster and expand their development.

Today's hearing is the second in a series to identify roadblocks to wind and solar energy on public lands. On May 13th, the Full Committee heard from Obama Administration representatives when we received testimony from BLM Director Bob Abbey and BOEM Director Michael Bromwich. Today we will hear testimony from representatives of the renewable energy industry who are struggling to fight through the red-tape that is hindering clean energy projects and slowing job creation.

While the Obama Administration deserves credit for some advances on facilitation of their renewable energy projects on federal lands, significant obstacles exist to renewable energy development. Ironically, bureaucratic delays, unnecessary lawsuits and burdensome environmental regulations impede our ability to harness wind and solar energy on public lands.

As we learned at the last hearing, only one percent of BLM's "solar energy zones," created from over 120 million acres of BLM land, is currently being offered for streamlined solar energy production.

Often, BLM's regulatory structure is so complicated and slow that companies don't bother applying, opting instead for private land. Our public land has specifically been designated as multi-use. It simply makes no sense that the ability to access it, including for energy development, is so cumbersome and uninviting.

Even more stunning is that the perpetrators of many of the lawsuits that are blocking solar and wind production on federal lands are often the exact same groups who are supposedly the leading proponents for renewable energy development.

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There are clearly abundant opportunities on our public lands and waters for homegrown American energy, but until the restrictive government inefficiencies and politically-driven lawsuits are addressed, they may never reach their true energy production potential. These policies cost American jobs, block clean energy production and increase our dependence on foreign sources of energy.

I'm looking forward to hearing from the witnesses today to learn more about the challenges they are facing and what Congress may be able to do to better facilitate the renewable energy production on our public lands.

The CHAIRMAN. With that, I now recognize the distinguished Ranking Member for his opening statement.

STATEMENT OF THE HON. EDWARD J. MARKEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS

Mr. MARKEY. Thank you, Mr. Chairman, very much. And we welcome you back. We know it has been a difficult couple of weeks for you and your family. Our thoughts and our prayers have been with you. We are happy to have you back.

And for part two of this hearing that we are having on renewable energy development on public lands, I know that there has been a lot of talk about moratoriums here in the Committee, but the Republican majority is ignoring the real moratorium that they protected for years, the Bush-Cheney clean energy moratorium. During the 8 years of the Bush Administration, a grand total of zero permits were issued for solar plants, and only five wind projects were approved in the entire United States. Renewable energy development was almost exclusively a private-land endeavor, leaving untapped some of the best renewable resources on Federal lands.

Under the Obama Administration, that has changed. The 3,800 megawatts of wind and solar projects permitted in 2010 alone under this Administration is 13 times more than what was permitted during the entire 8 years of the Bush Administration at the Department of the Interior. When the Bush Administration was blocking these permits and locking up Federal lands to clean energy development, where were the Republicans then? Republicans want to criticize the Obama Administration when it was actually Republican policies for 8 years that stymied renewable energy development on public lands. Talk about ignoring the elephant in the room.

I am happy to see this recent progress under the Obama Administration, but I am deeply concerned about current Republican policies directly aimed at rolling it back. While the Republicans fight to keep each of the oil and gas industry's eight different tax subsidies, they stand ready to let the highly successful 1603 renewable energy program expire in 7 months. That financing program saved tens of thousands of jobs during the economic downturn and helped put new renewable energy on the grid.

Demonstrating that there is apparently never an inappropriate time to give an assist to Big Oil, the Republican leadership has scheduled a vote for later this week in which the critically necessary emergency aid to tornado victims in Joplin, Missouri, is dependent upon defunding a program that helps American companies manufacture superefficient and clean-fuel vehicles. This is not an "all-of-the-above" strategy, but it is an "oil above all" strategy, taken straight from the Bush-Cheney playbook that was used for 8 consecutive years.

There is much at stake here, and it goes far beyond the environmental and public health benefits of renewable energy. The clean energy sector represents one of the most important opportunities to generate economic growth and new, good-paying jobs for the next generation of Americans. These benefits will not come from subsidizing Big Oil. Despite $485 billion in profits over the last 5 years, ExxonMobil, BP, Shell, Chevron reduced their U.S. work-

force by more than 10,000 people. They reduced their workforce. It is not happening with coal. Even with U.S. coal production increasing 600 percent, since 1950 employment in coal mining has fallen from 416,000 to fewer than 88,000 coal miners. That is with a 600 percent increase in production. And those resources are becoming more expensive and scarcer with nearly every passing year.

The trends with renewable energy are in the opposite direction. Costs are going down, employment is going up, advanced technologies that utilize the free fuel of the wind, the sun and the Earth will ultimately win out. A $12 trillion market awaits the technology leaders that can do so most effectively, but we have to beat the Chinese, the Germans and the Koreans. We need a plan. Using our rich public lands as a launching pad for the clean energy sector is about as close to a home run as we get in public policy.

I am pleased that the Committee is taking a deeper look at the issue here today, and I hope that we can find a bipartisan way to circle the bases together. And I am sure that the meeting with the Republicans in the White House this morning has now got them on our side on renewable energy, and I am hoping that that clarifying moment did occur. I was not allowed in that meeting.

Anyway, I yield back the balance of my time.

[The prepared statement of Mr. Markey follows:]

Statement of The Honorable Edward J. Markey, Ranking Member, Committee on Natural Resources

First of all, I'd like to welcome back our Chairman today. I know it has been a difficult couple of weeks for you and your family. Our thoughts and prayers have been with you, and we are happy to have you back.

As we heard 2 weeks ago in Part 1 of this hearing, the Obama Interior Department has made renewable energy development on public lands a top priority.

I know there has been a lot of talk about moratoriums here in this committee, but the Republican Majority is ignoring the real moratorium they protected for years: the Bush-Cheney clean energy moratorium.

During the 8 years of the Bush administration, a grand total of zero permits were issued for solar power plants and only 5 wind projects were approved. Renewable energy development was almost exclusively a private land endeavor, leaving untapped some of our best renewable resources on federal lands. Under the Obama administration, that has changed.

The 3,800 megawatts of wind and solar projects permitted in 2010 alone under this administration is 13 times more than what was permitted during the entire 8 years of the Bush administration.

When the Bush administration was blocking these permits, and locking up federal lands to clean energy development, where were the Republicans then?

Republicans want to criticize the Obama administration, when it was actually Republican policies that stymied renewable energy development. Talk about ignoring the elephant in the room!

I'm happy to see this recent progress under the Obama administration, but I am deeply concerned about current Republican policies directly aimed at rolling it back.

While Republicans fight to keep each of the oil and gas industry's 8 different tax subsidies, they stand ready to let the highly successful 1603 renewable energy program expire in 7 months. That financing program saved tens of thousands of jobs during the economic downturn, and helped put new energy on the grid.

Demonstrating that there is apparently never an inappropriate time to give an assist to Big Oil, Republican leadership has scheduled a vote for later this week in which the critically necessary emergency aid to tornado victims in Joplin, Missouri is dependent upon defunding a program that helps American companies manufacture super-efficient and clean-fuel vehicles.

This is not an "All of the Above Strategy" but an "Oil Above All" strategy taken straight from the Bush-Cheney playbook.

There is much at stake here, and it goes far beyond the environmental and public health benefits of renewable energy. The clean energy sector represents one of the

most important opportunities to generate economic growth and new good-paying jobs for the next generation of Americans. [CHART]

Those benefits will not come with subsidizing Big Oil. Despite $485 billion in profits over the last 5 years, ExxonMobil, BP, Shell, and Chevron reduced their U.S. workforce by more than 10,000 people. [CHART]

It's not happening with coal. Even with U.S. coal production increasing 600 percent since 1950, employment in coal mining has fallen from 416,000 to fewer than 88,000. [CHART]

And those resources are becoming more expensive and scarcer with nearly every passing year.

The trends with renewable energy are in the opposite direction. Costs are going down and employment is going up. Advanced technologies that utilize the free fuel of the wind, the sun, and the earth will ultimately win out. A $12 trillion market awaits the technology leaders that can do it most effectively. But the Republican assault on clean, domestic energy production is making it increasingly likely that those technology leaders will not be American, but Chinese, German, and Korean.

Using our rich public lands as a launching pad for the clean energy sector is about as close to a home run as we get in public policy. I am pleased that the committee is taking a deeper look at the issue here today, and I hope that we can find a bipartisan way to circle the bases together.

Thank you. I look forward to our witness's testimony.

The CHAIRMAN. Optimism is contagious.

I thank the gentleman for his opening statement, and I want to welcome the witnesses, our combined panel here. We have Mr. Roby Roberts who is the Co-Chairman, Legislative Committee of the American Wind Energy Association; Susan Reilly, CEO of RES Americas; Mr. James Gordon, President of the Cape Wind Associates, LLC; Jim Lanard, President of the Offshore Wind Development Coalition; Mr. Rhone Resch, President and CEO of Solar Energy Industries Association; Mr. Frank DeRosa, Senior Vice President for First Solar, Inc.; Dr. Martin Piszczalski—is that good?

Dr. PISZCZALSKI. Close.

The CHAIRMAN. Does anybody ever do your name precisely right the first time?

Dr. PISZCZALSKI. There is always a pause.

The CHAIRMAN. And I had that pause. But thank you. I know your background anyway. At least when your name ends in S-K-I, that is a dead giveaway.

And finally, Dan Reicher with the Center for Energy Policy and Finance at Stanford University.

Like all of our witnesses, your written statement will appear in total in the record. So we ask you to keep your oral remarks to 5 minutes if you can do that. Hopefully you can.

You have to turn on the microphone that is in front of you, and when you turn on the microphone at the start, let me explain the timing lights. The green light goes on, and that signifies the first 4 minutes. When the yellow light goes on, you have 1 minute left. When the red light goes on, that is the end of your 5 minutes, and certainly I ask you to complete your thought.

So with that, Mr. Roberts, you may begin, and you are recognized for 5 minutes.

STATEMENT OF ROBY ROBERTS, CO-CHAIRMAN, LEGISLATIVE COMMITTEE, AMERICAN WIND ENERGY ASSOCIATION

Mr. ROBERTS. Thank you. Chairman Hastings, Ranking Member Markey and other members of the Committee, thank you for the

opportunity to testify today. My name is Roby Roberts and I am Vice President of Communications and Government Affairs for Horizon Wind Energy. I am testifying on behalf of the American Wind Energy Association, AWEA, where I currently serve as the Chair of the AWEA Siting Committee and previously served as Chair of AWEA's Board of Directors and Legislative Committee.

Wind energy is a clean, affordable and homegrown energy resource. It contributes to rural development through property taxes that support schools and communities; royalty payments that help families stay on their farms or ranches; and good jobs for communities that all too often lack such opportunities.

Wind energy is also an important part of a diverse energy portfolio. It is commercial, rapidly scalable. And taking into account Federal incentives received by all energy technologies, wind energy costs have fallen blow the cost of most conventional sources and are close to cost-competitive with new natural gas generation. Importantly, wind energy prices can be locked in up front for 20 years, which acts as a hedge on volatile fuel prices.

The wind energy industry currently supports 75,000 people in the U.S. The industry has been one of the few bright spots in an otherwise difficult economy. In 2010, the industry installed over 5,000 megawatts, representing 11.1 billion in investments. Total cumulative installed capacity stands at over 40,000 megawatts, enough to power 10 million homes. Since 2001, wind energy has represented 35 percent of all new electric capacity, second only to natural gas, and more than nuclear and coal combined. The industry has utility scale wind projects operating in 38 States and more than 400 manufacturing facilities in 42 States.

The biggest roadblock facing the wind energy industry right now is a lack of consistent and long-term Federal policy to support renewable energy. Despite bipartisan support, tax credits for renewable energy have been on again, off again. The production tax credit, PTC, expires at the end of 2012. Failure to extend this incentive will result in a large tax increase on wind energy. We request that Congress extend the PTC for wind energy this year. Given lead time for project development, it is critical to act now to avoid a lull in development post-2012. Business decisions for 2013 are already being made.

And again, despite bipartisan support, there is no long-term demand signal, such as a renewable or clean energy standard.

The wind industry is also facing urgent challenges as a result of two documents released in February of 2011 by the U.S. Fish and Wildlife Service. I will focus my testimony on the Draft Land-Based Wind Energy Guidelines, as Susan Reilly from RES Americas will discuss the Eagle Guidance.

In 2007, the Secretary of the Interior Kempthorne, created a Federal Advisory Committee comprised of 22 individuals, primarily from State agencies, industry, science and wildlife conservation organizations, to provide recommendations on wind turbine siting guidelines, Secretary Salazar extended the Advisory Committee charter. The committee submitted consensus recommendations endorsed by every single member in March 2010. Having industry, States and NGO's unite around a single set of recommendations was a significant achievement by agreeing to a higher standard for

wildlife study and protection than any other industry in the country.

Unfortunately, the draft land-based guidelines issued earlier this year by the Service differ in fundamental ways from the Advisory Committee recommendations, and are unworkable for the industry, and will result in substantial delays or even abandonment of thousands of megawatts of proposed wind projects.

Among industry key concerns are, number 1, the scope of covered species and covered impacts; number 2, the scope and duration of pre- and post-construction monitoring; number 3, the role of the Service; number 4, questionable science used to justify certain recommendations; number 5, the lack of phase-in prior to implementation; and number 6, mitigation recommendations are neither practical nor proven to be effective.

I would strongly urge this Committee and the Congress to express support of the Department of the Interior and the Service for returning to the consensus Advisory Committee recommendations.

Finally, in my written testimony, I detailed a handful of policy recommendations specific to public lands. In the interest of time, I won't repeat those here. But I do want to emphasize that without long-term Federal policies on the tax and demand side, as well as making the Service policies more workable, establishing policies specifically to make developing projects on public lands more attractive will be of marginal benefit at best.

Thank you for the opportunity to testify. I am happy to answer questions.

The CHAIRMAN. Thank you very much, Mr. Roberts, for your testimony.

[The prepared statement of Mr. Roberts follows:]

Statement of Roby Roberts, on behalf of the American Wind Energy Association (AWEA)

Chairman Hastings, Ranking Member Markey and other members of the Committee, thank you for the opportunity to testify today. My name is Roby Roberts, and I am Vice President of Communications and Government Affairs for Horizon Wind Energy LLC ("Horizon"). I am testifying on behalf of the American Wind Energy Association (AWEA), where I currently serve as the Chair of AWEA's Siting Committee and previously served as Chair of AWEA's Board of Directors and Legislative Committee.

AWEA is the national trade association representing a broad range of entities with a common interest in encouraging the deployment and expansion of wind energy resources in the United States. AWEA members include wind turbine manufacturers, component suppliers, project developers, project owners and operators, financiers, researchers, renewable energy supporters, utilities, marketers, customers and their advocates.

Horizon and its subsidiaries develop, construct, own and operate wind farms throughout North America. Based in Houston, Texas with 27 wind farms, over 300 employees and over 15 development offices across the United States, Horizon has developed more than 3,600 MW and operates over 3,400 MW of wind farms. Horizon ranks third in the United States in terms of net installed capacity. Horizon is owned by EDP Renewables, a global leader in the renewable energy sector that develops, constructs, owns and operates renewable generation facilities.

Wind energy is a clean, affordable and homegrown energy resource. It contributes to rural development through property taxes that support schools and communities, the royalty payments that help families keep on their farms or ranches, and through the good jobs, both long-term and short-term, that it brings to communities with all too few such jobs.

Wind energy is also an important part of a diverse energy portfolio. It is commercial, rapidly scalable, and, taking into account federal incentives received by all energy technologies, wind energy costs have fallen below the costs of most new conven-

tional sources, and are close to cost-competitive with new natural gas generation. Because the "fuel" for wind energy is free and inexhaustible, prices can be locked in for 20 years, thus acting as a hedge on volatile fuel prices. Deploying wind energy domesticates our energy supply and bolsters energy security.

In short, it is good for our economy, our national security, public health and the environment.

The wind energy industry currently employs 75,000 people in the U.S. The industry has been one of the few bright spots in the otherwise difficult economy. In 2010, the industry installed 5,116 megawatts, representing $11.1 billion in investment. Total cumulative installed capacity stands at 40,181 MWs, enough to power 10 million homes. Average annual growth for the past five years was 35 percent, second only to natural gas and more than nuclear and coal combined. The industry has utility scale wind projects operating in 38 states and more than 400 manufacturing facilities in 42 states.

The industry's potential as a jobs and economic engine is much greater. The U.S. Department of Energy released a report in 2008 analyzing a scenario of 20 percent of U.S. electricity coming from wind energy by 2030. According to that report, which was prepared by the Bush Administration's DOE, the wind energy industry would support 500,000 jobs at that level of deployment, which is achievable with existing technology.

The biggest roadblock facing the wind energy industry right now is the lack of a consistent and long-term federal policy to support renewable energy. Despite bipartisan support, tax credits for wind and other forms of renewable energy have been on-again, off-again. The production tax credit, which is the key existing federal tax incentive for wind energy development, expires at the end of 2012. Failure to extend this incentive will result in a large tax increase on wind energy developers that will be reflected in the cost of wind power, making it less competitive with competing sources that also receive federal incentives. We request that Congress block this tax increase and extend the production tax credit for wind energy this year. Given lead times for project development, it is important to act now to avoid a lull in development post-2012. Business decisions for 2013 are already being made.

And, again, despite bipartisan support, there is no long-term demand signal, such as a renewable or clean electricity standard.

Without more stable federal financial incentives and demand-side policies, any changes to make developing wind energy projects on public lands more attractive will be of only marginal benefit, at best.

The wind energy industry is also facing urgent challenges as a result of two documents released in February 2011 by the U.S. Fish and Wildlife Service ("the Service"). The first document is the Draft Land-Based Wind Energy Guidelines and the second is the Draft Eagle Conservation Plan Guidance. I will focus my testimony on the draft guidelines [1] as Susan Reilly from RES Americas will discuss the Eagle Guidance.[2] I would like to ask that the executive summaries of AWEA's public comments on both of these documents be made a part of the record for this hearing.

In 2007, then-Secretary of Interior Kempthorne created a federal advisory committee (FAC)[3] comprised of 22 individuals primarily from state agencies, industry, academia and wildlife conservation organizations to provide recommendations on wind turbine siting guidelines. Secretary Salazar extended the FAC charter. The Committee submitted consensus recommendations endorsed by every single member in March 2010. Having industry, states, and NGOs unite around a single set of recommendations was a significant achievement. By agreeing to these recommendations, the wind energy industry was voluntarily agreeing to be held to a higher standard for wildlife study and protection than any other industry in the country.

Unfortunately, the draft land-based guidelines issued earlier this year by the Service differ in fundamental ways from the FAC recommendations and are unworkable for industry and will result in substantial delays or even abandonment of thousands of MWs of proposed wind projects.

Among industry's key concerns are:

- The scope of covered species and covered impacts
  - We recommend the narrower scope proposed by the FAC;

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[1] AWEA's full comments on the draft land-based wind energy guidelines can be found here: http://www.awea.org/issues/siting/upload/AWEA–Comments-on-USFWS–Wind-Energy-Guidelines_May-19–2011.pdf

[2] AWEA's full comments on the draft eagle conservation plan guidance can be found here: http://www.awea.org/issues/siting/upload/AWEA–Comments-on-USFWS–Eagle-Guidance-May-19–2011.pdf

[3] *Available at* http://www.USFWS.gov/habitatconservation/windpower/wind_turbine_advisory_committee.html.

- The scope and duration of pre- and post-construction monitoring
  - We recommend duration be based on the risk profile of the site rather than the three to five years of minimum study recommended by the Service;
- The role of the Service
  - We recommend a developer-led process as proposed by the FAC rather than having the Service in a decision-making role;
- Questionable science used to justify certain recommendations (for example, requiring study of noise impacts on wildlife and studying airspace as habitat);
  - We recommend the use of sound science and that topics that are less clear be researched rather than evaluated at every project;
- The lack of a phase-in prior to implementation
  - Requiring immediate adherence is not practical, which is why the FAC recommended a two-year phase-in;
- Mitigation recommendations that are neither practical nor proven to be effective
  - Mitigation recommendations should be proven and cost-effective, not speculative.

I would strongly urge this Committee and this Congress to express support to the Department of Interior and the Service for returning to the consensus FAC recommendations.

To fully utilize the wind energy resources in our country, we also need to expand our nation's transmission infrastructure. The BLM has an important role to play in permitting transmission projects in the west. But, coordination needs to be improved among the many field offices working on major transmission projects, including the establishment of national project teams, with an individual who has ultimate decision-making authority.

Finally, I wanted to offer a few other suggestions for changes that could improve the ability to pursue projects on public lands. Though, as I noted earlier, these will be of only marginal benefit without stable federal policy to support renewable energy and without fixing the problematic draft guidelines and guidance proposed by the Service:

1. Establish reasonable timelines for agency responses.
2. Allow commercial negotiation of terms of cost-recovery agreements, right-of-way agreements and memorandums of understanding with federal agencies such as BLM and the Service, which is a standard practice in the private sector, particularly for agreements like those entered into with BLM that may last 20 years.
3. Require that policy changes proposed and implemented through instruction memorandums be subject to a public comment process, which would allow industry to challenge recommendations that would make wind energy projects on public lands impractical, regardless of whether those came from BLM itself or resulted from BLM implementing a recommendation from another agency like the Service.
4. Allow a portion of the revenue paid by wind energy projects on BLM lands to be recycled back into the agency for the purpose of improving processing of future permits as is already done for oil and gas, geothermal, film production and communications towers.
5. Provide for categorical exclusions for putting up temporary meteorological towers to test wind speeds on public lands. This is already allowed under BLM's wind energy development policy, but is not consistently used.

Thank you again for the opportunity to testify. I am happy to answer questions.

The CHAIRMAN. And I will recognize Ms. Reilly for your testimony. You are recognized for 5 minutes.

STATEMENT OF SUSAN REILLY, PRESIDENT AND CEO, RENEWABLE ENERGY SYSTEMS AMERICAS INC.

Ms. REILLY. Chairman Hastings, Ranking Member Markey and members of the Committee, thank you for the opportunity to testify today. My name is Susan Reilly, and I am the President and CEO of Renewable Energy Systems Americas. RES is headquartered in Colorado, and we are one of the leading renewable energy companies in the United States. We have built more than 10 percent of

the operating wind farms in the U.S., and we currently have approximately 10,000 megawatts of wind and solar projects under development, which equates to the amount of electricity used by approximately 2.5 million average American homes.

You have asked us to provide an industry perspective regarding roadblocks to developing wind and solar energy on public lands. We encounter many obstacles to developing renewable energy projects, but the number one obstacle that our industry faces is uncertainty, both market uncertainty and regulatory uncertainty. Like any business, what matters to us is the markets, and markets are driven by supply and demand. There is seemingly strong and growing demand for renewable energy from the American people, but this is not translating into predictable market demand. A national renewable or clean energy standard and predictable tax policy would really help fix this problem.

On the supply side, we face uncertainty on many fronts. Developing projects is a complicated process, and it is much more difficult on public lands, though the process can take twice as long as it would on private lands. This is reflected by the fact that under 2 percent of all wind farms in the U.S. Are sited on public lands.

My written testimony provides additional detail regarding the many issues we have encountered when trying to develop projects on public lands. And in particular, I would like to draw your attention to the increasing challenge we face in obtaining permits for wind projects.

A recent example, a major obstacle is the regulatory uncertainty created by the U.S. Fish and Wildlife 2011 Draft Eagle Conservation Plan Guidance, which I will refer to as the Eagle Guidance. The Eagle Guidance is a document intended to provide direction on implementation of the 2009 eagle permit final rules. When combined, the guidance and the rules create an eagle regulatory program that is complicated and completely unworkable for our industry.

Unfortunately, just fixing the Eagle Guidance won't solve the problem because the real problem lies in the underlying 2009 eagle rules. All of this uncertainty will make financing projects more difficult and cause buyers to shy away from signing purchase contracts.

I provide more detail in my written comments as to why the Eagle Guidance is so problematic, but I would like just to stress the following two issues. Firstly, the Eagle Guidance is, in fact, more stringent than the Endangered Species Act, despite the fact that neither the bald nor the golden eagle are currently endangered. Under the Eagle Guidance, permits for wind projects can only be obtained for 5 years at a time. This is a significant problem because wind and solar projects typically have a 20- to 30-year life and often need financing for 10 to 15 years. So having a permit that expires after 5 years will make financing difficult, if not impossible. By comparison, it is possible to obtain a permit under the Endangered Species Act for the life of a project, and that is what we need, for the life of the project.

Second, the 2011 Eagle Guidance focused only on wind, yet modern wind turbines are estimated to cause less than 1 percent of

eagle mortalities. We don't see the sense of singling wind out when the impact of modern wind farms on eagle populations is so small.

I would like to emphasize that these are not theoretical problems. My company has several wind projects that are currently being directly impacted by this issue, and we believe that the changes to the permitting process regarding eagles will ultimately impact the majority of our projects, creating delays and millions of dollars of additional cost, and that many of our developers are in a similar situation.

We further support reasonable protections for wildlife, but there does not appear to be any scientific justification for these onerous requirements, nor can it be demonstrated that the requirements will help eagles. How could they when we are only causing 1 percent of the problem?

So how can we fix the problem created by the eagle regulatory program? We believe that the most sensible way forward is to suspend the 2009 eagle rules and open a new rulemaking process. But this process will likely take another 2 to 3 years, and we can't put our business on hold for that long. Projects won't get built unless we can reduce the level of uncertainty. We need a bridge solution for the interim period. So our suggestion is that the Federal Advisory Committee recommendations be used.

In closing, I would like to reiterate our strong support for regulations to protect wildlife. RES Americas' business is developing and constructing renewable energy projects that benefit the environment. Renewable energy is all we do, and our corporate ethos is grounded in sustainability. So this isn't about cutting corners or trying to sidestep reasonable regulations, but the key word is "reasonable." Both conservation and renewable energy are critical, but there has to be a balance between the two agendas.

The American people want domestically produced, clean, renewable energy, and we want to supply it to them, but our energy faces market uncertainty at the national level, and we are thwarted by regulatory uncertainty during the development process. In the immediate term, Eagle Guidance combined with the land-based guidelines are significant obstacles to the industry. Renewable energy has the power to deliver, to drive investment, particularly in the manufacturing sector, and to create tens if not hundreds of thousands of jobs.

Chairman Hastings, Ranking Member Markey and the rest of Committee, I thank you for your interest in and attention to these issues, and I look forward to any assistance you may be able to provide.

The CHAIRMAN. Thank you very much for your testimony.

[The prepared statement of Ms. Reilly follows:]

Statement of Susan Reilly, President and CEO, Renewable Energy Systems Americas Inc.

Introduction

Chairman Hastings, Ranking Member Markey and members of the Committee, thank you for the opportunity to testify before the Committee on Natural Resources Oversight Hearing on "American Energy Initiative: Identifying Roadblocks to Wind and Solar Energy on Public Lands and Waters, Part II—The Wind and Solar Industry Perspective".

My name is Susan Reilly. I am the President and Chief Executive Officer of Renewable Energy Systems Americas Inc. ("RES"). RES is one of the leading renew-

able energy companies in the United States. For more than a decade, RES has developed, constructed, owned, and operated wind farms in North America. RES has constructed or is currently constructing more than 5,200 megawatts ("MW") of wind energy projects, representing some 10% of the operating wind farms in the United States, and has successfully developed more than 2,200 MW of renewable energy projects in the United States and Canada.

RES currently holds a development portfolio of approximately 10,000 MW and maintains ownership in 226 MW of operating projects. RES is headquartered in Broomfield, Colorado, with regional offices in Austin, Texas; Portland, Oregon; and Minneapolis, Minnesota. Our Canadian projects are managed from Montréal, Québec. RES is part of the RES Group, a leading renewable energy developer with offices and projects all worldwide.

RES is somewhat unique in the industry due to the range of activities in which it is involved. RES develops, designs, constructs, and operates renewable energy projects, and focuses not only on wind, but also on solar, biomass, and energy storage projects. This broad scope of activities means that RES has in-house expertise dedicated to understanding the requirements of regulatory agencies, state and local governments, investors, landowners, and other stakeholders, throughout project development, construction, and operation. As such, we are well-positioned to comment on the obstacles facing the development of renewable energy projects on public lands.

Uncertainty: The Greatest Roadblock to Renewable Energy Development on Public Lands

The Committee seeks an industry perspective regarding roadblocks to developing wind and solar energy on public lands. While there are many obstacles to developing renewable energy projects, the number one obstacle our industry faces is uncertainty, including both market uncertainty and regulatory uncertainty.

Like any business, the renewable energy markets are driven by supply and demand. On the demand side, the renewable energy industry faces market uncertainty due to the lack of a consistent national energy policy. Unlike many countries, the U.S. does not have a national renewable or clean energy standard, feed-in tariff or other mechanism for promoting renewable energy; and U.S. tax policy supporting renewable energy development has been inconsistent.

On the supply side, we face both legislative and regulatory uncertainty on many fronts. Developing renewable energy projects is a complicated process, and obtaining permits—the gating item for so many aspects of the development process, including financing—is now particularly challenging. Regulatory uncertainty introduced over the past twelve months—including uncertainty regarding required environmental studies, the "useful life" of permits and regulatory approvals, the risk of permit "reopeners", and potential requirement to employ undefined adaptive management—has had a profound negative effect on the development of renewable energy projects on public lands.

Of relevance to this hearing is the fact that the level of regulatory uncertainty is much higher when developing projects on public lands, where the process can take twice as long as it would on private lands. As a result, there is a strong incentive to avoid public lands, which is borne out by the fact that only 1.4% of wind farms are currently located on public lands.[1] Projects developed on public lands are subject to many more regulations; compounding the issue, these regulations often overlap and lack clarity as to which should take precedence.

In the immediate term, the biggest obstacle the renewable energy industry is facing when it comes to developing renewable energy projects on public (and private) lands is uncertainty relating to permitting, and in particular, the uncertainty created by the U.S. Fish & Wildlife Service's 2011 "Draft Eagle Conservation Plan Guidance", or "Eagle Guidance".

In summary, the key points I wish to convey regarding the roadblocks to developing renewable energy projects on public lands created by regulatory uncertainty are:

1. The process for developing renewable energy projects is complicated, and critical steps in successfully completing a project hinge on the permitting process.
2. Adding regulatory uncertainty to the permitting process makes project development more complicated, lengthy, and expensive. . .and therefore more risky.

[1] See Appendix I, "Comparison of the Percentage of Renewable Energy Generation Located on Public and Private Lands".

3. In the past ten months, the U.S. Fish and Wildlife Service (USFWS) and the Bureau of Land Management (BLM) have issued several documents that significantly increase the regulatory uncertainty associated with permitting wind energy projects.
   a. Among these documents, the Eagle Guidance is the most immediately problematic.
   b. The Eagle Guidance is unnecessarily onerous, and unfairly penalizes wind energy.
4. The Eagle Guidance creates a significant roadblock to developing renewable energy projects on public lands—RES has some proposed solutions.
5. The Eagle Guidance is the most immediate issue the industry faces, but it is not the only roadblock—there are other reasons why developing renewable energy projects on public lands is difficult.
6. DOI's "Fast-Track" process is welcome and well-intended, but needs to focus more on successful outcomes for wind projects.
7. This is not a theoretical issue—some of RES' projects have already been directly impacted by the roadblocks listed above.

1. RENEWABLE ENERGY PROJECT DEVELOPMENT IS A COMPLEX PROCESS

To appreciate the challenges that the wind energy industry faces for development on public lands, it may be helpful to understand the extensive process involved in developing, financing, constructing, and operating a wind energy facility.

In general, the early stage development process follows these steps:

- Identify areas with promising wind or solar resources, compatible land uses, power markets and access to transmission lines with sufficient capacity;
- Conduct preliminary siting and environmental screening, followed by initial environmental assessments and studies;
- Establish and maintain relationships with landowners, and negotiate wind or solar measurement agreements and/or land leases;
- Establish and maintain relationships with local stakeholders, including local government, public agencies, environmental groups, and community groups, among others;
- Commence preliminary project planning and design; and
- Commence permitting discussions and planning with regulators.

The next phase of development usually involves ensuring the project is able to interconnect to the grid and has access to sufficient transmission capacity, selecting turbines, and finalizing permits. These processes often progress simultaneously, which requires complex coordination among multiple parties.

The final, and most critical stage of development revolves around securing a power purchase agreement (PPA), and obtaining financing. The key point to understand is that this critical final phase hinges on the permitting process. This testimony will focus on obstacles to successfully completing the permitting process for renewable energy projects on public lands.

2. How Regulatory Uncertainty Affects Project Development

Regulatory Uncertainty Further Complicates a Challenging Process

As outlined above, successful development of a commercial-scale wind energy project requires coordination among multiple parties, including landowners, local governments, transmission providers, power purchasers, and investors.

Contractual arrangements among these parties may span 20–30 years, and each of these parties seeks assurances that the project will be constructed and operated in compliance with law during that timeframe. As such, regulatory uncertainty makes the challenging process of coordinating agreements among these parties even more difficult, and may even render it infeasible.

In addition, increased uncertainty, or risk, may also increase the cost of developing, constructing, or operating a project. In doing so, it will almost certainly decrease the profitability of a project and in some circumstances, it may worsen project economics to the point that a project cannot be justifiably developed.

Regulatory Uncertainty Causes Delays, Drives Away Investment Capital and Customers

One of the biggest factors affecting the cost of a wind project is the time required to obtain permitting and ensure regulatory compliance. Commercial-scale wind farms require investments of hundreds of millions of dollars. Currently, there is significant interest in investing in renewable energy, partly due to a belief that the sector is poised for significant growth, and partly because investors are concerned about sustainability.

However, wind energy projects ultimately compete with other investment opportunities for access to development and long-term capital. If development costs make a project uneconomic, or if permitting delays increase the time, cost and risk of projects, development capital will flow elsewhere—either to other projects or sectors.

Customers—which in the case of the renewable energy industry are often utilities—also seek projects with regulatory certainty, and will typically not sign power purchase agreements if a project's future is in doubt. As described in the case studies provided, RES has experienced firsthand the loss of customer interest due to regulatory uncertainty relating to eagles.

3. The USFWS and BLM Have Greatly Increased Regulatory Uncertainty with Their Recent Issuance of Multiple and Conflicting Directions

A large proportion of wind energy projects on public (and private) lands has been significantly delayed and thrown into regulatory uncertainty due to communications and policies recently issued by the BLM and the USFWS aimed at protecting eagles. Significantly, these policies were created without industry or stakeholder input, and seemingly without regard for the realities of renewable energy development. [2]

On February 18, 2011, the USFWS announced the availability for public comment of draft Eagle Conservation Plan Guidance ("Eagle Guidance").[3],[4] As described below, the Eagle Guidance creates significant regulatory uncertainty for wind energy project developers.

However, it is important to note that the Eagle Guidance is not the only source of regulatory uncertainty—the USFWS has also issued draft Land Based Wind Energy Guidelines and a White Paper on Avian and Bat Protection Plans, and the BLM has issued an Instruction Memorandum (IM) intended to provide direction to BLM Field Offices for complying with the Bald and Golden Eagle Protection Act, including the implementing regulations. These items are discussed in more detail in section 5 below.

Cumulatively, these actions by the USFWS and BLM have nearly paralyzed what was already a lengthy and difficult process for development on public lands. Moreover the detailed requirements within the aforementioned regulations have substantially increased the regulatory uncertainty of the permitting process.

a. Why the "Eagle Guidance" is Problematic

The Eagle Guidance introduces significant regulatory uncertainty that RES believes will severely impair wind energy development on public lands in the United States. The greatest source of uncertainty is that the fact that the process for obtaining an eagle "take" permit is not yet known, and may not be determined for months if not years.

Further compounding the uncertainty, the Eagle Guidance sets an extremely low threshold for projects that will require an eagle "take" permit[5]. To this end, it is worth noting that the Eagle Guidelines are more stringent that the Endangered Species Act, despite the fact that neither bald nor golden eagles are currently considered endangered.

RES has no doubt that cumulatively, the new regulatory program—as drafted—will:

(i) Provide little to no certainty that adherence to the Eagle Guidance will enable projects to avoid regulatory "surprises" imposed by the USFWS later in the development and operation of the facility;

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[2] This is despite the fact that the Federal Advisory Committee (FAC) provided substantial input to the DOI on ways to balance renewable energy development and protection for wildlife. The Federal Advisory Committee (FAC) was created by the Department of Interior for the specific purpose of advising the Secretary on wind energy guidelines. The FAC included representatives from state wildlife agencies, conservation organizations, the USFWS and the wind industry. The FAC met regularly for more than two and a half years and produced a set of recommendations that relied on peer-reviewed, sound science. The FAC submitted these broadly agreed upon recommendations to Secretary Salazar in March 2010.

[3] 76 Fed. Reg. 9529 (Feb. 18, 2011). *See also* U.S. Fish and Wildlife Service, "Draft Eagle Conservation Plan Guidance" (Jan. 2011), available at http://www.fws.gov/windenergy/docs/ECP_draft_guidance_2_10_final_clean_omb.pdf

[4] RES, the American Wind Energy Association ("AWEA") and many other interested parties filed detailed comments on the Eagle Guidance. I encourage the members of this Committee to consider the detailed comments filed by industry participants.

[5] In addition to very low thresholds for requiring a "take" permit, the draft Eagle Guidance defines "take" as including "disturbance"—this is problematic, because a lot of things count as "disturbance", and if you "take" a golden eagle, it may trigger a permit violation that causes the whole project to be shut down. Such an onerous restriction makes it exceedingly difficult for the wind industry to operate, much less continue to grow.

(ii) Significantly, and unjustifiably, increase the time and costs required to develop a wind energy facility, thereby increasing development risk/uncertainty;

(iii) As a result of (i) and (ii) above, create significant barriers to obtaining acceptable project financing.

For example, the Eagle Guidance:

- Imposes a five-year permit term for eagle "take" permits, which is far too short to cover the 20–30 year life of a typical wind energy project. As a result, an eagle take permit for a project would need to be renewed multiple times over the life of the project.

This is problematic because it creates regulatory and compliance uncertainty that could make it impossible for projects to secure long-term financing, given the risk that the project's permit might not be renewed.

Permit renewal could also require environmental analyses under NEPA, which would require the investment of substantial time and money by both the USFWS and wind project operators. In fact, this could trigger NEPA for wind projects on public *and* private land.

- Provides that after a project is permitted, project operators may be required to modify operations or introduce additional mitigation measures with no certainty that any such requirements will be reasonable, practical, economical or technically feasible.

This is problematic because such modifications or mitigation may abrogate existing contractual requirements, thereby putting a project into default. As such, this has the potential to render project financing infeasible.

- Provides no "grandfathering" or phase-in period for projects that are in the middle of the permitting process or are already operational.

This is problematic because it may abrogate existing contractual requirements and put projects into default.

- Requires unjustifiably lengthy pre-construction surveys in addition to lengthy NEPA and permitting processes, and categorizes sites as risky before proper analysis has been performed.

This is problematic because it causes delays, greatly increases costs, and may drive away investors.

b. The Eagle Guidance is Unreasonably Onerous and Unfair to Wind

Importantly, the Eagle Guidance and the 2010 BLM IM appear to have been issued without any regard for the magnitude of impact they would have on the renewable energy industry. The negative effects of the new regulatory program on renewable energy development are appreciably disproportionate to any anticipated benefit on eagle populations.

As described in AWEA's filed comments on the Eagle Guidance, Tetra Tech, Inc. (a prominent environmental and wildlife consulting company) reviewed all known eagle mortality data sources and found that 1% or less of all documented eagle fatalities caused by human activity are attributable to modern wind energy facilities.[6]

For example, Tetra Tech, Inc. found that the leading human causes of eagle mortality are:

- electrocutions on power lines (with a significant portion of those occurring at distribution lines)—50%
- direct and indirect poisoning—13%
- shooting and trapping—7%
- vehicle strikes—6%

Disproportionate Burden on Wind Industry

Despite the fact that wind energy accounts for 1% or less of human-caused eagle fatalities, the USFWS has proposed eagle-related project criteria, permitting procedures, and mitigation measures that are specific to the wind energy industry while failing to propose similar regulatory measures for other industries and practices resulting in significantly greater eagle take. Simply put, regulations comparable to the Eagle Guidelines have not been proposed for other industries or sources of eagle mortality.

This approach demonstrates a lack of perspective and proportionality, and it is also inconsistent with the stated renewable energy objectives of the Administration. Moreover, it ignores the fact that increased deployment of renewable energy re-

[6] This analysis excludes data from a few specific projects (such as those in the Altamont region) that utilize obsolete equipment, were constructed many years ago, and where unusual conditions exist.

sources can help lessen our impact on climate change, which the USFWS itself has called one of the greatest threats to our nation's environment and wildlife.[7]

4. Proposed Solutions to the Eagle Guidance Problem

RES suggests the following steps to address the significant roadblock to renewable energy development on public lands created by the Eagle Guidance:

- Request that the DOI suspend the Eagle Guidance and the associated regulatory program that began in 2009. RES suggests that the USFWS open a new formal rulemaking that is open to the public. New regulations would be developed in cooperation with the wind and solar industries to sensibly address permitting under the Bald and Golden Eagle Protection Act.
- Direct USFWS to work with industry to develop a permit program that imposes regulatory requirements that are proportional to the impact of the wind energy industry on eagle populations. Such a program must include certain core elements necessary for successful project development, including:
  (1) Timely, clear and efficient processes for obtaining a permit;
  (2) Permits for the life of a facility;
  (3) "No surprises" assurances for the life of the project;
  (4) Phase-in periods for projects currently under development; and
  (5) "Grandfathering" for operating facilities.

As explained above in 3.a., many of these permit provisions are found in other regulatory regimes like the Endangered Species Act, which is considered the "gold standard" for regulation of impacts on protected species.

- Beginning immediately and continuing throughout the period while new industry-specific eagle regulations are being developed, provide the renewable energy industry with written assurances that adherence to the Federal Advisory Committee (FAC) Recommendations is sufficient for compliance with the Bald and Golden Eagle Protection Act.

Use of the FAC Recommendations as a "bridge" would provide an urgently needed solution by removing the current significant regulatory uncertainty and permitting delays that have impacted the development, financing and construction of wind energy projects on public lands. The FAC Recommendations would also seem to be a strong foundation upon which to develop a new eagle regulatory program.

5. The Eagle Guidance isn't the Only Problem

The Eagle Guidance illustrates a major impediment to renewable energy development on public lands, but it is just one of several recent regulations promulgated by BLM and USFWS that contribute to the existing level of regulatory uncertainty.

July 9, 2010—BLM's Instruction Memorandum 2010–156 and August 3, 2010—USFWS' White Paper on Avian Protection Plans (APPs)

The new approach to eagle regulation began when the BLM issued Instructional Memorandum 2010–156 on July 9, 2010 (the "2010 BLM IM"). The purpose of the 2010 BLM IM was to provide direction to BLM Field Offices for complying with the Bald and Golden Eagle Protection Act, including the implementing regulations, for projects *on public lands.*

The 2010 BLM IM primarily addressed golden eagles and requires USFWS approval of wind and solar projects prior to BLM issuing a Record of Decision. Specifically, the IM declared that if a proposed project has the potential to impact golden eagles or their habitat, an APP is required as a condition of the right-of-way grant.

The introduction of this policy created significant uncertainty for renewable energy on public and private lands, including two RES projects as further documented below. Projects which were on track to begin construction in 2010 or 2011 were delayed, thereby rendering them unable to take advantage of grant funds available under American Reinvestment and Recovery Act (ARRA). Moreover, some USFWS field staff began to impose the new requirements on projects on private land.

On August 3, 2010, the Service issued a white paper on the development Avian Protection Plans for renewable energy facilities.[8] The white paper attempts to provide considerations for APPs as required by the BLM's July 9, 2010 Instruction Memorandum while the national APP guidance and template are under development.

As wind developers began to work with USFWS and BLM staff to work towards mutually acceptable APPs, the USFWS issued the 2011 Eagle Guidance, which further changed the regulatory environment.

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[7] USFWS Strategic Plan for Responding to Accelerating Climate Change, September, 2010.

[8] *See* Memorandum from Director, Fish and Wildlife Service, to Service Directorate, regarding "Service White Paper Providing Guidance for the Development of Project-Specific Avian and Bat Protection Plans for Renewable Energy Facilities" (Aug. 3, 2010).

February 18, 2011—USFWS' Land Based Guidelines

Simultaneously with the USFWS' issuance of the Eagle Guidance, USFWS announced the availability for public comment of another layer of regulatory requirements in the form of draft Land-Based Wind Energy Guidelines ("Land-Based Guidelines").[9] The Land-Based Guidelines were intended to provide developers and agency staff with guidelines for selecting sites to avoid and minimize negative effects to fish, wildlife, and their habitats resulting from construction, operation, and maintenance of land-based, wind energy facilities.

The NEPA Process

On public lands, the "gating issue" for the development of renewable energy is completion of the National Environmental Policy Act ("NEPA") process and obtaining appropriate federal rights-of-way. While the NEPA process is not new, many BLM field offices have been ill-prepared to manage the multitude of renewable energy right-of-way applications submitted over the past ten years. NEPA regulations prohibit project proponents from preparing their own environmental analysis and project proponents are invariably subject to the cost of paying for their internal staff, BLM staff time, and BLM's third-party consultants.

These challenges combine to create an unbalanced risk-benefit profile to those involved in renewable energy development on public lands, relative to projects on private land. The Eagle Guidance—as proposed—will only exacerbate these BLM resource issues by creating a "federal nexus" for all wind projects, regardless of whether they are sited on public or private lands. Dedication of greater resources to BLM state, district and field offices is sorely needed to address these issues.

6. Additional Comments on "Fast-Track" Projects

RES supports the renewable energy goals annunciated in the Energy Policy Act of 2005 and by Secretary Salazar. In particular, the 2009 Department of Interior Renewable Energy Fast-Track project list was a well-founded effort by the BLM to foster the economic development goals associated with ARRA through renewable energy development.

As BLM Director Bob Abbey testified on May 13th, the DOI Fast-Track process completed permitting of nine solar projects, but only one wind project in the 2010 calendar year. While we commend the DOI and BLM for their efforts, there is substantial opportunity for improvement particularly with regard to wind energy development.

In RES' experience, the roadblocks described in this testimony have played a significant role in the failure of fast-tracked (and other) wind projects to successfully complete the permitting process. RES therefore submits that in order to reduce the roadblocks to renewable energy development on public lands, there must be a strong federal commitment to *completing* renewable energy projects on public lands.

Such a commitment would involve not only ensuring a streamlined permitting process, but providing regulatory consistency and certainty that is necessary for all phases of renewable energy development, including project financing. Just as renewable energy developers partner with local governments, land owners and other stakeholders during the entire life of a project on private lands, renewable energy development on public lands needs cooperation and coordination with applicable federal agencies that will be sustained for the life of the project.

This would include directives to all applicable federal agencies prioritizing renewable energy development and imposing appropriate perspective and proportionality on conflicting regulatory programs. Further, the industry would benefit from federal leadership in identifying and prioritizing lands for wind and solar energy generation and transmission corridors.

RES suggests the active engagement of top leadership within the DOI, BLM, and USFWS to seek efficient and effective approaches to permitting that will allow projects to be developed, permitted, financed, constructed and placed into operation on public lands.

7. Case Studies: RES Americas' Projects

The roadblocks I have described are not theoretical. RES is developing projects on public *and private* lands that are grappling with inconsistent permitting pathways and the lack of compliance certainty.

[9] As with the Eagle Guidance, RES, AWEA, and many other interested parties filed detailed comments on the Land-Based Guidelines. I encourage the members of this Committee to consider the detailed comments filed by industry participants.

Granite Mountain Wind Project (CA)

A case in point is our 60 megawatt Granite Mountain Project located on BLM lands in San Bernardino County, California, which has been significantly impeded by these roadblocks. Granite Mountain was put on the DOI 2009 Fast-Track project list, and RES was encouraged to hasten development of the project so that it could qualify for ARRA/Treasury Grant funding.

RES has been developing the Granite Mountain project for more than 8 years and has spent more than $6.1M in developing the project.[10] The original right-of-way for wind testing and monitoring was executed by RES in July 2003. RES filed a right of way application for wind development with the BLM in December 2006. The NEPA process was started in earnest in 2007.

It is important to note that this project has many of the key ingredients of a successful development, including an executed power purchase agreement, an executed interconnection agreement, and a completed Draft Environmental Impact Statement. The sole missing development asset required to finance the project RES was a Record of Decision from BLM. . .which was scheduled to be received by December 2010.

However, in late summer 2010, we were notified by the USFWS of a concern regarding potential golden eagle issues. The notification came as a direct result of BLM's July 9, 2010 Instructional Memorandum. Given the new USFWS eagle regulatory program and BLM policies, this left RES in a state of regulatory and permitting uncertainty as to how to advance the project, comply with the new eagle regulations, and BLM policy.

As a result, this project did not qualify for the Treasury Grant and is clearly a missed opportunity for RES and for economic stimulus and job creation.

While RES is working with USFWS and BLM to conduct additional eagle surveys intended to support an ABPP and the project's Final EIS, the construction of the project has been set back by a minimum of twelve months and development costs have increased on the order of hundreds of thousands of dollars. The February 2011 Eagle Guidance casts further uncertainty on the project and will likely result in further delays and additional costs.

Rock Creek Wind Project (OR)

The USFWS' new eagle program has impacted project development beyond just public lands. Throughout the spring of 2010, RES negotiated the sale of a 400 MW wind energy project with a regulated utility in the Pacific Northwest. The project is/was sited entirely on private lands and is adjacent to multiple operating wind projects. The investor-owned utility had requested regulatory hearings and petitioned its regulatory authorities to review the transaction.

Shortly after issuance of the BLM's July 2010 Instruction Memorandum, local USFWS field offices began to provide feedback to developers regarding their projects on public as well as private lands. This feedback included the need for additional eagle surveys as well as the prospect that proposed projects—if constructed—would be at risk under the Bald and Golden Eagle Protection Act.

Given the concerns raised by USFWS as well as the uncertainty regarding the outcome of the USFWS dialogue, the utility withdrew its petition to acquire the project and negotiations of the transaction were cancelled. RES continues to develop the Rock Creek site, albeit at significantly greater risk and expense.

Both the Granite Mountain project and the Rock Creek project demonstrate that these roadblocks to development have a profound and demonstrable impact on renewable energy development on both public and private lands. It is critical that the underlying causes of these roadblocks be addressed as quickly and as efficiently as possible so as not to result in further missed opportunities for renewable energy development in the United States.

Conclusion

RES has been and continues to be a strong advocate for responsible development of renewable energy projects on public and private lands. Renewable energy development, construction and operation is our focus, and our corporate ethos is grounded in sustainability and environmental responsibility. We have enjoyed a cooperative relationship with the federal agencies that administer public lands and look forward to improving that relationship in the future.

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[10] In stark contrast to the 8 years (and counting) needed to develop the Granite Mountain Wind Farm on public lands, consider that RES is about to complete construction of a 227 MW project on private land in Oklahoma that started the permitting and development process in late 2008. That said, developing projects on private land is in no sense "easy", and involves complex permitting and the involvement of multiple governmental entities and stakeholder groups.

We appreciate the tireless efforts of the BLM and USFWS field office staff and appreciate their efforts to process the multitude of applications for right-of-way grants for renewable energy projects on federal land as well to comply with regulations promulgated from Washington, DC.

But there are currently significant roadblocks to renewable energy development on public lands that should be rectified before further delay and uncertainty impedes the industry. In RES' experience, the three biggest roadblocks to development of renewable energy projects on public lands are that:

(i) There is no "clear path" for permitting development on public lands;
(ii) Issues and concerns in the permitting process lack perspective and proportionality; and
(iii) Completion of development requires dedicated BLM resources and direction that is currently lacking.

Collectively, these three problems can be summarized as "regulatory uncertainty", which as explained above, is anathema to project developers and investors. The cumulative impact of this regulatory uncertainty on the wind industry is severe. In the case of the Eagle Guidance and the Land Based Guidelines, AWEA estimates that these USFWS policies jeopardize:

- More than **34,000 megawatts** of wind power projects;
- More than **27,500 jobs**;
- **$103 million** in potential landowner revenue per annum; and
- **$68 billion** in investment.

On behalf of RES, I would like to thank Chairman Hastings, Ranking Member Markey and members of the Committee for the opportunity to testify in the Committee on Natural Resources Oversight Hearing on "American Energy Initiative: Identifying Roadblocks to Wind and Solar Energy on Public Lands and Waters, Part II—The Wind and Solar Industry Perspective".

Appendix I: Comparison of the Percentage of Renewable Energy Generation Located on Public and Private Lands

RES is currently pursuing rights-of-way for the development of renewable energy projects on public lands, but such projects are a small portion of our entire development portfolio. In fact, other than a re-powering project over a decade ago, RES has never completed the development and construction of a renewable energy project on public lands. Only 9% of RES' current development portfolio is on public lands. I submit that RES' experience is not unique.

As the tables below demonstrate, only 1.4% of all installed wind capacity and 2.1% of all wind capacity under construction in the United States from any renewable energy developer is on public lands. These numbers dramatically illustrate that public lands is clearly a less attractive option for renewable energy developers.

NATIONAL FIGURES FOR RES

TOTAL RES MW UNDER DEVELOPMENT IN THE UNITED STATES

	CAPACITY (MW)	PERCENTAGE
PRIVATE LANDS	6,933	91.0
PUBLIC LANDS	683	9.0
TOTAL	7,616	100

National Figures for all developers [11]

Total MW Under Construction in the United States in 2010

	Capacity (MW)	Percentage
Private Lands	5,888 MW	97.9%
Public Lands	128 MW	2.1%
Total	6,016 MW	100%

Total Installed Wind Energy in the United States

	Capacity (MW)	Percentage
Private Lands	39,621 MW	98.6%
Public Lands	560 MW	1.4%
Total	40,181 MW	100%

STATE Status (Land Ownership)	Project Size (MW)	Project Impacted by USFWS Eagle Conservation Plan Document	Additional 2011 Development Costs Incurred from USFWS Eagle Conservation Plan Document	Federal Government Entities Involved
ARIZONA				
Arizona #1 (Private & State Land)	150	Yes. Documented GOLDEN eagle NEST and activity within 10 mile proximity of project area.	$50,000	USFWS - Region 2, Phoenix Field Office
CALIFORNIA				
California #1 (BLM and Private Land)	60	Yes. Documented GOLDEN eagle NEST and activity within 10 mile proximity of project area.	$294,000	USFWS - Region 8, Ventura Ecological Services Office. BLM - Barstow Field Office, Desert District Office, Sacramento State Office
California #2 (BLM Land)	90	Yes. Very limited documented GOLDEN eagle use activity within 10 mile proximity of project area	$110,000	USFWS - Region 8, Carlsbad Fish and Wildlife Office BLM - El Centro Field Office, Sacramento State Office
COLORADO				
Colorado #1 (Private & State Land)	80	Yes. Documented GOLDEN eagle NEST within 10 mile proximity and use activity in project area. (2011 studies have NOT been initiated to date)	$0	USFWS - Region 6, Colorado Field Office
Colorado #2 (Private Land)	200	Yes. Documented GOLDEN eagle NEST within 10 mile proximity and use activity in project area	$87,000	USFWS - Region 6, Colorado Field Office
Colorado #3 (Private Land)	250	Yes. Documented GOLDEN eagle NEST within 10 mile proximity and use activity in project area. (additional 2011 monitoring will likely be required)	$30,000	USFWS - Region 6, Colorado Field Office
IDAHO				
Idaho #1 (BLM, Private, and State Land)	400	Yes. Documented GOLDEN eagle NEST within 10 mile proximity and use activity in project area.	$500,000	USFWS - Region 1, Idaho Fish and Wildlife Office BLM - Jarbidge Field Office, Twin Falls County, Idaho Wells Field Office, Elko County, Nevada
Michigan				
Michigan #1 (Private Land)	250	Yes. Documented BALD eagle NEST within 10 mile proximity and use activity in project area	$64,000	USFWS - Region 3, East Lansing Field Office
Michigan #2 (Private Land)	250	Yes. Documented BALD eagle NEST within 10 mile proximity and use activity in project area. (2011 studies have NOT been initiated to date)	$0	USFWS - Region 3, East Lansing Field Office
MINNESOTA				
Minnesota #1 (Private Land)	300	Yes. Documented BALD and GOLDEN eagle use activity in the project area. (2011 studies have NOT been initiated to date)	$0	USFWS - Region 3, Twin Cities Field Office
OKLAHOMA				
Oklahoma #1 (Private Land)	200	Yes. Documented BALD eagle use activity in the project area	$225,000	USFWS - Region 2, Tulsa Field Office
OREGON				
Oregon #1 (Private Land)	400	Yes. Documented GOLDEN eagle NESTS within 10 mile proximity and use activity in project area.	$350,000	USFWS - Region 1, Bend Field Office
Oregon #2 (Private Land)	320	Yes. Documented GOLDEN eagle use activity within	$62,000	USFWS - Region 1, Bend Field Office
TEXAS				
Texas #1 (Private Land)	150	Yes. Documented BALD eagle use activity within 10 mile proximity of project area	$156,000	USFWS - Region 2, Corpus Christi Field Office
TOTAL MWs IMPACTED	3,070	**2011 TOTAL INCREASED DEVELOPMENT COSTS**	$1,937,000	

The CHAIRMAN. I now recognize Mr. Gordon for your testimony. You are recognized for 5 minutes.

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[11] Source: AWEA's 2010 U.S. Wind Industry Market Report.

STATEMENT OF JAMES S. GORDON, PRESIDENT, CAPE WIND ASSOCIATES, LLC

Mr. GORDON. Thank you, Chairman Hastings and Congressman Markey. My name is Jim Gordon. I am President of Cape Wind Associates and Energy Management, Inc., which is the developer of Cape Wind. I understand how a diversified energy portfolio can increase our Nation's energy security and independence, create new jobs, and improve our environment, because for the last 35 years, our company has successfully developed a number of energy projects that have contributed to those important objectives.

Eleven years ago, our company embarked on developing America's first offshore wind farm. Coming from the New England area, it was always a truism that New England has no indigenous energy resources; we have no coal, oil or natural gas. But I am here today to tell you that we have an abundant offshore wind resource right off our coast that we can harness to create new jobs, increase energy independence and create a healthier environment.

Over the last 11 years, our company worked with 17 Federal and State agencies to permit the Cape Wind project. We are proud of the fact that we helped to evolve the regulatory framework for offshore wind in the United States. And just a month ago, Secretary Salazar at the Charlestown Navy Yard, against the backdrop of the USS Constitution, announced that Cape Wind was fully permitted and gave the green light for construction. That was a very proud moment for our company. We have invested over $50 million to develop this project to date, and every penny of that money has come from the senior managers of our company.

Unfortunately, because of the ability of a small group of project opponents that file suit after suit in either regulatory forums or judicial forums, the project has been delayed. We have won 15 of those decisions. Every single regulatory or judicial system we have won. We were working very closely with the Department of Energy, and for over a year we have been working to try to obtain a loan guarantee. And a government help through the Department of Energy loan guarantee is going to be critically important for commercializing the first of a kind of this innovative project.

I can tell you that these incentives are very important because currently our company is building two of the largest biomass projects in the United States. Each one of those companies has over 400 construction workers on the site, working over a 33-month period, and will create over 500 permanent jobs in the forestry industry. Those projects relied on the crucial investment tax credit and 30 percent cash grant that was rolled out through the Obama Administration.

Right now I would ask your panel to consider a couple of important policy recommendations to help expedite the development of renewable energy, which all of us in this room and on this panel would like. Number one, there needs to be a statutory timeframe for permitting these projects. It can't be endless and open-ended where sophisticated parties can manipulate and abuse the process.

Number two, it is critically important that we have a consolidated and expedited judicial process.

And number three, the incentives that are being developed to incentivize renewable energy projects need to be consistent and co-

incide with the development cycles and the construction period cycles of these projects. For instance, in 2012, the wind incentives end, but the first offshore wind project was only permitted, finally permitted, about a month ago.

With these programs in place, I think we will be able to increase the penetration of renewable energy in this country. Thank you.

The CHAIRMAN. Thank you very much, Mr. Gordon.

[The prepared statement of Mr. Gordon follows:]

Statement of James S. Gordon, President, Cape Wind Associates, LLC

Introduction

I appreciate this opportunity to address the Committee. My name is James S. Gordon, President of Cape Wind Associates, LLC ("Cape Wind"). For the last eleven years, Cape Wind has been developing the Nation's first offshore wind generation project. The project's nearest point of land will be approximately 5 miles off the coast of Massachusetts. Most of the turbines will be 6—10 miles from the nearest shore. It would generate 468 MW of clean and renewable energy, with no fuel requirements and no air emissions. This amount would represent approximately 75% of the annual electricity needs of Cape Cod and the Islands of Martha's Vineyard and Nantucket. The Cape Wind project would be located on a shoal that is outside of the shipping lanes and would impose no restrictions on current uses of the area. Cape Wind enjoys strong support of environmental, consumer advocacy and labor groups and the overwhelming majority of Massachusetts voters, and has a grassroots support organization with over 4,000 members. However, it has drawn the opposition of a few wealthy landowners who will be able to see it in the distance.

The principals of our company have been in the energy business for more than thirty years. We have developed and operated some of the most efficient gas-fired plants operating in the United States and we are intimately familiar with federal and state licensing processes for electric power plants. In direct response to mandates of the New England States for renewable energy, we are now focusing upon offshore wind energy development, which is uniquely well-situated to serve the population centers of the East coast. Offshore wind energy technology has now advanced to the point where it is both proven and reliable and can play a much more meaningful role in our National supply mix. A study commissioned by the Department of Energy entitled "A National Offshore Wind Strategy" estimates that America's offshore wind could generate 4,150 GW, approximately four times the current generating capacity of the Nation. However, if we are to realize the potential of offshore wind energy, we need to ensure that our National energy and environmental policies are implemented in a consistent and timely manner. We know that this technology works. Although Cape Wind will be the first offshore wind farm proposed in the United States, many projects are operating successfully in Europe, and the Chinese, after starting much later than us, have already now deployed their first offshore project.

1. Federal Regulatory Process

The Federal and state regulatory process for offshore renewable energy is thorough and comprehensive, but often not coordinated. One fundamental defect is that it lacks any legal requirements that would limit the duration of the review period. As a result, with no required end point, opponents can use regulatory stalling and delay tactics to try to financially cripple even a project that meets all statutory standards and serves Federal and State policy objectives.

Cape Wind submitted its Federal permit application to the U.S. Army Corps of Engineers ("USACE") in November of 2001, pursuant to section 10 of the Rivers and Harbors Act, which governs the placement of structures in Federal waters. The Corps considered the project for several years and issued a Draft EIS in November, 2004. However, pursuant to the Energy Policy Act of 2005, The Department of the Interior, (MMS now BOEMRE) became the lead federal agency and essentially the process had to begin anew. BOEMRE conducted its own multi-year extensive review processes and issued a highly positive Environmental Impact Statement in January of 2009. The Record of Decision was not issued by DOI for another 15 months, in April 2010. Secretary Salazar then issued the first lease for OCS renewable energy to Cape Wind in October of 2010 and BOEMRE approved our Construction and Operation Plan (the "COP") in April 2011. The project thus has been undergoing extensive regulatory and public scrutiny for 10 years, and has now received all major permits and approvals.

The review of Cape Wind's application was a process that has included the active participation of 17 Federal and State participating agencies and afforded exceptional opportunities for public involvement. During this process, an exhaustive analysis of all potential impacts of the project was conducted, including studies of issues including potential impacts upon existing uses, environmental issues, including potential impacts to fish, birds threatened species and marine mammals, protection of Native American rights, project aesthetics, cost implications and the energy needs of the public. **State Regulatory Process**

In addition, there have been extensive state regulatory proceedings. In September of 2002, Cape Wind petitioned the Massachusetts Energy Facilities Siting Board ("MEFSB") for authorization of its facilities located within Massachusetts. After an exhaustive review, including 20 days of expert testimony, on May 10, 2005, the MEFSB approved Cape Wind's petition based upon its findings that Cape Wind's energy is needed (i) to reliably meet the growing need for power in the region; (ii) to stabilize prices to electric rate payers; and (iii) to offset air emissions from fossil generators. Moreover, in 2009 the MEFSB issued a Certificate of Environmental Impact and Public Interest to Cape Wind and such grant has been upheld on appeal by the Massachusetts Supreme Judicial Court. Most recently, in November of 2010, the Massachusetts Department of Public Utilities approved Cape Wind's long-term power sales agreement with National Grid, finding that "it is abundantly clear that the Cape Wind facility offers significant benefits that are not currently available from any other renewable resource" and that the "benefits outweigh the costs of the project." D.P.U. 10–54.

2. Judicial Appeals.

Along the way, opponents sought to appeal regulatory decisions to the federal or state courts more than ten times, and Cape Wind has won every case to date. Notwithstanding this extensive review and analysis and the appeals we have already won, the project now faces multiple appeals of its federal approvals brought by the same small, but well-funded, special interest group that has sought to delay the review process at every turn. In light of the past and continuing delays that we have experienced, we offer the following three policy suggestions for your consideration.

3. Policy Recommendations

A. Limit Time Periods of Agency Review.

First, national policy objectives would be far better served if the environmental review of proposed renewable energy facilities were conducted in a more timely manner, perhaps pursuant to specific statutory timeframes that prevent delay tactics from financially crippling important and worthy projects. We recognize and applaud the progress that has been made by BOEMRE (including its "Smart from the state" initiative), but firm deadlines applicable to all federal agencies would provide certainty to the review schedule. We reference for example the energy facility siting acts that have been enacted by many of the New England states, which provide that that a thorough environmental review of proposed energy facilities is to be conducted within a statutorily limited time frame, which is limited to 12 months by Massachusetts law.

B. Consolidate and Expedite Judicial Review.

Second, renewable energy projects often require multiple federal approvals, each of which is subject to judicial review, processes which can consume additional years and substantial funds. Renewable energy projects that require federal approvals would be expedited significantly if all such reviews were consolidated in a single appellate proceeding in which the court is encouraged to expedite its decision.

There is ample precedent for such a provision in recent energy legislation. The Alaska Natural Gas Pipeline Act of 2003 at section 720e provides for expedited consideration and exclusive review in the D.C. Circuit of any order or action of any federal agency or any challenge under NEPA related to the authorities in the Act. Similarly, the Energy Policy Act of 2005, section 313, provides for development of a single consolidated record and for exclusive jurisdiction and expedited consideration by the D.C. Circuit Court of Appeals to review any Federal agency or state agency actions pursuant to Federal law relating to construction of certain natural gas facilities.

If Congress is serious about encouraging the development of renewable energy resources, streamlining the judicial review process would be a most effective mechanism for getting such facilities on line, and would do so without modifying any substantive rights of review by any aggrieved party.

C. Coordinate Duration of Investment Incentives with Permit Review Timelines.

Third, Congress should address the fact that federal investment incentives for long lead time renewable energy projects (such as offshore wind, geothermal and biomass projects) are typically put in place for time periods far shorter than the time required for permitting, environmental review and construction. For example, current provisions for the Investment tax Credit ("ITC"), the Production Tax Credit ("PTC") and the Section 1705 Federal loan guarantee program are set to expire in 2012 and 2011, respectively. These time frames are just too short to develop and construct an offshore wind, geothermal or biomass project.

The result is an untenable situation where investors in proposed projects must proceed without knowing whether crucial incentives will still be in effect when such projects are placed in service. These incentive durations may be workable for projects that take only one or two years to develop, but they are not workable for types of projects that take much longer (which, by their nature, provide greater economic stimulus and longer-term employment). To be effective, tax and other incentives for long lead time projects must be in place for at least 5 years. We thus suggest a long-term extension for offshore wind and other long-lead renewable projects, for both the ITC (to at least 2016) and the DOE loan guarantee program, in order to provide a more certain and dependable signal to the investment community.

With these changes, I am certain that America can catch and pass the current world leaders in offshore wind development, with massive reductions in oil imports and emissions.

Thank you for your consideration.

[The response to questions submitted for the record by Mr. Gordon follows:]

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August 15, 2011

Chairman Doc Hastings
Committee on Natural Resources
1324 Longworth House Office Building
Washington, DC 20515

Dear Chairman Hastings:

Thank you for inviting me to appear at the Committee on Natural Resources oversight hearing June 1, 2011 on the "American Energy Initiative: Identifying Roadblocks to Wind and Solar Energy on Public Lands and Waters: Part II – The Wind and Solar Energy Perspective." Below are my responses to the follow-up questions for the record that you have posed.

1. Throughout the very lengthy federal, state and local permitting process there were many delays, some taking years. Many of these delays related to the extraordinary public notice and comment procedures implemented by agencies reviewing the Cape Wind project, particularly regarding the preparation of an Environmental Impact Statement. We were generally given an explanation for each of these delays, some of which were for months at a time. Opponents of projects such as Cape Wind regularly request extensions of time for public comment and other participation, and these requests are usually granted. Taken individually, each request would not have a material effect on the project timeline, but taken together, they have a very serious delaying effect. Opponents know this and therefore regularly request extensions and delays, often raising new issues at a late date that have never been raised previously. Permitting was also slowed significantly because of the action of the Congress in 2005. The lengthy process undertaken by the U.S. Army Corps of Engineers, which began in 2001, had to be almost entirely repeated by the Department of the Interior, pursuant to section 388 of the Energy Policy Act of 2005. This section established a new regulatory scheme for offshore energy permitting that had to be created anew by the agency. Generally, the DOI informed Cape Wind of the reasons for the various procedures and delays and kept Cape Wind advised of the steps that had to be taken in the permitting process.

2. The permitting process for Cape Wind is not an efficient and effective way to handle offshore wind permitting in the future. Now that the process is firmly established at DOI, specific time frames should be imposed on all aspects of the process to guarantee more predictable and prompt decision-making.

3. Specific limited time periods for agency review could have expedited the BOEMRE permitting process by at least 2.5 years. Equally important, specific time periods for judicial review, and consolidation of all federal appeals relating to the permitting process, which Cape Wind must now navigate, could also expedite the entire process by approximately 2 years. I attach a specific legislative proposal that would implement this suggestion.

I remain available to support your continuing efforts to encourage efficient and effective federal permitting for offshore wind projects.

Sincerely,

Jim Gordon

Jim Gordon
President

The CHAIRMAN. Next, Mr. Jim Lanard, President of the Offshore Wind Development Coalition.

STATEMENT OF JIM LANARD, PRESIDENT, OFFSHORE WIND DEVELOPMENT COALITION

Mr. LANARD. Thank you, Mr. Chairman, Ranking Member Markey. My name is Jim Lanard, and I am President of the Offshore Wind Development Coalition. We represent offshore wind developers and the entire supply chain that will be involved in creating jobs and manufacturing opportunities here in the United States in the offshore wind industry.

The technology for offshore wind is not new. In fact, offshore wind has been operating successfully in Europe since 1991. And the European Wind Energy Association projects that by the year 2030, there will be 215,000 people working in the offshore wind industry, more than those workers that are working on the land-based side in Europe.

Now China is in the mix. They are operating 102 megawatts of offshore wind energy right now, with more than 2,300 megawatts under construction.

To put it very bluntly, the United States is losing the intellectual property race for creating a new industry for the offshore wind industry here in the United States. And I will give you just one very blatant example of that. We have a U.S.-owned company based in Seattle, Washington, that is developing plans for a floating turbine, offshore turbine, foundation. They had no place to go in the United States for funding to prepare this demonstration project, but the country of Portugal offered them their shipyard and their financial support, and right now they are building a floating foundation in Portugal shipyard and will be beta testing that off the Portuguese coast this summer. The United States is losing the intellectual property rights. We need to catch up.

Now, other than Cape Wind, the offshore wind industry started really in 2005 when President Bush passed after you guys enacted the Energy Policy Act of 2005. That was a very important piece of legislation that gave the Department of the Interior the jurisdiction to oversee the Outer Continental Shelf for renewable energy. The Obama Administration is really picking up the pace, devoting very significant resources and making great progress with offshore wind.

We look at this industry as a job creator and manufacturing sector, and that is how we approach all of our policy and advocacy perspective. We will need accelerated domestic production of offshore wind equipment if this industry is to succeed. And the reason for that is the high cost of installing offshore wind must be offset by the benefits that our developers can bring by attracting manufacturing to the United States.

If I may, I would like to just quote Governor Christie from New Jersey just last Thursday when he said, quote, We are going to make New Jersey number one in offshore wind production. Last year I signed the Offshore Wind Economic Development Act to provide financial assistance and tax credits to businesses that construct, manufacture, and assemble facilities that support offshore wind projects. And we have accelerated the development of offshore

wind projects by working closely with the U.S. Department of the Interior and the Bureau of Ocean Energy Management Regulation and Enforcement to speed the implementation of 1,100 megawatts of power.

There are three policy issues primarily that we would like to address before the Committee for your consideration and for Congress'. On the Federal legislative front, as Jim said from Cape Wind, we need the investment tax credit. It is probably the most fundamental tax incentive that can support this industry. We think it is fair because it helps to level the playing field with all of the benefits that the Ranking Member talked about in his opening statement that the fossil fuel industries are enjoying and have been enjoying for over a century.

We need to extend the placed-in-service date for offshore wind, and all of this is because of long lead times that it takes to permit and develop these projects. We would like to be treated similar to solar, to our colleagues in solar, where they have an ITC that runs to 2016, and we hope that the Congress will consider such an extension.

We also very strongly support loan guarantee extensions. We are disappointed that the DOE was forced to defund some of the loan guarantee programs for offshore wind developers. It is essential to create jobs. And we also support a credit subsidy for those loans.

We congratulate the Department of the Interior for its Smart from the Start programs. It has reduced the permitting timeline by 2 years, but still at 5 to 7 years it is too long. Even Director Bromwich at your testimony at the hearing on May 13th commented that he is still working to reduce that timeline.

We also need to overcome market barriers. We need a market for our product, and the Federal Government can help looking at Federal procurement by the Department of Defense, by the Department of Energy, and we are having those conversations with those Departments. We would love for you to help us with that.

And on the State level—of course, we also support research and development initiatives. On the State level, we want the States to continue to collaborate and coordinate with the Federal Government. Market creation is essential. New Jersey has done this by creating a revenue stream for up to 1,100 megawatts of power if the benefits will exceed the costs.

And we also need to incentivize manufacturers. When we do this, we will have the energy security and the energy independence and the national security that this Congress and this Nation needs as we progress.

Thank you very much.

The CHAIRMAN. Thank you very much for your testimony.

[The prepared statement of Mr. Lanard follows:]

Statement of Jim Lanard, President, Offshore Wind Development Coalition

Introduction

Mr. Chairman and Members of the Committee,

Thank you for the opportunity to present testimony to you today on the topic: "American Energy Initiative: Identifying Roadblocks to Wind and Solar Energy on Public Lands and Waters, Part II—The Wind and Solar Industry Perspective". My name is Jim Lanard, President of the Offshore Wind Development Coalition. The Offshore Wind Development Coalition represents offshore wind developers, service

providers to the industry including turbine manufacturers, cable manufacturers, submarine cable installers, other supply chain businesses, offshore submarine transmission providers, environmental consulting firms, and law firms. Our founders include seven offshore wind developers and the American Wind Energy Association (AWEA) has a seat on our Board of Directors.

Technology to generate electricity from offshore wind farms is not new and has a proven track record. In fact, the first modern day offshore wind farm became operational in 1991 off the coast of Denmark. There are now more than 40 offshore wind farms operating in European waters for a total of 2,396 MWs of power generation. There are sixteen more projects under construction, for an additional 3,972 MWs of installed capacity.

And let's not forget China, which is currently the world's largest generator of wind energy and is quickly becoming a world leader in offshore wind, too. China has clearly demonstrated that it values wind energy. For the year 2010, 46% of the world's newly installed wind energy capacity was in China, while the US accounted for 14.3% of the world's new wind energy facilities. Regarding offshore wind, China now has 102 MWs of offshore wind operating and 2.300 MWs of offshore wind is under construction. China's wind energy programs are supporting that country's efforts to achieve energy security, economic development and emission reductions.

Yet in the United States, no offshore wind farms have been built. But this will soon change. Change, in fact, began here in the US in 2005, when Congress passed and President George W. Bush signed into law the Energy Policy Act of 2005 (EPAct 2005). EPAct 2005 gave the Secretary of the US Department of the Interior leasing and permitting jurisdiction for renewable energy projects proposed for the Outer Continental Shelf (OCS).

Background

While the efficacy of offshore wind energy technology has been demonstrated in Europe, this technology and regulation of it is new to the United States. Federal and state regulators have had to draft regulations and learn about all aspects of developing, constructing, operating and decommissioning offshore wind farms. And they have had to consider more than 20 federal laws and Executive Orders that apply to offshore wind farms. This has been a steep learning curve for all parties, admirably begun under the prior administration and continuing at an even faster pace now. It is hard to imagine that anyone associated with offshore wind doubts the commitment and efforts that federal and state officials are continuing to make to establish this industry and its potential to employ tens of thousands of people in good paying jobs. We applaud President Obama, US DOI Secretary Ken Salazar, US DOE Secretary Steven Chu, and their staffs for their leadership on the continuing development of the offshore wind industry.

Momentum in the development of offshore wind is evidenced by the surge of interest demonstrated by developers. What began with Cape Wind's leading role a decade ago, when it first proposed an offshore wind farm for Massachusetts, has now turned into a very robust offshore wind industry. For example, state initiatives in Delaware, New Jersey and Rhode Island provided offshore wind developers opportunities to propose projects in the Atlantic Ocean. In 2006, Delaware held a competitive process to select a generation source to be located in-state. One offshore wind developer competed against two other power sources—one a gas-fired power plant and one a coal gasification plant. The offshore wind developer won that competition. Then, in 2007 and 2008, two states, New Jersey and Rhode Island, held competitions just for offshore wind developers. Five offshore wind developers bid in the New Jersey competition and then seven competed in Rhode Island.

And, with the advent of the federal government's OCS leasing program, we have seen even more interest in developing offshore wind. In 2010, eight offshore wind developers bid to lease land on the OCS off the coast of Maryland. Earlier this year, ten offshore wind developers bid in the leasing process for federal waters off of Massachusetts and, just next month in June 2011, it is expected that 20 or more offshore wind developers will respond to the federal government's Call for Nominations on the OCS off of New Jersey's coast.

This rapidly increasing level of interest is a significant signal that the offshore wind industry and the great benefits it can offer to our country is about to become a reality. Offshore wind provides clean, renewable energy that will support US efforts to reduce reliance on foreign energy sources and increase our country's quest for energy independence. In a sentence: Offshore wind can—and will—play a significant role to help the United States meet our national and energy security goals.

Job Creation and Manufacturing

Moreover, offshore wind has the potential to become one of our nation's newest manufacturing sectors and could employ tens of thousands of workers in good paying, clean tech jobs. In Europe, the European Wind Energy Association projects that "by 2030, more than 375,000 people should be employed directly in the sector—160,000 onshore and 215,000 offshore." (Emphasis added.) And President Obama, in an Earth Day speech on April 22, 2009 said,

"It's estimated that if we fully pursue our potential for wind energy on land and offshore, wind can generate as much as 20% of our electricity by 2030 and create a quarter-million jobs in the process—250,000 jobs in the process, jobs that pay well and provide good benefits. It's a win-win: It's good for the environment; it's great for the economy."

Some commentators have compared the jobs and manufacturing history of the development of the land-based wind industry with what we can expect from the offshore sector. We think US-based jobs and manufacturing for offshore wind farms will develop quicker than what has occurred in the land-based wind industry.

As background, it should be noted that domestic content of turbine-related materials for land-based wind farms, in their early years, was low. Prior to 2005, less than 25% of land-based turbines (based on cost) were manufactured in the U.S. Five years later that percentage has doubled so that in 2010, domestic content of U.S.-deployed turbines has reached 50%. According to the AWEA, more than 75,000 people work in the land-based wind industry and there are over 400 wind-related manufacturing plants in 43 states that support the manufacture of the 8,000 components of a typical wind turbine.

Offshore wind developers and state economic development officials expect—and the latter likely will demand—higher domestic content much earlier in the development cycle for the offshore wind industry. One driving force for domestic content of offshore wind equipment is that the cost of installing offshore wind farms is considerably higher than for land-based wind farms. Hence, there are sound public policy arguments for the case that offshore wind developers and their state counterparts should be able to demonstrate economic benefits—job creation and establishment of manufacturing centers—early in the development stage of this new industry. These economic benefits can thus offset the higher costs for installation of offshore wind farms. And those benefits must be enjoyed by residents in states where offshore wind power is being sold.

The question we are often asked is whether offshore wind can achieve the economies of scale necessary to support state and federal policies that promote the establishment of this multi-billion dollar industry. The answer is yes, economies of scale can be achieved for offshore wind farms. First, the use of larger turbines will result in a reduction of the number of foundations that need to be installed in the ocean while at the same time increasing per unit energy output. Second, developers have begun to propose larger wind farms; i.e., more turbines per wind farm. Several offshore wind developers planning to compete for the right to sell power in New Jersey have reported that they plan to propose wind farms scaled at 1,100 MWs each—and that 5- and 6–MW turbines are being considered. These wind farms are likely to cost more than three billion dollars ($3,000,000,000) each, which represents significant manufacturing and job creation potential for New Jersey and other states that embrace this new-to-the-US economic engine.

Offshore wind is a bipartisan issue. In addition to the Energy Policy Act of 2005 that President Bush signed, New Jersey Governor Chris Christie is a leader at the state level. Just this last Thursday, May 26, Governor Christie said:

> We're going to work to make New Jersey number one in offshore wind production. Last year I signed the Offshore Wind Economic Development Act to provide financial assistance and tax credits to businesses that construct, manufacture, and assemble water access facilities that support offshore wind products. The DEP has completed the first of its kind, two-year baseline study that identifies optimal sites for offshore wind turbines. This study combined with the strong policies I've spoken about is going to be instrumental and has been instrumental at the Department of the Interior recognizing New Jersey in its Smart from the Start program as a wind energy area. That provides us the opportunity for expedited federal permitting in this area, and we're going to try to take advantage of it. We've joined with the federal government and other East Coast states to establish the Atlantic Offshore Wind Energy Consortium to promote commercial wind development on the outer continental shelf. And we've accelerated the development of offshore wind projects by working closely with Interior and the Bureau of Energy Management Regulation and Enforcement to speed the implementation of 1100 MW of wind turbines. Since the call for interest

last month we will be receiving applications for more than 3,000 MW of projects within the next two weeks.

So the interest in New Jersey in wind power is significant, because of the laws that this administration has helped to put into place and we are going to continue to pursue that.

With these introductory and background comments, I will now address the Federal and State roles that are necessary to make the offshore wind industry and its manufacturing and job creation potential a reality.

The Federal Role in Offshore Wind

Legislative Priorities

The Offshore Wind Development Coalition has two major federal legislative priorities. The first is a long-term extension of the Investment Tax Credit. The second is restoration of the US DOE Loan Guarantee program.

1. Long-term extension of the Investment Tax Credit (ITC)

   Extension of the "placed-in-service" date applicable to the investment tax credit for offshore wind energy facilities is a very high priority for offshore wind developers. The ITC is the most fundamental federal tax incentive for renewable energy. The ITC imposes a strict deadline of December 31, 2012 for wind farms to qualify, whether onshore or offshore. This is in sharp contrast to the placed-in-service dates for all other renewable energy projects, which range from 2013 for marine and hydrokinetic facilities, biomass, geothermal, municipal solid waste and qualified hydropower to 2016 for solar energy projects. Although the 2012 deadline may create some difficulties for onshore wind, it imposes a near impossible barrier for offshore wind due to the long lead time required for development. In its current form, the ITC may not be available to any of the projects being developed and permitted off the Atlantic Coast or in the Great Lakes.

   The unavailability of the ITC will make it hard to finance offshore wind projects and will thwart development of an enormous indigenous offshore wind resource, one that the DOE estimates could reach 54 GW by 2030. Equally troublesome, if the ITC is renewed only for short periods just before it expires, as is often the case with other "extenders", it may never be usable for offshore wind.

   A long-term extension of the ITC is consistent with US policies that applied for coal, oil and gas powered generation when those facilities were first coming on line. Offshore wind developers hope to be given the same consideration. With a level playing field, and achieving the economies of scale discussed above, offshore wind will be a competitive power generation source. According to AWEA (www.PowerofWind.com):

   - The Congressional Research Service notes that for more than 90 years fossil fuel industries have taken subsidies via tax breaks.
   - The Government Accountability Office, during President Bush's administration, concluded that fossil fuels continue to receive nearly five times the tax incentives as renewable energy. (Federal Electricity Subsidies, Government Accountability Office, October 2007)

   The Offshore Wind Development Coalition strongly supports an ITC extension to at least 2016, the date that currently applies to solar facilities. Such an extension will signal the markets that projects can be developed and financed.

2. Restoration of the DOE Loan Guarantee Program

   The US DOE Loan Guarantee program for renewable energy projects was established when the Energy Policy Act of 2005 was enacted into law. The loan program exists to support debt financing for innovative energy projects, including first-mover offshore wind farms. Recent Congressional action on a Continuing Resolution (CR) for Fiscal Year 2011 has essentially eliminated funding for these loan guarantees for our members' projects. Several offshore wind farm developers were recently informed by the US DOE that their applications for loan guarantees were put on hold until additional resources are made available to the program. These loans, which would have reduced the cost of electricity to consumers, are essential to support job creation and economic development opportunities in many states. The loans would also begin to balance the substantial subsidies other sources of electricity generation receive from various federal tax incentive provisions. The elimination of federal loan guarantees presents a significant problem for offshore wind developers, since these guarantees significantly lower the cost of borrowing funds for an offshore wind farm. The cost to the US government is not high: The availability of eight billion dollars of federal loan guaran-

tees, which could support several first-mover projects, would require an appropriation of just $80 million.

An additional aspect of the loan guarantee program, provided for in the 2009 Recovery Act, had been its funding of a credit subsidy fee, which would otherwise have to be paid by an offshore wind developer at the loan closing. This credit subsidy payment provided for by the Recovery Act would have required offshore wind developers to reach loan closing by September 2011, an unrealistic date, considering the current federal permitting process timeline.

The Offshore Wind Development Coalition respectfully asks Congress to restore and fully fund the US DOE Loan Guarantee program as quickly as possible.

Regulatory Priorities

1. The US DOI's Smart from Start Initiative

   The Offshore Wind Development Coalition and our member companies worked hard to make the case that the seven-to-nine year permitting timeline for offshore wind, as originally contemplated by the DOI's Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE, previously the Minerals Management Service—MMS), was too long to support the establishment of this new industry. Secretary Salazar's Smart from the Start initiative has begun to address this long lead time for permitting and has already reduced the timeline by up to two years. This is a significant accomplishment and sends the right signals to offshore wind developers and their investors.

2. Continued Refinement of the BOEMRE Permitting Process for Offshore Wind Farms

   In his May 13, 2011 remarks to this Committee on Part I of this hearing, BOEMRE Director Bromwich said that his agency continues to work with other federal and state agencies to improve the permitting process for offshore wind. We think this coordination and collaboration is essential. The Offshore Wind Development Coalition and our member companies have had opportunities to discuss the offshore wind permitting process with federal officials and we appreciate the efforts they have made to reduce the permitting timeline. While the timeline still needs to be reduced some more, we believe BOEMRE is heading in the right direction. We will continue to work with BOEMRE and federal officials in other agencies to find additional reductions in the time it takes to permit an offshore wind farm.

Overcoming Market Barriers

State-driven policies, discussed in the last section of this testimony, will play a significant role to identify opportunities for offshore wind developers to sell their power into the grid. There is a federal role, too, and that includes federal procurement of power produced by offshore wind farms. To that end, the Offshore Wind Development Coalition has begun conversations with the US Department of Defense and the US Department of Energy to assess whether—and how—the federal government can help meet renewable energy goals set for the government's electricity use by purchasing energy produced from offshore wind farms.

Research and Development

The US DOE has taken a leading role to identify research and development programs that can support fast-track improvements for offshore wind technology, ranging from more efficient turbines to removal of market barriers to new offshore wind turbine designs. The Offshore Wind Development Coalition and our member companies have an excellent working relationship with DOE officials and its Office of Energy Efficiency and Renewable Energy (EERE). We will continue to work with DOE and EERE on these and other research and development initiatives.

State Role in Offshore Wind

State Support for Federal Government Programs

The US DOI has made cooperation and collaboration with state officials a cornerstone of its approach to offshore wind. We support these initiatives. Two programs stand out: the Federal—State Task Forces that have been formed in most states along the Atlantic and the establishment of the Atlantic Offshore Wind Energy Consortium. As New Jersey's Governor Christie said, his state will continue to work closely with the US DOI and BOEMRE to "speed the implementation" of offshore wind development in his state. To support the Governors' efforts to develop offshore wind off of their coasts, the Offshore Wind Development Coalition works closely

with state officials affiliated with the Atlantic Offshore Wind Energy Consortium and we have plans to reach out to Governor's offices in the Great Lakes states and Gulf of Mexico (primarily Texas) so that we can serve as a resource for all coastal states interested in offshore wind.

Market Creation

An important challenge that the offshore wind industry is continuing to address is the need for there to be markets for the power generated by our wind farms. State policies will play a significant role in the creation of these markets. A cost-benefit analysis associated with proposals to locate offshore wind farms in New Jersey is now required by law; this analysis will be carefully reviewed by that state's utility commission (the NJ Board of Public Utilities) and if the benefits of a specific project justify the costs, that project will be approved. Maryland Governor Martin O'Malley has proposed legislation expected to be considered in the next session of his state's General Assembly that would require a similar cost-benefit analysis. These analyses will look to the job creation and economic development commitments offshore wind developers can make to the states in which they hope to sell their power.

Economic Incentives for Manufacturers of Offshore Wind Equipment

States along the Atlantic Coast, the Great Lakes and Texas would all welcome the establishment of manufacturing facilities and the jobs associated with the soon-to-be-created offshore wind industry. Manufacturers of offshore wind equipment are being actively courted by the economic development agencies in many of these states. While there clearly will not be a "winner takes all" outcome in regard to which states are able to attract new manufacturers of offshore wind equipment, first mover states will reap the early—and likely more valuable—benefits.

Conclusion

The Offshore Wind Development Coalition appreciates the opportunity to present this written testimony for the Committee's consideration and for the opportunity to make an oral presentation of a summary of our written comments. We look forward to working with all Members and Staff of the Committee. And we hope that you will consider us as a resource as you deliberate on the value of offshore wind and the job creation and manufacturing opportunities that it offers our nation.

The CHAIRMAN. Next we will go to what was the other panel, the solar panel, and we will recognize Mr. Rhone Resch, President and CEO of Solar Energy. You are recognized for 5 minutes.

STATEMENT OF RHONE RESCH, PRESIDENT AND CEO, SOLAR ENERGY INDUSTRIES ASSOCIATION

Mr. RESCH. Thank you. I have a PowerPoint presentation which should come up. OK. Great.

Mr. Chairman, it is great to have you back. I am glad you are feeling better.

Ranking Member Markey, great to see you and the rest of the members of the Committee. I want to thank you for the opportunity to submit testimony on roadblocks to solar energy development on public lands.

I am Rhone Resch, the President and CEO of the Solar Energy Industries Association, and I am testifying on behalf of our 1,000 member companies and 100,000 Americans employed by the solar industry. SEIA, my organization, represents the entire solar industry, encompassing all major solar technologies, including photovoltaics, which you see up on the screen now, concentrating solar power, and solar heating and cooling.

Let me first thank Chairman Hastings and Ranking Member Markey for their leadership and support of solar energy. We are grateful that the Committee recognizes the important role that our public lands play in the development of solar. Even in the

struggling economy, the solar industry has become an energy and jobs powerhouse. The solar industry grew by 67 percent last year. Let me repeat that. The industry grew by 67 percent last year, and employs Americans in all 50 States, and is now one of the fastest-growing industries in the Nation.

Solar is an energy source available in every U.S. congressional district. Given our vast solar resources, we could easily lead the world in solar development. Solar also enjoys overwhelming public approval; 94 percent of Americans support solar overall, and 75 percent are in favor of building solar power plants on public lands.

Last year, 956 megawatts of solar electric capacity was installed, enough to power 200,000 homes. This phenomenal growth is a result of private investment, technological innovation, a maturing industry, and smart Federal and State policies. The Federal Government has received a strong return on its investment of public dollars with benefits to our economy that far exceed the costs.

Like most products, the costs of solar energy decreases as more solar is installed. The policies and incentives in place yield dividends now and also act as a catalyst for driving down future costs. Just to give you a sense, last year the cost of solar install costs decreased by 20 percent across the country. With increased deployment of solar energy, solar manufacturing and supply chain productions have followed.

This slide here shows the location of solar companies across the United States, with some examples like REC Silicon, which produces solar-grade polysilicon in Moses Lake, Washington. They expanded production last year to meet growing domestic demand, and the facility now employs 550 people in your district.

Abengoa Solar is constructing a 280-megawatt concentrating solar power plant in Gila Bend, Arizona, employing up to 2,000 people in Representative Grijalva's district. It looks like he just left. Through supply chain purchases from other companies, the plant supports hundreds of jobs throughout the entire country.

In early 2011, a 19-megawatt PV plant, the largest solar plant in Colorado, came on line in Representative Tipton's district. That plant now powers nearly 4,000 homes, and a larger 30-megawatt plant is under construction nearby and will be operational later this year.

Last year was also a noteworthy year as the Bureau of Land Management issued the first-ever permits for construction of utility-scaled solar power projects on public lands. And by the end of last year, nine permits had been approved by BLM. Today work is under way at three of these sites, and several other solar power plants are under construction on private land in the Southwest, employing hundreds of workers from the region.

Here you can see a worker building the frame for a power block at BrightSource Energy's Ivanpah project. And the next slide, here you can see a worker that is working through the night to construct a molten salt storage plant at Abengoa Solar's Solana Power Plant in Arizona.

Still, there is room for improvement. Developers face many hurdles in bringing a solar project to fruition, whether on public or private lands. Our industry needs stable, predictable policies for continued growth. Today we propose several steps that will keep solar

growing and surmount some of the hurdles that make it harder to locate utility-scale solar on public lands.

Specifically we are seeking, as you heard from the wind industry, a multi-year extension of the 1603 Treasury program. Plain and simple, this program is the most effective mechanism available for deploying renewable energy while providing a strong economic return for the taxpayer.

Second, we need maximum flexibility for solar developers to site projects on public lands without being restricted to zones.

Third, the section 10 consultation process performed by the Fish and Wildlife Service must include a cost-recovery mechanism and consistent timeframes to speed up the processing.

Fourth, BLM must employ a solar rent policy that is comparable to private-land prices.

And finally, continued support for the DOE loan guarantee program is critical, as is the creation of the new Clean Energy Bank to provide long-term, low-cost financing for solar.

Again, thank you for inviting SEIA to submit this testimony. We look forward to working with the Committee to remove roadblocks to the development of solar energy on public lands. And I am happy to answer your questions at the appropriate time. Thank you.

The CHAIRMAN. Thank you very much, Mr. Resch.

[The prepared statement of Mr. Resch follows:]

Statement of Rhone Resch, President & CEO,
Solar Energy Industries Association

Mr. Chairman and Members of the Committee,

Thank you for the opportunity to submit testimony on roadblocks to solar energy development on public lands. I am Rhone Resch, the President and CEO of the Solar Energy Industries Association (SEIA). I am testifying on behalf of our 1,000 member companies and 100,000 American citizens employed by the solar industry. SEIA represents the entire solar industry, encompassing all major solar technologies (photovoltaics, concentrating solar power and solar water heating[1]) and all points in the value chain, including financiers, project developers, component manufacturers and solar installers. Before I begin my testimony, let me thank Chairman Hastings and Ranking Member Markey for their leadership and support of solar energy. We are grateful that the Committee recognizes the important role that our public lands play in the deployment of solar energy.

I. Introduction

Established in 1974, the Solar Energy Industries Association is the national trade association of the U.S. solar energy industry. Through advocacy and education, SEIA and its 1,000 member companies are building a strong solar industry to power America. As the voice of the industry, SEIA works to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy.

We have an opportunity—and perhaps an obligation—to craft policies today that will guarantee a clean energy future for tomorrow, one in which our energy comes from renewable, domestic sources. Today's hearing is an important step in securing that future. Developers face many hurdles in bringing a solar project to fruition, whether on public or private lands. Below we make recommendations for ensuring the long-term policy certainty needed to make solar energy a substantial part of our energy supply in the United States:

- Retain maximum flexibility for solar developers to site projects on public lands without being restricted to zones.

[1] For more information on each of these solar technologies, see http://seia.org/cs/solar_technology_and_products.

- Establish a cost recovery mechanism and consistent timeframes to expedite the Section 10 consultation process performed by the U.S. Fish and Wildlife Service.
- Extend the 1603 Treasury Program, which allows solar and other renewable energy developers to receive a direct federal grant in lieu of taking the investment tax credit, which is already in place.
- Continue support for the DOE Loan Guarantee Program and/or establish a Clean Energy Bank to provide long-term, low-cost financing to those deploying solar.
- Grant long-term clean energy contracting authority for federal agencies to reap the benefits of solar energy.

II. Overview and Recent Highlights of the U.S. Solar Industry

At a time of high unemployment and difficult economic conditions, the solar industry has become the fastest growing U.S. energy sector and one of the fastest growing industries across the entire economy. In 2010, the solar industry grew at a rate of 67 percent and now employs Americans in all 50 states. Last year, 956 megawatts (MW) of photovoltaics (PV) and concentrating solar power (CSP) technologies were installed, as well as 2.4 million square feet of solar water heating collectors. This phenomenal growth is the result of private investment, technological innovation, a maturing industry and smart federal and state policies. The federal government has received a strong return on its investment of public dollars, with benefits to our economy that far exceed their costs.

Solar is an energy source available in every U.S. Congressional district.[2] At this time, Germany leads the world in solar installations with a solar resource equivalent to that of the state of Alaska. Given our vast solar resources, we could easily lead the world in solar deployment. The vast majority of Americans would no doubt support such a goal: 94% of Americans think it is important for the nation to develop and use solar energy.[3]

Solar energy has many benefits, including the ability to be tapped in a variety of circumstances—in power plants, in residential and commercial applications, and even off-grid in remote areas where no other electric infrastructure exists. Solar also generates electricity during peak demand, when we need it most and electricity is most expensive.

The solar industry is maturing rapidly. Major companies like GE, Dupont and Applied Materials have solar divisions. Utilities from Florida Power & Light to PSEG and Arizona Public Service Company own solar assets in their generation fleet. Other energy players are increasingly investing in solar, such as NRG Energy, AREVA and Westinghouse. Even Google is making a major play, putting a 1.6 MW distributed solar generation system on its Mountain View, California campus and investing $168 million in the Ivanpah Solar Electric Generating System, a solar power plant which uses BrightSource Energy's proprietary power tower technology.

Like most products, solar energy's costs decrease as more and more solar is installed. The policies in place today to incentivize solar deployment not only yield dividends now, they act as a catalyst, driving down future costs. The right policy underpinnings can shave years off of the organic price drops analysts expect.

With increased deployment of solar energy, solar manufacturing and supply chain production have followed. For example:

- In 2010, REC Silicon, which produces solar-grade polysilicon in Moses Lake, Washington, expanded capacity and production to meet growing domestic demand. The facility produces 27% of all solar-grade polysilicon in the U.S. and employs 550 people in Chairman Hastings's district.
- A 280 MW concentrating solar power plant is under construction in Gila Bend, Arizona, employing up to 2,000 people in Representative Grijalva's district during construction of the facility. Through supply chain purchases from companies around the country, the plant supports hundreds of jobs in every region.
- Early in 2011, a 19 MW PV plant, the largest solar plant in Colorado and one of the largest in the country, came online in Representative Tipton's district. The plant produces enough clean solar energy to power nearly 4,000 homes, and this is just the beginning. A larger 30 MW plant is under construction nearby, and is expected to become operational later this year.

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[2] *See* PV Resources chart at Attachment 1, comparing the United States to Germany and Spain.

[3] 2010 SCHOTT Solar Barometer™. See details at http://seia.org/cs/news_detail?pressrelease.id=1061.

More solar energy highlights by Congressional district can be found at Attachment 2.

Last year was also a noteworthy year for the Bureau of Land Management's (BLM) solar efforts: it issued the first nine permits for construction of utility-scale solar power projects on public lands in the entire history of the agency. Today, work is underway at three of the sites and several other utility-scale solar power plants are under construction in the Southwest, employing hundreds of workers from the region. In addition, the supply chains behind each of those facilities are turning out highly reflective mirrors, precision-crafted receiver tubes, steel posts and thousands of other components in Alabama, Michigan, New Mexico, Pennsylvania, Tennessee and Virginia.

As you can see, 2010 was an exciting year for the U.S. solar industry. But we're not stopping there: the SEIA Board of Directors set out a goal for the industry to install 10 gigawatts—10,000 MW—annually by 2015.

III. Solar Power Plant Developers Face Persistent Challenges

Solar power plant developers face persistent hurdles in bringing a project to completion, whether the solar plant is sited on public or private lands. In the public lands arena, the Department of the Interior (DOI), thanks to the leadership of Secretary Salazar, prioritized the permitting of renewable energy projects, and SEIA commends DOI, BLM and the U.S. Fish and Wildlife Service (USFWS) for their efforts.

The overarching challenge for any industry is policy certainty. When companies are deciding where to build their next manufacturing facility, when and where to spend $1 billion constructing a new power plant or how many employees to add this year, they need a high degree of confidence in the future. This is true for public lands policy as well as tax, finance and energy policies.

A. Public Lands Policy: The Programmatic Environmental Impact Statement for Solar Energy

In 2008, BLM initiated a major undertaking studying and preparing a programmatic environmental impact statement (PEIS) for solar development in six Southwest states.[4] When final, the PEIS will establish policy for solar development on public lands for the next two decades. As part of the study process, BLM proposed and analyzed 24 "solar energy study areas" on existing public lands which could be codified as "solar energy zones" and which would encourage solar energy development within their boundaries. BLM released the Draft PEIS in December 2010 and the public comment period recently closed.[5]

A fundamental policy decision to be made in the final PEIS is whether solar energy development will be allowed across 22 million acres of public lands in the Southwest, with benefits accruing to those projects located within the solar energy zones, or if solar development will be restricted to only lands within the identified zones. Recognizing that not every acre of BLM-managed land is appropriate for solar development,[6] the solar industry is nevertheless concerned that permitting development exclusively within the solar energy zones is overly restrictive, would thwart development and would undermine the renewable energy goals Congress set out for BLM in the *Energy Policy Act of 2005*.[7]

Our public lands have been used for a wide variety of economic and recreational activities over the last century, and solar must be one of those acceptable uses. In fact, three out of four Americans approve of solar energy development on public lands.[8] BLM should not adopt the solar energy zone-only alternative presented in the Draft PEIS. Instead, BLM should adopt the Preferred Alternative identified in the Draft PEIS and work to make the solar energy zones themselves more attractive to project developers.

Much more needs to be known about the solar energy zones to make them a useful option for solar energy developers. Only a cursory review of the zones has been conducted, and neither BLM nor a developer can affirmatively state that a solar power plant belongs within any of the zones. Not enough is known regarding the biological and cultural resources within these zones. As a result, a developer that

[4] While the PEIS is intended to set policy for all lands managed by BLM, the six states studied were Arizona, California, Colorado, Nevada, New Mexico and Utah.

[5] SEIA's full comments on the Draft PEIS are available at http://www.seia.org/galleries/pdf/Final_PEIS_Comments_5.2.11.pdf.

[6] Indeed, BLM's Preferred Alternative in the Draft PEIS takes approximately 77 million acres off the table for solar energy development and puts forth rules for the remaining lands.

[7] Section 211 of the *Energy Policy Act of 2005* (P.L. 109–58) establishes a goal for DOI of approving 10,000 MW of non-hydropower renewable energy projects on public lands by 2015.

[8] View poll details at http://seia.org/cs/news_detail?pressrelease.id=769.

seeks to site a power plant within such a zone will still expend a great deal of effort and money studying the site in order to receive a permit for development. The solar energy zones were intended to ease the way for development, providing a sort of "pre-approval" that such acres are suitable for solar power plants. But in their current state, the solar energy zones do not provide real incentives for solar development within their boundaries.

B. Public Lands Policy: Early Stakeholder Input is Preferable when Crafting New Policies

In 2010, the Department of the Interior faced the daunting task of permitting solar energy projects at a pace the department had never before attempted, while simultaneously crafting the policies necessary to carry out such permitting. Even now there are many new policies coming out of BLM and USFWS in Instruction Memorandum (IM) format. The pace of these releases is challenging for both developers and field office staff to react to and the regulatory continuity between the field offices is not consistent. In many cases, guidance has been crafted based on policies from other industries that BLM oversees, with limited applicability to solar energy.

As a recent example, the U.S. Fish and Wildlife Service issued draft Eagle Conservation Plan Guidance for wind developers. Just after this document's release, some regional USFWS staff began requiring solar developers to comply with the guidelines contained therein. Such a standard is wholly inappropriate, given that the guidance was written for another industry and is only in draft form. A solar developer cannot reasonably be expected to comply with guidance for wind development.[9] USFWS should ensure that no regional or field offices are applying any aspect of this guidance to solar power projects. In addition, USFWS should have to make a threshold determination of a project's adverse impact on eagles prior to applying any Eagle Guidance to a renewable energy project. Without a threshold finding, USFWS has no way of knowing whether the proposed Guidance is applicable or appropriate for a given project. Moreover, without an initial understanding of a project's impact, USFWS cannot determine whether the Guidance will even be effective at monitoring and protecting eagles and their environment.

Similarly, BLM's Instruction Memorandum establishing performance and reclamation bond requirements for solar energy projects[10] relies heavily on the requirements for the mining industry. A solar power plant's footprint and potential impact on public lands are far different than mining and other extraction activities, and that should be recognized by the agency and reflected in policy decisions.

Finally, the rent policy BLM established for solar energy produces excessive charges to developers. In some instances, the BLM rent is double what a developer would pay for nearby private land. Developing on public lands also comes with other costs to the developer not seen for private lands: increased processing time, mitigation fees, restoration and revegetation bonding. Each of these extra costs will deter solar development on public lands, contrary to the goals of the Administration and Congress. In addition, charging high rents by BLM will lead to higher rents in the private sector, which will further damage the economics of future solar projects.

C. Private Lands Policy: Section 10 Consultations from USFWS Are Not Timely

A perennial challenge faced by solar developers (and many others) is that of securing a timely Section 10 consultation[11] from USFWS. Many in the solar industry are developing projects on private lands and, due to biological considerations, need permits to be issued by the U.S. Fish and Wildlife Service to proceed with their

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[9] SEIA's full comments to USFWS regarding the Eagle Conservation Plan Guidance are enclosed here as Attachment 3.

[10] *See* IM 2011–003, available at http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2011/IM_2011–003.html.

[11] The Endangered Species Act (ESA) prohibits anyone from committing a "take" (kill, injure, harass, etc.) of any listed species without appropriate authorizations from the USFWS. 16 U.S.C. § 1531 *et seq.* However, Section 10 of the ESA provides exceptions to this rule, such as permits, when a "take" is likely to occur during a proposed activity. *Id.* at § 1539(a)(1)(B). Obtaining a permit can be a long and arduous process for projects without a federal nexus as it requires the permit applicant (and not USFWS) to determine the effects of the project on endangered species and their habit, design a Habitat Conservation Plan (HCP), provide a long-term commitment to species conservation, and request a consultation with the USFWS. During consultation, the Service and the applicant discuss the proposed project and the species likely to be affected as well as mitigation and conservation measures for habitat maintenance, enhancement, and protection, coincident with development. There is no formal timeline associated with Section 10 consultation. However, preparation of and agreement by all parties involved in the HCP can take several years. In addition, it can take months to years for the USFWS to review and approve the HCP and issue an incidental take permit.

project.[12] Projects without a federal nexus (i.e., projects that are not funded, authorized, or carried out by a federal agency) may linger for years at the back of the queue while USFWS staff provides Biological Opinions and incidental take statements (if needed) to other applicants whose projects are on public lands or otherwise have a federal nexus (e.g., a recipient of a Department of Energy loan guarantee).

This is not a matter of undue preferential treatment, but of insufficient staff resources. Indeed, in Fiscal Year 2010 alone, USFWS performed over 30,000 consultations with federal agencies under Section 7 of the *Endangered Species Act,* leaving little time for staff to provide Section 10 consultations.[13] To address this staffing challenge, SEIA recommends establishing a cost recovery mechanism through which applicants could reimburse USFWS for contracting independent, non-biased scientists and permit experts to expedite the consultation and review and process. This process is used today by BLM in processing right-of-way applications.[14] In addition, we recommend that USFWS establish a consistent timeframe for Section 10 consultations, enabling solar projects on private lands to move forward in a timely fashion.

D. Tax Policy: Recent Success Demonstrates the Value of Certainty

The *Energy Policy Act of 2005* created tax incentives for solar energy. Specifically, the measure provided a 30% investment tax credit (ITC) for commercial and residential solar energy systems. Congress subsequently improved and extended the ITC through 2016. The multiple-year extension of the residential and commercial solar ITC gave entrepreneurs the policy certainty needed to invest in solar energy projects. As a result, the industry has grown by 800% since the ITC was implemented in 2006. Cumulative solar capacity in the U.S. now exceeds 2,600 MW, enough to power more than a half million homes.

The 2008 economic crisis rendered solar and other renewable energy tax incentives of little immediate value. Prior to the financial crisis, many large renewable energy projects relied upon third-party tax equity investors to monetize the value of federal renewable energy incentives. The economic downturn drastically reduced the availability of tax equity, severely limiting the financing available for renewable energy projects.

In response to the dramatic decline in available capital, Congress enacted the Section 1603 Treasury Program. This program allows solar and other renewable energy developers to receive a direct federal grant in lieu of taking the ITC that is already in place. This simplifies financing for renewable energy projects and provides access to capital at a time when project developers' tax burdens are inadequate to capitalize on tax incentives and tax equity financing is both scarce and expensive.

By any objective measure, the Section 1603 Treasury Program has been a resounding success. Due in large part to the liquidity provided by this important incentive, the solar industry grew 67% in 2010, making it one of the fastest growing industry sectors in the U.S. economy. Due in large part to reliable, consistent federal policy, solar costs continue to decline. Last year, installed costs fell by 20%, and from the year 2000 to the present, the per-watt price of photovoltaics has declined by 40%. Solar is a diverse technology, and costs will continue to drop as the industry achieves greater efficiencies and economies of scale.

E. Energy Policy: Long-Term Commitments to Renewable Energy Are Vital

Solar power plants are sizable assets that have a useful life of 30 or more years. In order for a proposed solar project to be built, it needs a long-term buyer of its electricity (typically through a bilateral contract with a utility called a power purchase agreement or PPA) and a long-term loan from a bank, financing the project at a reasonable interest rate. Federal policies are needed to provide certainty regarding the financial underpinnings of projects. Such policies include the Department of Energy (DOE) Loan Guarantee Program or a Clean Energy Bank. State-level renewable portfolio standards have incentivized utilities to sign long-term contracts with solar providers. Federal agencies face similar RPS goals for the energy they use, but lack the authority to similarly enter into long-term contracts with solar providers. Long-term clean energy contracting authority should be granted so the federal government can enjoy the same benefits of solar energy that utilities and homeowners do.

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[12] Section 10(a) of the ESA requires preparation and approval (by USFWS/NMFS) of a Habitat Conservation Plan before USFWS can authorize the project or issue an Incidental Take Permit.

[13] http://www.fws.gov/endangered/esa-library/pdf/consultations.pdf

[14] *See* 43 U.S.C. § 1764 ("The Secretary concerned may. . .require an applicant for or holder of a right-of-way to reimburse the United States for all reasonable administrative and other costs incurred in processing an application for such right-of-way. . .") and 43 CFR § 2804.14, which dictates that an applicant pay "full reasonable costs" for certain applications.

DOE's loan guarantee program was initially created by the *Energy Policy Act of 2005* in recognition of the great challenges that large nuclear, renewable and other low-carbon energy projects face obtaining affordable long-term financing in the commercial marketplace. In today's economic climate, these programs are critical to attract investment in nuclear, clean coal and renewable energy projects. Until the financial community witnesses the successful completion of several of these projects, it will continue to charge substantial premiums or not lend to those projects at all. In addition to reducing component costs, access to long-term debt at a low interest rate is key to ensuring that solar power plants are cost-competitive with other electricity sources. We urge Congress to provide sufficient funding to the Section 1703 DOE Loan Guarantee Program in Fiscal Year 2012 to continue the timely processing and reward of loan guarantees to all of the projects deserving of DOE support.

Another way to accomplish this goal would be to establish a Clean Energy Bank or Clean Energy Deployment Administration (CEDA). As envisioned in H.R. 2454 (2009), CEDA could directly provide loans to an applicant that deploys a clean energy technology. CEDA would also continue to provide loan guarantees, similar to the current DOE Loan Guarantee Program.

On the purchasing side of the ledger, only the Department of Defense currently has the authority to enter into contracts of longer than 10 years with energy providers.[15] However, most solar energy projects require a 20- to 30-year contract in order to be financially viable and provide electricity at a rate at or below the retail price. Unlike other sources of electric generation, solar power plants mainly consist of the up-front cost of installing the infrastructure and solar equipment. Ongoing operations and maintenance costs are quite low, and the fuel is free. Therefore, the longer the term of the contract, the cheaper the electricity is on a per-unit basis. If a buyer wants a 10-year contract, the entire cost of the power plant must be amortized and recovered over only 10 years. If the buyer can sign a 30-year contract, however, the equipment costs are spread over 30 years instead.

Nellis Air Force Base, outside of Las Vegas, Nevada, illustrates the potential of long-term clean energy contracting. There, the U.S. Air Force contracted for electricity via a 14 megawatt solar PV installation. In addition to providing 25% of the electricity needed annually for base operations, the solar project is saving the base over $1 million each year in lower electricity costs.[16] Solar projects can similarly save other federal agencies millions on their utility bills over the next several decades, but these solar projects cannot move forward until civilian agencies have the authority to sign a long-term contract. Extending the contracting authority to match the life of the solar project would benefit solar companies and the public by securing long-term sources of clean energy.

IV. Conclusion

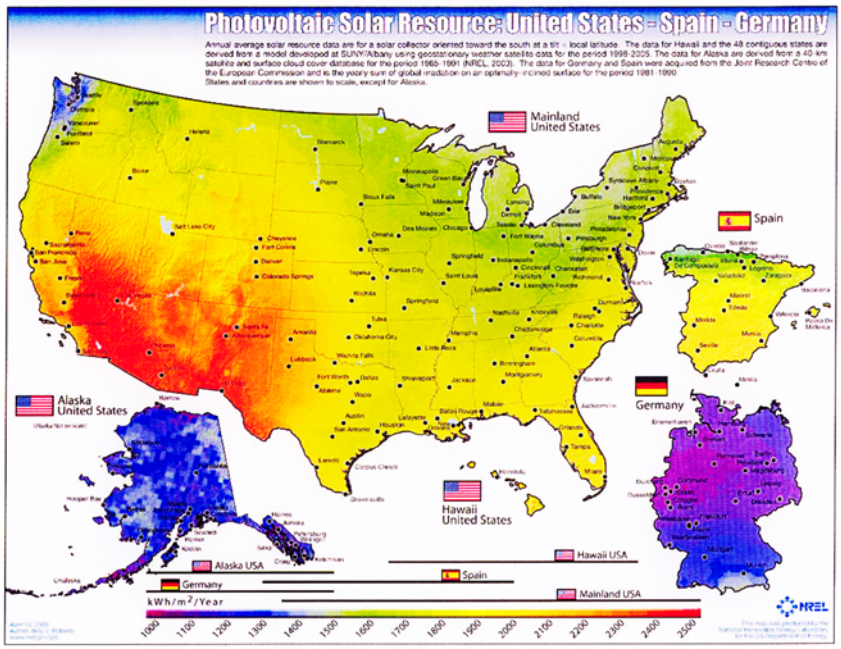
Again, thank you for inviting SEIA to submit this testimony. We look forward to working with the Committee to establish long-term, stable policies which remove roadblocks, promote job creation and ensure the deployment of solar energy technologies on public lands.

[15] *See* 10 U.S.C. § 2922a.

[16] Department of Defense Strategic Sustainability Performance Plan FY2010, page I–5.

ATTACHMENT 1

MAP OF U.S. SOLAR RESOURCES COMPARED TO GERMANY AND SPAIN



ATTACHMENT 2

SOLAR INDUSTRY HIGHLIGHTS BY CONGRESSIONAL DISTRICT

Alaska, At-Large—Rep. Don Young

- There are 15 companies providing solar jobs in Alaska
- Alaskan owned and operated Polar Wire Products manufactures "arctic grade" wire and electrical equipment used extensively in alternative energy systems

Arizona, 1*st* District—Rep. Paul Gosar

- Solargenix's Saguaro Solar Power Plant, a 1–MW CSP Trough Plant in Red Rock is online
- Arizona Public Service built the Prescott Solar Power Plant, a 3–MW PV Plant in Prescott
- Global Solar Energy built the Springerville Generation Station Solar System, a 5–MW Thin-Film PV Plant in Springerville

Arizona, 7*th* District—Raúl Grijalva

- Abengoa is constructing its Solana Project, a 280–MW trough CSP plant, in Gila Bend
- First Solar is constructing the 17–MW Paloma Solar thin-film PV plant in Gila Bend
- Solon is constructing the Cotton Center, a 17–MW PV plant in Gila Bend

California, 4*th* District—Rep. Tom McClintock

- SunEdison, a global solar developer, has an office in McClellan
- SolarRoofs.com, a solar water heating and cooling manufacturing company, is headquartered in Carmichael
- United Natural Foods is installing a 1.19 MW solar PV array on its roof in Rocklin

California, 10*th* District—Rep. John Garamendi

- SolarBOS, a designer and manufacturer of electrical "Balance of System" products for the solar industry is based in Livermore
- Amerimade, also based in Livermore, manufactures a variety of PV systems and parts

California, 19*th* District—Rep. Jeff Denham

- 10 companies in California's 19th Congressional district are creating solar jobs
- MRL Industries, Inc. manufactures solar industry-related heating products and services in its Sonora factory

California, 20*th* District—Rep. Jim Costa

- Cleantech America Inc.'s CalRENEW–1 5–MW Thin-Film PV Project in Mendota is online
- There are 1,053 companies creating solar jobs in California

California, 38*th* District—Rep. Grace Napolitano

- The Los Angeles Unified School District is partnering with SunPower Corporation to install a 1 MW solar panel array on top of its General Stores Warehouse in Pico Rivera

Colorado, 3*rd* District—Rep. Scott Tipton

- SunPower's Greater Sandhill Solar Plant, a 19–MW PV plant is online in Alamosa County
- SunEdison's Alamosa PV Solar Plant, an 8–MW PV plant is operational
- SunPower and Iberdola are constructing the 30–MW PV San Luis Valley Solar Ranch in Alamosa County

Colorado, 5*th* District—Rep. Doug Lamborn

- Three Phases/Green Rock Capital built a 2–MV PV plant on Fort Collins Army Base
- Diamond Wire Material Technologies, a diamond wire cutting technology manufacturer serving the global solar industry, is headquartered in Colorado Springs

Colorado, 6*th* District—Rep. Mike Coffman

- Douglas County School System began construction this year on a 3.1–MW solar system
- ProtoFlex Corporation, a thin film coating manufacturer is headquartered in Centennial

Florida, 2*nd* District—Rep. Steve Southerland II

- There are 8 companies creating solar jobs in Florida's second Congressional district
- There are four utility-scale solar power projects online in Florida, two projects under construction, and 6 projects under development

Florida, 25*th* District—Rep. David Rivera

- There are 236 companies creating solar jobs in Florida
- Cuantum Solar America, LLC, a PV module manufacturer, is headquartered in Miami

Georgia, 10*th* District—Rep. Paul Broun

- US Battery, a solar battery manufacturing company, has a branch in Augusta
- The ROOKER company, an industrial real estate firm, is constructing a 115-kW PV system

Hawaii, 1*st* District—Rep. Colleen Hanabusa

- Sopogy's 5–MW concentrating solar power project in Oahu is under construction
- Hoku Corporation, headquartered in Honolulu, manufactures solar grade polysilicon

Idaho, 1*st* District—Rep. Raúl Labrador

- Voodoo Solar, a residential solar installer, is headquartered in Cocolalla

Louisiana, 3*rd* District—Rep. Jeff Landry

- An AGC Flat Glass Inc commercial glass fabrication facility is in nearby Baton Rouge

Louisiana, 4*th* District—Rep. John Fleming

- Another of AGC Flat Glass Inc's commercial glass fabrication facilities is in Opelousas

Maryland, 1*st* District—Rep. Andy Harris

- PowerUp Corporation, a solar PV project distributor, has an office in nearby Chase, Maryland

Maryland, 3*rd* District—Rep. John Sarbanes

- Constellation Energy installed a 750-kW PV system on a Millersville government building
- Constellation Energy installed a 500-kW PV system on Coppin State University's rooftop

Massachusetts, 5*th* District—Rep. Niki Tsongas

- Rivermoor Energy is constructing a 1–MW PV plant in Haverhill

Massachusetts, 7*th* District—Rep. Edward Markey

- 1366 Technologies in North Lexington is commercializing a new manufacturing process for PV wafers
- Practical Solar, based in nearby Boston, manufactures and supplies solar heliostats

Michigan, 1*st* District—Rep. Dan Benishek

- Phoenix Navigation and Guidance Inc. in Munising is building solar turbogenerators
- SES Flexcharge USA, based in Charlevoix, manufactures custom PV systems
- The world's largest manufacturer of polycsrystalline silicon used in solar panels is Hemlock Semiconductor located in the district next door

Michigan, 5*th* District—Rep. Dale E. Kildee

- 79 Michigan companies are creating solar jobs, six are in the fifth Congressional district
- Mersen USA Ultra Carbon Division, a manufacturer of advanced materials and solutions for high temperatures, is based in Bay City

New Jersey, 3*rd* District—Rep. Jon Runyan

- The east coast regional office of SunPower Corporation, a large designer, manufacturer and distributor of solar PV panels, is located in nearby Trenton
- There is one utility-scale solar power plant operating in New Jersey, four plants under construction, and seven plants under development

New Jersey, 6*th* District—Rep. Frank Pallone, Jr.

- America Capital Energy is constructing 5–MW PV Yardville Solar Farm in Hamilton
- Aston Solar, headquartered in Piscataway, is a solar energy product manufacturer, distributor, system integrator, and services provider

New Jersey, 12*th* District—Rep. Rush Holt

- American Capital Energy and SunEdison are constructing the Trenton Solar Farm, a 1 MW ground-mounted PV system in nearby Trenton
- 201 companies are creating solar jobs in New Jersey; 28 are in the 12th district

New Mexico, 1*st* District—Rep. Martin Heinrich

- First Solar's 2–MW thin film PV facility in Albuquerque is online
- 60 companies are creating solar jobs in Arizona; 23 are in the first Congressional district
- Schott Solar, Inc., a global PV receiver tech manufacturer, is headquartered in Albuquerque

New Mexico, 3*rd* District—Rep. Ben Ray Luján

- Chevron's 1-MW concentrating PV plant is operating in Questa
- First Solar's 30–MW thin film PV facility is online in Cimarron

Ohio, 6*th* District—Rep. Bill Johnson

- New Harvest Ventures/Agile Energy are developing the 50–MW PV Turning Point Solar Project in Cumberland
- There are 65 companies creating solar jobs in Ohio, and 3 are in the sixth district of Ohio

Ohio, 13*th* District—Rep. Betty Sutton

- Akron Metro Regional Transit Authority's 480-kW rooftop PV project in Akron is online
- Westlake Metals Company, in North Ridgeville, manufactures metal for solar projects

Oklahoma, 2*nd* District—Dan Boren

- 19 companies are creating solar jobs in Oklahoma

Oregon, 4*th* District—Rep. Peter DeFazio

- 94 companies are creating solar jobs in Oregon. Pacific Metal Fabricators, LLC, a sheet metal manufacturer for solar power projects, is headquartered in Eugene
- Industrial Finishes and the Pepsi Cola Bottling Company have each installed two of the largest PV projects in the Northwest on their Eugene facilities' rooftops

Pennsylvania, 5*th* District—Rep. Glenn Thompson

- 288 companies are creating solar jobs in Pennsylvania, and five are in the fifth district
- There is one utility-scale solar power project online in Pennsylvania, three projects under construction and three projects under development

South Carolina, 3*rd* District—Rep. Jeff Duncan

- Ulbrich, in Westminster, supplies copper wire used in solar panels.

South Dakota, At-Large—Rep. Kristi Noem

- Ellsworth Air Force Base is installing PV systems through its $7.2 million energy initiative

Tennessee, 2*nd* District—Rep. John Duncan, Jr.

- Efficient Energy of Tennessee built a 1–MW PV Plant in Knox County
- ATAS, a roof and PV system installer, has an office in Maryville

Tennessee, 3*rd* District—Rep. Chuck Fleischmann

- Wacker Chemical is investing 1.5 billion in a polysilicon manufacturing plant near Cleveland. The plant will create 650 jobs.
- 39 other companies are creating solar jobs in Tennessee

Texas, 1*st* District—Rep. Louie Gohmert

- PowerUp Corporation, a solar PV project distributor, has an office in Tyler

Texas, 17*th* District—Rep. Bill Flores

- Connexa Energy, a renewable products manufacturer/distributer, is in nearby Boerne
- The Cameron Park Zoo in Waco will be installing a 6,000 square foot PV panel system

Utah, 1*st* District—Rep. Rob Bishop

- Salt Lake City is one of the Department of Energy's Solar America Cities
- Utah has a goal of installing 10 MW of new solar PV power in Salt Lake City by 2015
- Applied Materials, a global provider of equipment, services and software for manufacturing PV products has a research, development and manufacturing facility in Salt Lake City

Virginia, 1*st* District—Rep. Robert Wittman

- There are 91 companies creating solar jobs in Virginia, and 6 are in the first district
- Infinite Energy Resources, a renewable energy facilities developer, is based in Fredericksburg

Washington, 4*th* District—Chairman Doc Hastings

- Infinia Corporation, the manufacturer and supplier for Stirling-based solar power generation systems, is headquartered in Kennewick
- Teanaway Solar Reserve is developing a 75–MW PV project in Cle Elum

American Samoa, At-Large—Del. Eni Faleomavaega

- American Samoa has 616 kW of distributed solar operating at 25 government and commercial buildings

Guam, At-Large—Del. Madeleine Bordallo

- A new 250-kW solar PV system installed at Guam Naval Base will produce an estimated 411,000 kWh of renewable power per year, reducing electricity costs by $106,050

Northern Mariana Islands, At-Large—Del. Gregorio Kilili Camacho Sablan

- 160 SCHOTT 280-watt PV panels are being installed at Southern Saipan High School thanks to a grant from the *American Recovery and Reinvestment Act of 2009*

Puerto Rico, At-Large—Resident Commissioner Pedro R. Pierluisi

- Walmart and SunEdison are building the biggest solar power project in Puerto Rico on five Walmart-owned stores. The program could expand to 23 stores over five years.

Virgin Islands, At-Large—Del. Donna M.C. Christensen

- The largest solar-powered electricity system in the territory is being installed at King Airport in St. Thomas. The PV panel system is expected to generate 450 kW, supplying 15 percent of the airport's energy needs.

ATTACHMENT 3

SEIA Comments to USFWS on Eagle Conservation Plan Guidance

May 19, 2011

Mr. Jerome Ford
U.S. Fish & Wildlife Service
Attn: Eagle Conservation Plan Guidance
4401 North Fairfax Drive; Mail Stop 4107
Arlington, VA 22203–1610

TRANSMITTED VIA E–MAIL

RE: Eagle Conservation Plan Guidance

Dear Mr. Ford:

On behalf of the Solar Energy Industries Association (SEIA) and its 1,000 members, I would like to express our appreciation for the U.S. Fish and Wildlife Service's (USFWS) ongoing efforts to support the deployment of solar energy projects. The United States has some of the richest solar resources in the world and we should not miss an opportunity to create jobs and generate clean, reliable energy with this inexhaustible, domestic resource. USFWS can simultaneously encourage renewable energy development and protect eagles and their habitat. SEIA and its members would like to meet with USFWS to discuss these critical issues and develop strategies consistent with the dual purpose of protecting wildlife and increasing solar power generation.

Thank you for this opportunity to submit comments on these guidelines for the wind industry. We believe that these guidelines should not apply to the solar industry. We are eager to work with the USFWS to create eagle conservation guidance that facilitates solar power project development.

Best Regards,

Daniel M. Adamson
Vice President of Regulatory Affairs

Contacts

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These Guidelines Should Not Be Applied to the Solar Industry

SEIA appreciates the U.S. Fish and Wildlife Service's (USFWS) efforts to develop Eagle Conservation Plan Guidance. When developed in collaboration with stake-

holders and narrowly defined to achieve the conservation goal without unnecessary or inappropriate burdens on regulated entities, guidance of this nature can be beneficial to all parties. To achieve this goal, however, the Guidance should set forth clear standards that will result in improved efficiency for government action, reduced costs and delays to project developers, and clarity on procedures for the involvement of third parties.

As discussed in these comments, SEIA appreciates the intent of the Guidance to achieve these objectives. As currently proposed, the Guidance does not provide an effective mechanism for screening out projects affecting eagles and also includes numerous recommended measures that are expensive, burdensome, and unnecessary. While the draft Guidance applies to wind project development, SEIA is concerned that the Guidance will severely hamper, rather than aid, renewable energy development in general, and may specifically adversely affect solar energy projects now and in the future. This is because, as USFWS states, many of the concepts and approaches outlined in this Guidance "can be readily exported to other situations." [1] Thus, SEIA is concerned that many, if not most, of the costly and burdensome guidelines the USFWS is recommending for the wind industry could be applied to the solar industry as well. In fact, SEIA has already heard anecdotes from member companies that USFWS Field Offices have been applying this wind Guidance to their solar power projects. USFWS should ensure that no Regional or Field Offices are applying any aspects of this wind Guidance to solar power projects.

Application of the USFWS Eagle Conservation Plan Guidance, formulated in large part to address the impacts of wind power facilities, to the solar industry is inappropriate for many reasons. First, the solar industry employs different equipment and technologies, and utilizes land differently than the wind industry. Second, the solar industry has fundamentally different impacts than other energy industries. Both of these factors make it doubtful that solar power plants will directly impact eagles. For instance, eagle mortality due to direct strikes into panels or mirrors is extremely unlikely. Indeed, extensive deployment of solar power is a key element of the overall effort to address climate change, a phenomenon that threatens both eagles and their habitat. SEIA appreciates that the USFWS is extremely busy and developing guidance can be a lengthy process. However, guidelines that may be applicable to one industry are often inappropriate or impossible to implement for another industry. Thus applying the same Guidance to both wind and solar projects is unreasonable.

SEIA and its members would appreciate the opportunity to meet with USFWS to discuss these important issues before a decision is made to develop guidelines that would be applied to solar projects. Below are just a few examples of the many concerns that SEIA has with this Guidance.

USFWS Should Make a Threshold Determination Prior to Applying any Guidance

The Bald and Golden Eagle Protection Act states that anyone who "knowingly, or with wanton disregard for the consequences of his act take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner any bald eagle commonly known as the American eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof" may be subject to punishment under the Act.[2] As such, USFWS should have to make a threshold determination of a project's adverse impact on eagles prior to applying any Eagle Guidance to a renewable energy project. Without a threshold finding, USFWS has no way of knowing whether the proposed Guidance is applicable or appropriate for a given project. Moreover, without an initial understanding of a project's impact, USFWS cannot determine whether the Guidance will even be effective at monitoring and protecting eagles and their environment. We believe that threshold criteria of this nature would make it clear that solar projects are unlikely to affect eagles. In the rare situation where some impact could occur, any guidance that would apply to solar projects should make it clear that compliance would satisfy all legal requirements for take authorization and absolve the applicant of all liability under the Bald and Golden Eagle Protection Act. In addition, whether in the draft Guidance for wind projects, or guidance for "other situations" the problems discussed below that result in excessive cost and delay should be avoided.

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[1] U.S. Fish & Wildlife Service, "Draft Eagle Conservation Plan Guidance," at p. 8 (Jan. 2011). SEIA is also concerned that USFWS may apply this Eagle Guidance to condors and raptors generally.

[2] 16 U.S.C. § 668 (2011).

Pre- and Post-Construction Monitoring Is Unnecessarily Burdensome

The Eagle Conservation Plan Guidance provides that most wind projects undertake an initial site assessment; perform site-specific surveys; predict initial eagle fatalities; develop and apply advanced conservation practices and compensatory mitigation; and evaluate post-construction impacts. These multiple steps are extremely expensive and burdensome and most of this cost would be expended at the outset of a project's timeline, requiring developers to spend significant money with little or no confidence that USFWS will issue a take permit. In addition, this Guidance would further extend an already extremely long permitting process for renewable projects by requiring three years of pre-construction studies and two to five years of post-construction studies for each project, a regulatory burden faced by no other industry. Costly and lengthy monitoring should only be required in situations where the facts dictate.

Furthermore, USFWS expects all projects, regardless of their size or their category, to undertake the pre- and post-construction monitoring. Thus, a small renewable energy project would be required to perform the same initial site assessment as a much larger utility-scale renewable power plant. Also, a "category 3" project that is defined as posing minimal risk to eagles would still have to pay for and conduct the same pre-construction and post-construction surveys as a category 1 or 2 project that poses a high or moderate risk to the eagle population. Pre- and post-construction monitoring and surveying should be tailored to the size and characteristics of a project and should be implemented only for those projects that could seriously harm the eagle population.

Finally, as USFWS has acknowledged, "effects [of energy facilities on eagles] and how to address them at this time is limited."[3] Thus, it is unclear whether these multiple studies and surveys would be effective or provide a scientifically accurate picture of the proposed energy installation's impact on eagles. As such, this Guidance and the costly and burdensome steps therein should be applied only after the USFWS has made a threshold determination that the application of the Guidance is necessary. SEIA is eager to work together with USFWS and other interested parties to develop the specifics of such a threshold determination. Establishing a reasonable threshold for application of the Guidance will focus the efforts of USFWS, the renewable industry and others on areas where significant impacts may occur.

The CHAIRMAN. Next I recognize Mr. DeRosa, Senior Vice President for North American Project Development, First Solar, Inc. You are recognized for 5 minutes, Mr. DeRosa.

STATEMENT OF FRANK DeROSA, SENIOR VICE PRESIDENT, FIRST SOLAR, INC.

Mr. DEROSA. Thank you, Mr. Chairman, Representative Markey and members of the Committee. I am Frank DeRosa, Senior Vice President for Project Development for First Solar. Our mission is to deliver clean, affordable and sustainable energy. We developed the technology here in the United States that has made us one of the largest photovoltaic manufacturers and developers of solar energy in the world. We are headquartered in Tempe, Arizona, and manufacture panels in Perrysburg, Ohio. We will soon begin construction on a second manufacturing facility in Mesa, Arizona, that will employ 600 employees. We have 2,400 megawatts of power under contract with electric utilities in the United States. That is the equivalent capacity of almost three nuclear power plants.

Solar energy generated by First Solar technology keeps energy dollars here in the United States by using American technology and equipment built by American workers, and, of course, there is no imported fuel. We have three large solar projects in advanced development on BLM land as well as projects on private land.

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[3] Guidance at p. 11.

The Committee asked about roadblocks, but I would like to start with a few successes first. Congress, DOI and BLM have adopted policies over the last few years that are expediting permitting for solar. First Solar's 50-megawatt project in Primm, Nevada, is a good example. The BLM Las Vegas office permitted this project, devoted resources and qualified staff. I want to point out the work of one staff person, Greg Helseth, who kept this project on schedule, and as a result, we are now mobilizing to start construction of this project, and it will be the first solar project to operate on BLM land.

But I need to raise two critical issues. The first is the Programmatic Environmental Impact Statement process that is being run by the BLM, and the second is the impact on private—development on private land regarding endangered species. My written statement includes some other provisions that—other issues that I won't go into here.

In March 2011, BLM released the PEIS for public comment. It lists solar energy zones that could receive expedited environmental review. The preferred alternative encourages development in the zones, but allows development outside the zones. And that is critically important to us. Not restricting development to just the solar energy zones, which only comprise less than 1 percent of Federal land, is important because many projects, some of ours, have been in development well before the PEIS process started.

So we urge the BLM to, first of all, revisit the zones; to look at not only land compatibility, but technical and commercial feasibility of these projects, things like electric transmission access and the locational objectives of utilities. The second is to adopt a policy that allows development outside of these solar energy zones. And the third is to grandfather projects that are in advanced development, but are outside of these zones. One of our projects is an example of that as well. It was not included in the solar energy zones, but it has a power purchase agreement, and it has a position on the transmission queue. In other words, it is commercially viable and in a location that the utilities want.

My second point concerns the impediment on private land of projects that have to receive permits because of endangered species concern. There is an inconsistency between basically a prudent review schedule on Federal lands versus the 4 to 6 years that it takes on private lands, and we would ask the Committee to address this inconsistency and have one policy for both processes.

With that, I thank you for your time, and I will address any questions at the right time.

The CHAIRMAN. Thank you, Mr. DeRosa, for your testimony.

[The prepared statement of Mr. DeRosa follows:]

Statement of Frank De Rosa, Senior Vice President, Project Development, North America, First Solar

Mr. Chairman and Members of the Committee, thank you for the opportunity to testify.

Introduction and FS Background

I am Frank De Rosa, First Solar Senior Vice President for North American Project Development. Our mission is to deliver clean, affordable and sustainable energy. We developed the technology here in the U.S. that has made us one of the largest photovoltaic (PV) panel manufacturers and developers of solar energy in the world.

We are headquartered in Tempe, Arizona, and manufacture solar modules in Perrysburg, Ohio. We will soon begin constructing a second U.S. manufacturing facility in Mesa, Arizona that will employ 600 people, which will bring our U.S. employment to over 2,000 employees. This is part of a global workforce of approximately 7,000. We are a net U.S. exporter of our solar energy modules.

Solar energy generated by First Solar's technology keeps dollars here in the U.S. by using American technology, equipment built by U.S. workers, and the "fuel" from the sun. Jobs are created and dollars stay in our economy.

First Solar has three large solar projects in advanced development on BLM land.

Achievements

The Committee asked about roadblocks, but I would like to start with some successes.

Congress, the Department of the Interior, and the Bureau of Land Management have adopted policies over the last few years that are expediting permitting, removing obstacles, and streamlining interagency coordination, without sacrificing thoroughness.

First Solar's 50 megawatt Silver State North Project in Primm, Nevada is a good example. BLM's Las Vegas field office dedicated qualified staff and resources to the project. Greg Helseth, in particular, kept the project on schedule. We are mobilizing our crew to start construction for this project which is the first solar project on federal land in Nevada.

BLM took another significant step in April to support solar development on public lands with its rule proposing to allow the temporary segregation of lands in a pending or future solar generation right of way (ROW) application. This much needed rule will prevent the use of specious and speculative mining claims to slow down or prevent the development of solar energy projects on public lands.

Areas of Concern

But I'll raise two primary areas of concern as well as several areas of regulatory oversight that require continued consultation with industry. Of primary concern, the BLM's Programmatic Environmental Impact Statement for solar energy development, or PEIS, and the impact of the Endangered Species Act (ESA) on solar development on private lands.

PEIS

In March 2011, BLM released the PEIS for public comment. It lists "Solar Energy Zones" that could receive expedited environmental review. The "preferred alternative" of the PEIS encourages development in the Zones but does not prohibit development in other BLM areas. Not restricting development to just the Solar Energy Zones (which comprise less than 1% of the land under federal management) is important because there are many projects that began development well before BLM instituted its PEIS process. Plus, it is not clear how many of the Zones have all of the necessary attributes for a successful project, such as transmission capacity.

We strongly urge the BLM to:

1. Revisit the Zones not for just land use compatibility but for technical and economic feasibility of solar development, with particular attention to factors such as proximity to transmission and the needs of the local electric utility buyer;
2. Adopt a policy that allows development outside the Solar Energy Zones. Such development would still be subject to the stringent requirements of NEPA, so environmental oversight will be maintained.
3. Grandfather existing projects that are in advanced development. For example, First Solar's Silver State South Project was not included in a Zone but has a Power Purchase Agreement and a transmission interconnection position.

Businesses require a predictable, transparent set of rules when making multi-hundred-million dollar decisions. The BLM must not undermine viable, near term projects that were sited several years ago and remain subject to rigorous scrutiny under NEPA.

Endangered Species Act

I would also like to address a second federal policy issue that seriously impedes development of utility-scale solar projects on *private* land. If a proposed solar project on *private* land has the potential to adversely affect a listed (endangered) species or critical habitat, the U.S. Fish & Wildlife Service requires the solar developer to prepare a Habitat Conservation Plan prior to the Service preparing a Biological Opinion and issuing an Incidental Take Permit. Unfortunately, for projects with no Federal nexus (Federal funding, license or permit) under the current process it can

take from three to five years to receive the required permits versus four to six months to complete the permitting process for either projects on Federal land or with a Federal nexus. As a result, projects with no Federal nexus are typically abandoned or not undertaken at all.

In order to encourage solar development on private land, we recommend an approach that provides similar review timelines as followed for projects with a Federal nexus. One way to harmonize deadlines for preparing a Habitat Conservation Plan, Biological Opinion and issuance of an Incidental Take Permit would be to give the Service authority to enter into cost reimbursement agreements to augment its staff who review solar projects. Cost reimbursement agreements would allow the Service to hire third party resources to work under its direction to prepare the Habitat Conservation Plan and could also include provisions to augment funding for preparation of the Biological Opinion and Incidental Take Permit. Congress previously authorized BLM to enter into cost reimbursement agreements under the Federal Land Policy and Management Act. This authority has been very successful in improving the processing of BLM right of way grants.

Finally, I recommend that the Committee consider a recommendation put forth by Senator Feinstein that Secretary Salazar establish a group of Service staff dedicated to permitting renewable energy projects on private land.

Stakeholder Engagement

Before concluding, I would like to make an observation related to stakeholder engagement by the BLM and the Service. Whether the topic is solar zones, solar rental policy, mitigation fees, reclamation bonding or a host of other regulated areas, the industry should be brought to the table as early as possible in the development of rules and regulations the impact solar development. The track record on early engagement in the rulemaking process is mixed, but we believe that improving transparency and predictability in the regulatory process should be a goal we work toward together.

Several recently released policies illustrate why industry involvement in the formation of guidance documents and policies applicable to solar projects is absolutely critical. The reclamation bonding policy released by BLM in October, 2010 provides an example.

The bonding policy requires the solar industry to comply with many of the bonding requirements designed for mining projects even though they are not directly application to solar development. For example, provisions to address mine clean-up when mines are abandoned because they are no longer profitable. Solar projects are secured over their lifetime by a valuable power purchase agreement and constructed using recyclable materials that have recognized reclamation value. If the solar industry had been involved earlier in the development of the bonding policy, we believe we could have created a better policy that offered a broader set of bond instruments and required more reasonable bond amounts.

We would welcome the opportunity to review the bond instruments currently accepted by BLM and expand the policy to include financial assurance mechanisms that are accepted for decommissioning other types of industrial projects.

The Solar Energy Interim Rental Policy issued by BLM on June 10, 2010 was likewise developed without sufficient industry involvement. The rents established by the policy appear to have been based largely on the value of irrigated agricultural lands, which have a higher value than the non-irrigated lands on which most projects are proposed. Inflated rents are obviously an obstacle to development. Additionally, to the extent that rents on BLM lands are higher than rents on similar private lands, the rental policy may inflate the costs of mitigating project impacts on special-status species as the value of private lands will increase.

As a final example, BLM's 2010 memorandum on golden eagle protection measures for renewable energy projects could have also benefited from industry involvement in its development. The policy requires the Service's approval of an Aviation Protection Plan as a precondition to the issuance of a Record of Decision and places no conditions on the rationale of the Service in the event that it decides to reject such plans. Given that the rejection of a plan can result in a requirement to redesign the site late in the project approval process, the Service's unfettered discretion on this topic creates significant uncertainty for developers.

Some of this uncertainty should soon be resolved. BLM's golden eagle policy is a temporary measure and will be replaced when the Service establishes criteria for programmatic golden eagle take permits. The Service recently issued Draft Eagle Conservation Plan Guidance for wind projects, which is expected to serve as a model for programmatic golden eagle take permits in other contexts. We look forward to working with the Service when it turns to the development of eagle conservation guidance for solar projects because the protection measures needed at wind farms,

where even temporary contact with the facility operations could result in a take, are not necessarily required for utility scale solar projects. If structured correctly, these proceedings could serve as a model for how to engage industry stakeholders in other policy-making proceedings.

Conclusion

Thank you for allowing me to testify today. To summarize:

- We appreciate DOI's and BLM's commitment to opening federal lands to American renewable energy supplies that will reduce imports and create jobs. We applaud their progress.
- We urge BLM not to restrict solar development to specified Solar Energy Zones and to recognize the considerable effort and expense that companies have invested in existing projects.
- We ask the Committee to address the inconsistency in the treatment of private lands with and without a federal nexus.
- We look forward to partnering with Congress, the Department of the Interior and related agencies as solar policies evolve to meet the needs of a growing industry.

I ask that my written testimony and a copy of Fist Solar's formal response to the PEIS be added to the record.

The CHAIRMAN. And now Dr. Piszczalski. And if you can state your name so we will all know the correct way in case we run across you again someplace.

Dr. PISZCZALSKI. It is pronounced Piszczalski. So it doesn't look as daunting as it is.

The CHAIRMAN. You are recognized for 5 minutes. Thank you very much.

STATEMENT OF MARTIN PISZCZALSKI, INDUSTRY ANALYST, SEXTANT RESEARCH

Dr. PISZCZALSKI. Thank you, Chairman Hastings and the full Committee. Again, my name is Martin Piszczalski, and I am an industry analyst with Sextant Research. I will be giving you a perspective of how the industry is, I believe, leading to a rather disappointing performance.

If we look at the number of agencies involved, and look at the number of regulatory issues that they are—over land use, habitat disturbance and so forth, that it makes it overwhelming for the developers to move forward in many respects. And before I go too much farther, I would like to point out that of the 60 Federal and State agencies that regulate renewable energy, I have not encountered officials that are obstructionists. Indeed they are advocates of renewable energy. But let us look at what they are facing.

For a single renewable energy project, there can be 30 agencies over that 1 project, and these 30 agencies, the lineup changes if you go to another site. There is not a standard uniform process, sequences and so forth, that these agencies do. Consequently, developers are surprised, caught off guard and hitting these uncertainties.

For instance, imagine how many permits and approvals you believe are necessary for one project. We can see right now we are hitting 100 permits per project, and the number is going up. Let us say the developer anticipates 50 of these permits. I think they would be doing a pretty good job. That means they did not anticipate another 50. These lead to delays. If a delay is only 2 weeks, multiply that times 50, and you have a project that is a couple of years behind schedule.

Unfortunately officials are not terribly sensitive to the delay issue. Nevertheless, the time value of money is very significant. In the early stages this is high-risk money. In the later stages we have debt service levels for the term, for the construction loans. And consequently, we have companies that are reeling under the financial burden.

Can I have the next slide, please?

This shows BLM's timeline internally for the many permits and approvals that BLM alone requires. I would like to applaud BLM for even providing developers with this timeline chart. Most agencies, you are pretty much on your own. You are even on your own to determine which agencies you have to get in the mix.

Could I have the next slide, please?

Consequently, the developer is scaling a mountain of regulatory hurdles that are vague, contradictory, uncertain and ambiguous.

If I could have the next slide, too, please.

Earlier this month, we heard Director Abbey stress that the BLM is not denying projects. And he said, we just delay them. And as I indicated here, delays don't kill the project, they kill the company. An example of this would be the solar that ran out of money. So we have projects that have one owner after another owner, and unfortunately the new owner might not be able to take advantage of the previous permitting work, and then the clock starts over again.

I would like to just kind of move forward in terms of what would a good regulation look like where it completes all permitting in just 18 months. So not just BLM. Remember, if we have 100 approvals, all of them must be approved, or you might as well not have any of them approved. So let us get all permitting approved in 18 months. We protect the environment. We have what I will call a deterministic transparent finish line. We know what permits we need. If we do those steps, we will get our permits, and we will operate.

And last, we don't need an army of lawyers, and court time is routine for those companies in our industry. And I hope that you can see, looking at the scope of the problem, that we need something that will massively simplify the overall process. And I would be happy to go into what some of those solutions might be through your questions.

Thank you very much. I appreciate the honor to be here.

The CHAIRMAN. Thank you very much, Dr. Piszczalski. I will get it right here.

[The prepared statement of Dr. Piszczalski follows:]

Dr. Martin Piszczalski
Industry Analyst
Sextant Research

Testimony on "American Energy Initiative: Identifying Roadblocks to Wind and Solar Energy on Public Lands and Waters, Part II—The Wind and Solar Industry Perspective"

June 1, 2011

Exhibit 1 **Some Regulatory Categories for Renewable-Energy Permitting**

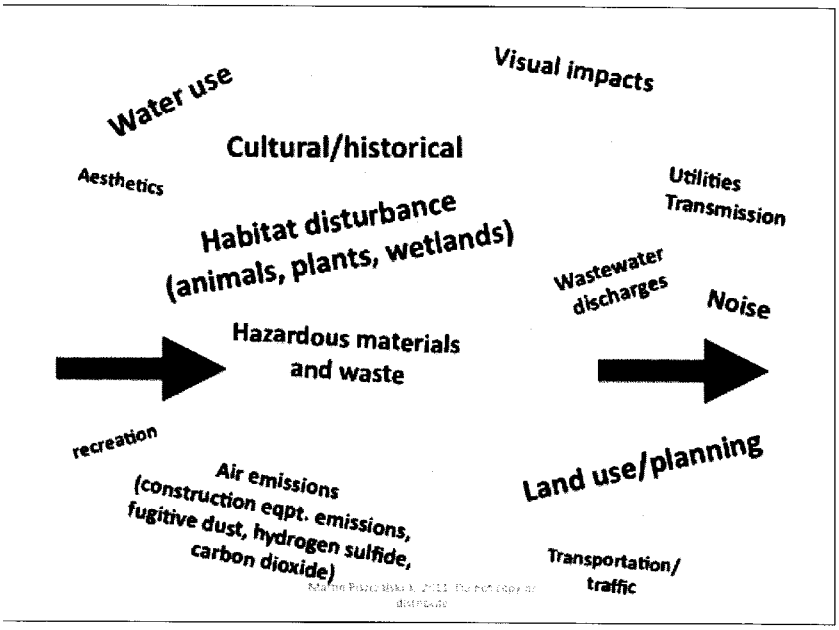
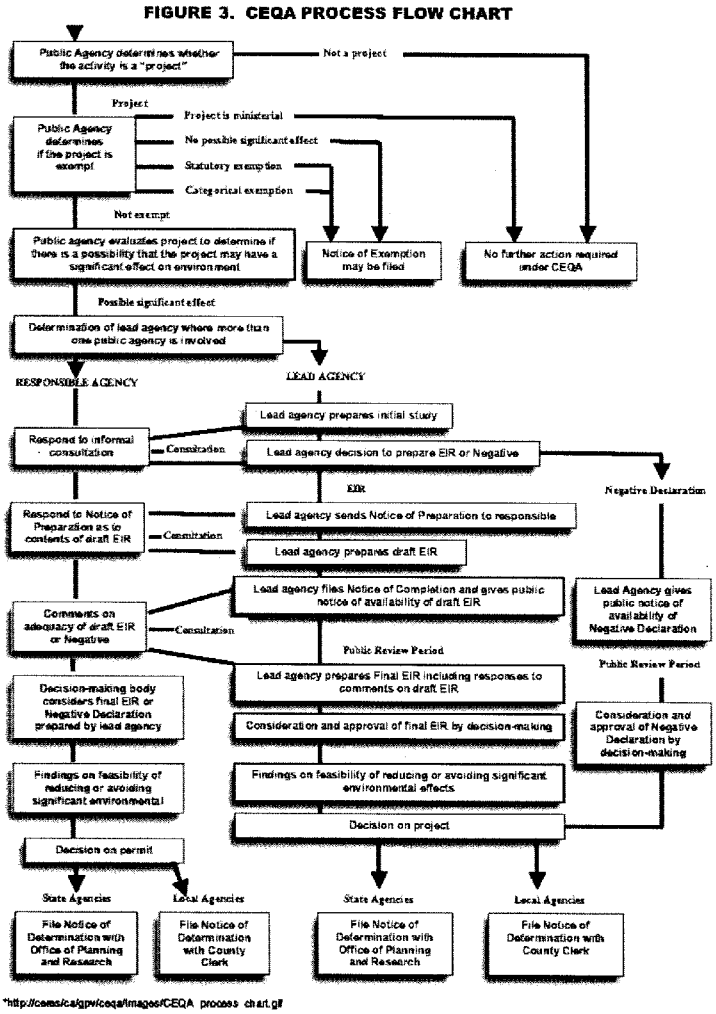


Exhibit 2, **Which Agencies? California Environmental**



From: Martin Piszczalski, (734) 657.0018 martin@sextantresearch.com

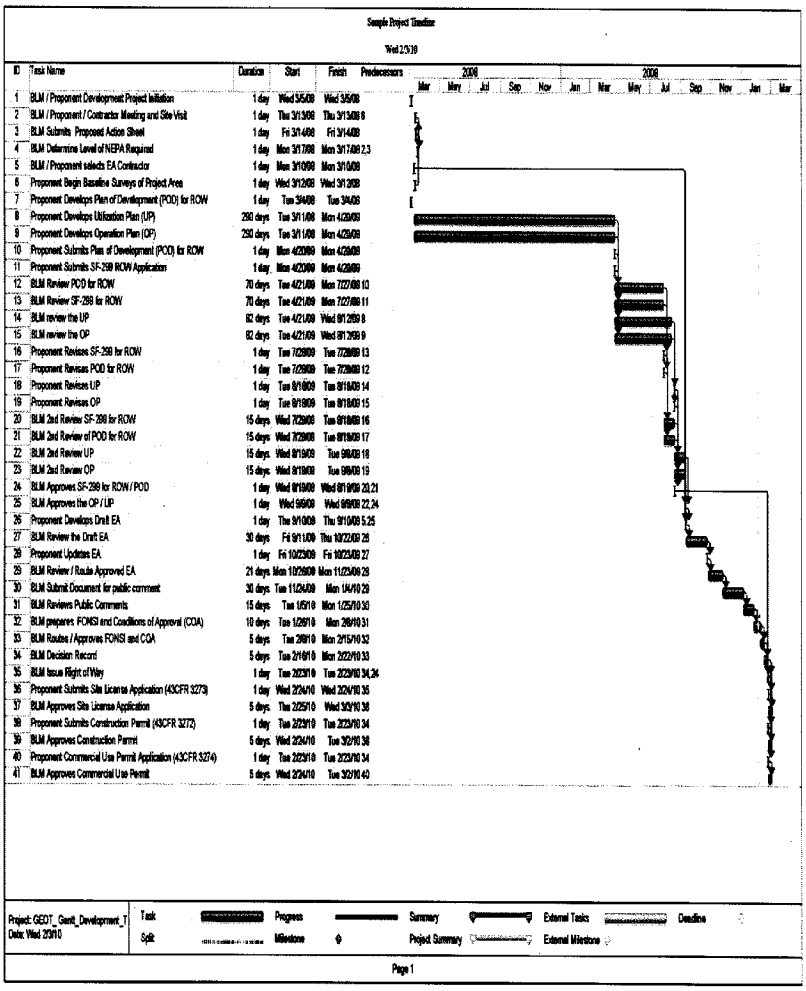
Exhibit 3, Which Agencies Participate? Some Factors

- Geographical location of project (which state, county. . .)
- Owner(s) of the resources (Federal, private, State, tribal,. . .)
  - Which Federal agency is owner?
- Specific owner for each right: mineral, surface, and water at the site
- Agency funding the development
- Particular technology
- Cultural, Native-American issues
- Endangered, threatened species
- For geothermal: depth of well, water temperatures, resource chemistry
- Power plant size

- Etc.

Source: Martin Piszczalski, (734) 657.0018 Martin@sextantresearch.com

Exhibit 4, **Sample Project Timeline, BLM NV**



From Martin Piszczalski, (734) 657.0018 martin@sextantresearch.com

Exhibit 5 'Permitting Risk,' A Definition

I define "permitting risk" as all things that unexpectedly delay getting approval. From a developer perspective these include all the unexpected i.e., after the project is well underway:

- new study ordered
- new set of regulations that must be met
- a new form or application that must be submitted

- unexpected mitigation
- A regulatory requirement takes much longer than planned or expected
- another agency that must give an approval (i.e., an agency which the developer had not known was part of the process)
- learning that the submitted application is incomplete
- uncertain if agency has regulatory authority to issue permit/approval (hence, agency may not act)
- discovering that the expected process, procedure or sequence is different than what is actually required by an agency
- learning that one agency's approval is contingent on the action/approval of another agency
- surprised by new stakeholders that previously had not been identified
- a citizen court challenge either to the developer or challenging one of the regulatory agencies
- miscalculating the time, effort, cost to secure approval

In the most severe form, permitting risk is getting denied the necessary approval(s). Alternately, it could have approval contingent on conditions so onerous that they knock the project out from being commercially viable.

My definition of "permitting risk" is not intended to blame anyone. Rather permitting risks are mainly delays. They negatively impact financing. They impact the time value of money and greatly increase debt service costs. Some developers have a "burn rate" alone of $2 million/month.

Considering that one project was recently cited as requiring 100 permits and approvals, it should be easy to see how multiple delays occurred, that cumulatively added years to the project. Those delays add millions of dollars to project costs. For instance, Bronicki of Ormat said a geothermal project takes "6 or more years & half of that is taken up in permitting."

Source: Martin Piszczalski (734) 657.0018 martin@sextantrearch.com Martin Piszczalski© 2011

The CHAIRMAN. Our final witness on this panel is Mr. Reicher, who is with the Steyer-Taylor Center for Energy Policy and Finance at Stanford University. You are recognized for 5 minutes.

STATEMENT OF DAN W. REICHER, EXECUTIVE DIRECTOR, STEYER-TAYLOR CENTER FOR ENERGY POLICY AND FINANCE, STANFORD UNIVERSITY

Mr. REICHER. Chairman Hastings, Ranking Member Markey and members of the Committee, I am Dan Reicher, Director of Stanford University's Steyer-Taylor Center and a faculty member of the Stanford Law and Business Schools. Prior to Stanford, I was Director of Climate Change and Energy Initiatives at Google, had senior roles in energy technology at investment firms, and had served as Assistant Secretary of Energy for Energy Efficiency and Renewable Energy at DOE.

In my written statement, I review the many obstacles to a long-sought goal: the successful deployment of renewable energy at large scale and reasonable cost. Let me emphasize that siting renewable energy projects on public lands, the focus of today's hearing, is an obstacle to large-scale renewable energy deployment, but it is a relatively modest one that to a large extent Secretaries Salazar and Vilsack are effectively addressing.

What I worry about more than siting renewable energy projects on public lands is successfully navigating the complicated road that takes the renewable energy technology from the first gleam in a scientist's eye all the way to the routine construction of hundreds of full-scale commercial plants on all kinds of lands, private and public. In this regard, I am concerned that we are increasingly getting beaten by the EU and Asia, particularly China. Thus, while

in 2004 the U.S. had approximately 20 percent of total global clean energy investment and China just 3 percent, in 2010 China had 20 percent of that investment and the U.S. 19 percent, with this gap widening rapidly.

And, Mr. Chairman, the stakes are enormous, with the International Energy Agency forecasting that over $5.7 trillion will be invested in renewable energy globally over the next two decades. 2010 alone saw more than $127 billion in renewable energy project financing. Unfortunately, it is looking less and less likely that investment will be here in the U.S. As one investor recently put it, we are not only seeing companies start here in the U.S. And then move overseas, but we are increasingly seeing companies start overseas and stay overseas.

Mr. Chairman, I strongly urge you to take stock of the major obstacles we face in our Nation's regaining its lead in renewable energy. Siting renewable energy projects on Federal lands is worth a look, but if that is where you stop, you will be seriously short-changing U.S. national security, competitiveness, and environmental protection.

My written statement highlights four critical obstacles. The first is inadequate R&D funding. The good news is that the U.S. has led the world over the last several decades in energy R&D. The bad news is that Federal R&D spending in Fiscal Year 2008 accounted for just 2.6 percent of total Federal nondefense R&D spending, a tenfold decline from its peak of approximately 25 percent in 1980. R&D spending has increased modestly since then, but we still have a long way to go to where our government is investing adequately. To make things worse, U.S. energy companies currently spend little on R&D compared with many other industry sectors, while our competitors ramp up their spending aggressively.

The second obstacle is technology demonstration, where small, generally underfunded startup companies work to move a technology out of the lab to a point where it is ready for initial commercialization. The good news is that clean tech venture capital investors are spending billions each year to make this happen. The bad news is these startups often have a difficult time breaking into markets dominated by large utilities and regulated by public utility commissions.

The third obstacle and probably the biggest is commercialization. It involves crossing the colorfully but accurately named "Valley of Death," where companies, having demonstrated that a technology works in a pilot plant, now have to prove that it works at full commercial size.

In the energy investment firm where I worked, I first peered into the Valley of Death, seeing there the remains of many abandoned energy projects that died trying to get to commercial scale. We and most other firms simply couldn't shoulder the investment risk in the scale-up of an energy technology where a single project can cost hundreds of millions, or, in the case of nuclear plants, even billions of dollars. In the end we made our biggest investment in corn ethanol plans, well proven for decades at large commercial scale.

The Department of Energy Loan Guarantee Program has helped to bridge the Valley of Death, having issued as of May commitments to 27 projects representing nearly $30 billion in financing.

This is a good program, but it is subject to annual appropriation and therefore lacks the certainty the financial community needs to commit to long-term investment in higher-risk projects.

Far better is the bipartisan proposal to create a Clean Energy Deployment Administration, or CEDA, that would have an array of financial tools to accelerate private-sector investment. Funded with $10 billion, CEDA could become a self-sustaining entity, that is no additional appropriations, based on its authority to take financial stakes in projects. And while CEDA would nominally sit within DOE, it would enjoy significant independence with its own Administrator and Board of Directors.

The Senate Energy Committee adopted CEDA in the last Congress on a bipartisan basis with broad support, including the U.S. Chamber of Commerce, The Nuclear Energy Institute and renewable energy trade groups, and the House Energy and Commerce Committee added a version of CEDA to the Waxman-Markey bill by a 51-6 vote.

The final obstacle is cost competitiveness, where technology has been proven to work at commercial scale, but where it often can't yet fully compete with traditional technologies. This is where Federal tax incentives come in. Unfortunately, these incentives have often been available for only short periods of time, causing a boom-and-bust cycle. Of particular concern today is the incentive for wind that will expire in 2012 unless extended. And even where these incentives are in place, companies often can't use them if they lack taxable income. Congress created an effective alternative providing companies with a cash grants in lieu of a tax credit, but this program will expire in December unless extended.

In closing, I spent the last 4 years at Google. Coming from the energy sector, I was struck by how R&D, investment and policy come together so effectively to build an entirely new industry, the Internet. We must take a similarly coordinated approach between the private sector and the government to seize the opportunity in clean energy. While siting projects on public lands needs some attention, it is the other——

The CHAIRMAN. Director, I have to ask you to summarize and close, if you wouldn't mind.

Mr. REICHER. Just one sentence. If we don't get our act together, countries like China and Germany will be the winner of this marathon with a prize worth literally trillions of dollars and millions of jobs hanging in the balance. Thank you.

The CHAIRMAN. Thank you very much.

[The prepared statement of Mr. Reicher follows:]

Statement of Dan W. Reicher, Executive Director, Steyer-Taylor Center for Energy Policy & Finance at Stanford University, and Professor, Stanford Law School, Lecturer, Stanford Graduate School of Business

Mr. Chairman, Ranking Member Markey, and members of the committee, my name is Dan Reicher and I am pleased to share my perspective on obstacles to renewable energy deployment on public lands. I am Director of Stanford University's Steyer-Taylor Center for Energy Policy and Finance and a faculty member of the Stanford Law School and the Graduate School of Business. I also chair the board of directors of the American Council on Renewable Energy (ACORE) and serve on the Board on Energy and Environmental Systems of the National Academy of Sciences and the board of directors of the American Council for an Energy Efficient Economy (ACEEE).

Prior to my role at Stanford, I was Director of Climate Change and Energy Initiatives at Google. Prior to Google, I was Co-Founder and President of New Energy Capital, a private equity firm that invests in clean energy projects and Executive Vice President of Northern Power Systems, a venture capital-backed renewable energy company.

Prior to my roles in the private sector, I served in the Clinton Administration as Assistant Secretary of Energy for Energy Efficiency and Renewable Energy, the Acting Assistant Secretary of Energy for Policy, and Department of Energy Chief of Staff and Deputy Chief of Staff. Earlier in my career I was a staff member of President Carter's Commission on the Accident at Three Mile Island and an Assistant Attorney General in Massachusetts.

In my testimony I will review the many obstacles to a long-sought goal: the successful deployment of renewable energy at large scale and reasonable cost in our country, with all the resulting economic, security and environmental benefits. Let me emphasize that siting renewable energy projects on public lands—the focus of this particular hearing—is indeed an obstacle to large-scale renewable energy deployment. But it is a relatively modest one and an obstacle that, to a large extent, the Department of the Interior under Secretary Salazar and the Department of Agriculture under Secretary Vilsack are effectively addressing.

What I worry more about more than *siting* renewable energy projects on public lands is successfully *navigating* the long and complicated road that takes a renewable energy technology from the first gleam in a scientist's eye and an early pilot project *all the way* to the routine construction and operation of hundreds of full-scale commercial plants with low-cost financing and good paying jobs on all kinds of land—private and public. And in this regard I am concerned that we are increasingly getting beaten in the race down this road by the European Union and Asia, in particular China. Thus, while in 2004 the U.S. was the focus of approximately 20% of total global clean energy investment and China accounted for just 3%, in 2010, China saw 20% of that investment and the U.S. 19%—and this investment gap is widening rapidly.

And Mr. Chairman, the stakes are very large. The International Energy Agency forecasts that over $5.7 *trillion* will be invested in renewable energy globally over the next two decades. 2010 alone saw over $127 billion invested globally in renewable energy project financing. Unfortunately, it is looking less and less likely that investment will be here in the U.S. As Will Coleman, a venture capital investor in clean energy companies, said in a recent Senate Energy and Natural Resources Committee hearing: *"We are not only seeing companies start here in the U.S. and then move overseas, but we are increasingly seeing companies start overseas and stay overseas."* And as we cede our competitiveness in renewable energy we are also losing the national security benefits that come with their development and deployment in our nation. As U.S. Navy Vice Admiral Ret'd Dennis McGinn told the House Select Committee on Energy Independence last December:

> [W]ithout comprehensive clean energy legislation, market enhancing policies and decisive action by our nation, fierce global competition, instability and conflict over dwindling supplies of fossil fuels and increasing global warming will be a major part of the future strategic landscape. Moving expeditiously toward clean and sustainable energy choices can greatly lessen that danger, improve global and national economic security and help us to confront the seriously growing challenges of global climate change and energy insecurity.

I would note that Admiral McGinn recently became President and CEO of the American Council on Renewable Energy.

Mr. Chairman, I strongly urge you to take a walk down this road to get a real sense about what it will take to put the U.S. back in the leadership position it once had in renewable energy. There is some merit in taking a look at renewable energy siting issues on federal lands and waters—the focus of this hearing—but if that is where you begin and end you will be seriously short-changing U.S. national security, competitiveness, job creation, and environmental protection. And as you look at renewable energy development on public lands and waters, let me make a critical point: deployed significantly and well, renewable energy technologies can actually be central to *protecting* these important public resources from the *impacts* of climate change such as habitat loss and species decline. Put simply, addressing climate change—through careful but significant development of zero carbon renewable energy sources on public lands and waters—offers a new strategy for stewardship of these public resources.

Mr. Chairman, your May 13 hearing on the subject we are addressing today saw several committee members and witnesses emphasize that the real problem for renewable energy development is not so much Interior Department permitting—which

is being improved—but instead obstacles to getting a renewable energy project built and operating like a power purchase agreement, adequate financing, the availability of transmission, and reliable tax incentives. I would echo this conclusion The testimony that follows explores these and other obstacles to the successful deployment of renewable energy at large scale and low cost including inadequate R&D funding and the serious challenges of technology demonstration, commercialization, and cost competitiveness. I conclude by providing my perspective on the siting of renewable energy projects—solar, wind, and geothermal—on public lands and waters.

1. Obstacle: Inadequate Funding of Research and Development

The first step on the road to the successful deployment of renewable energy at large scale and low cost begins with research and development: a scientist or engineer pushing the boundaries of an existing technology, inventing an entirely new one, or advancing the basic science which underlies both. R&D funding by the U.S. government has played a pivotal role in energy technology innovation for decades, probably more than any other single source globally. As a 2010 National Academy of Sciences (NAS) Study concluded, "[f]ederally funded basic R&D provides the starting point for many (if not most) significant energy-related innovations, and federally funded assistance for technology development often is the catalyst for turning technological innovations into practical products that are sought in the marketplace." With these practical cost-effective clean energy products come many benefits starting with significant job creation. They can also greatly reduce the price needed to control carbon emissions. And they can enhance national security by cutting dependence on foreign oil.

The good news is that U.S. has led the world over the last several decades in basic and applied research—both public and private—leading to major progress in a broad array of renewable energy technologies from solar, wind and hydropower to geothermal and biomass. The bad news is that more recently we have been increasingly starving U.S. federal energy R&D, while private sector energy R&D funding has also been declining. Measured in multiple ways we have a seen dramatic overall reduction in the *federal* commitment to energy R&D funding. The 2010 NAS study found that measured across different key research areas, federal R&D spending on energy in FY 2008 was approximately one-twentieth federal R&D spending on health, one-sixth of federal R&D spending on space, and one-fifth of federal R&D spending on general science. *Compared across time, the study found that energy R&D spending in FY 2008 accounted for approximately 2.6 percent of total federal (nondefense) R&D spending, a 10-fold decline from its peak of approximately 25 percent* in FY 1980.

In 2008, total U.S. RD&D spending on low-carbon energy technologies amounted to less than $2.5 billion, with just $500 million assigned to R&D for renewables. In contrast, the National Institute of Health (NIH) received federal R&D funding worth close to $30 billion. Over the past fifty years, such generous funding for innovation in the health sector has created vast economic growth and jobs, ensuring U.S. global leadership in related technologies. It is time the energy sector followed this example.

Compared internationally, the NAS study found that U.S. spending on energy R&D as a share of GDP is considerably lower than that of several other leading industrialized countries. As an example, since 1990, Japan's energy R&D spending as a share of its GDP has remained at about 0.08 to 0.10 percent. In contrast, U.S. spending as a share of GDP continued to fall until about 1997, eventually leveling off at between 0.02 and 0.03 percent. It is worth noting that, from 1992 to 2007, Japanese government spending on energy R&D also exceeded U.S. federal spending on an absolute basis, even though Japan's GDP is about one third that of the United States. And the big new player on the block is China where in just the last couple of years government energy R&D funding has not only surged but U.S. companies are opening new research facilities. As an example, the Applied Materials Corporation, the world's largest supplier of the equipment used to make semiconductors, solar panels, and flat-panel displays, recently opened its newest and largest research lab in China.

All of this suggests that energy R&D is less of a national priority in the United States than in other industrialized nations. And while the 2009 American Recovery and Reinvestment Act provided a significant one-time increase in federal energy R&D expenditures, this is simply not the kind of sustained change in federal R&D spending that would indicate advanced energy technologies to be a high national priority. President Obama's recently released budget request for FY 2012 would provide $3.2 billion for DOE's Office of Energy Efficiency and Renewable Energy, a 44% increase over Fiscal Year 2010 and, within that, $1.1 billion for renewable energy programs, an increase of about $430 million over FY 2010. It would also provide significant funding for the offices of electricity, fossil energy and nuclear energy. If en-

acted, this budget would provide a significant increase in total spending in DOE energy programs—to about $5.5B—at a time of fiscal austerity but, as emphasized above, the potential returns from energy R&D are very large. And by comparison with federal R&D spending in other areas this spending level would still be relatively modest. The American Energy Innovation Council, a group of current and former CEO's from major American companies like GE, Lockheed Martin and Microsoft recently recommended that federal energy R&D spending should be increased to something on the order of $16 billion.

One particularly deserving recipient of federal R&D funding is the recently created Advanced Research Projects Agency-Energy (ARPA–E). DOE's ARPA–E has the potential to mirror the success of DARPA, within the Department of Defense. Designed to pursue an entrepreneurial approach to energy R&D, ARPA–E focuses on "out-of-the-box" transformational energy research that industry by itself cannot or will not support due to its high risk but where success would provide dramatic national benefits. Without adequate federal funding, however, the institutional promise of ARPA–E will not be realized. At present, ARPA–E is significantly underfunded, with current budget allocation under the recently passed Continuing Resolution of $180 million. This represents about 0.6% of NIH's annual funding and 6% of DARPA's annual budget. As a result, in its first year of operation, ARPA–E was able to support only 37 of the 3,700 proposals it received. President Obama has requested $550 million in the FY12 budget for ARPA–E.

In addition to public sector funding of energy R&D, transforming the U.S. energy sector to be more secure, competitive, and clean will also require a significant increase in *private* sector R&D. Compared with other U.S. industries, the U.S. energy sector currently spends very little on R&D as a ratio of sales, a standard measure. The NAS report, cited above, concluded: *"Private-sector funding of energy-related R&D is also critical for achieving the innovations needed to reduce GHG emissions on a large scale. Here too, however, the current picture for U.S. industries appears rather bleak."*

Data suggest that the current rate of R&D spending by U.S. energy industries is far below that of other industries. In 2006–2007, R&D spending for all U.S.-based companies in the top 1,400 global R&D performers was 4.5 percent of sales, while firms in 11 research-intensive U.S. industries spent an average of 6.5 percent. Three industries showed especially high percentages: pharmaceuticals and biotechnology (16.7 percent), software and computer services (10.6 percent), and technology hardware and equipment (9.6 percent). By comparison, R&D spending by top U.S. utilities (among the top 1,400 global R&D performers) averages 0.7 percent of sales. And utility R&D managers have reported that, due to deregulation, utilities were shifting their R&D focus from collaborative projects benefiting all utilities to proprietary R&D and from long-term advanced technology R&D (e.g., gas turbines and fuel cells) to short-term projects that would be profitable and provide a near-term competitive edge.

The level of private sector spending on R&D is motivated mainly by its value to a firm's profitability. The NAS study concluded that *"substantial increases in [private sector] energy-related R&D expenditures will occur only if government policies create conditions under which firms anticipate that such spending is likely to yield attractive financial returns in the foreseeable future."* These include the federal government's own commitment to energy R&D spending as well as policies that can help move R&D results down the road to successful commercialization

2. Obstacle: Demonstration of Technologies

We have seen a serious increase in recent years in venture capital investment in clean energy technology with $7.8 billion invested in 2010 alone. This investment generally moves energy R&D from the lab to a point where a technology is demonstrated at pilot scale and ready for initial commercialization and subsequent broad-scale deployment. There are a number of challenges in moving venture-backed clean energy technologies out of the lab to this point. A recent hearing in the Senate Energy and Natural Resources Committee considered global investment trends in clean energy technologies and the impact of domestic policies on that investment. Will Coleman, a partner at Mohr Davidow, a venture capital firm, discussed four obstacles that energy technology start-ups face in demonstrating their technologies are ready for initial commercialization.

First, energy markets are often difficult to enter for a new player because they are either heavily regulated or dominated by incumbents, and in the case of electricity markets we often have both. The patchwork of state and federal regulations is often difficult to navigate for any company, in particular a small start-up. Second, Coleman stressed that in the case of renewable energy technologies that generate electricity, the only road to market is often through utilities—and the public utility

commissions that oversee them—both often risk averse. Market entry for these grid-based based technologies can often take five to ten years in the pilot stage and small deployments before a state public utility commission will typically approve cost recovery for broad technology deployment. This timeframe seriously dampens interest among many venture investors in renewable energy start-ups who often need to see growth much more rapidly.

A third challenge for most energy technology start-ups is that without operating track records, they are unable to get access to low cost capital to advance their technologies toward commercialization and full-scale deployment. This means that they typically need to raise higher cost equity or some combination of equity, mezzanine financing, and debt to build early plants. Often the latter two sources of lower cost capital are not available at this high-risk stage. And Coleman notes that this can have a perverse effect: *"if venture capital firms don't anticipate low cost capital being available to move these technologies to scale, then they are unlikely to invest in the early technology development in the first place."*

The fourth obstacle is that even where there are incentives and tax credits to support new technologies, many of them are not designed for small emerging companies. Startups do not have the balance sheets or track records of larger corporations and have trouble securing and monetizing the credits, incentives, and loans that have been made available. This often forces start-ups to enter into awkward third party relationships or go to market through the big incumbents, which can have dramatic impact on their value and, importantly, investor interest.

Coleman concluded in the Senate hearing:

> "If time didn't matter, if we were not in a race to remain competitive in the global economy, if the private market valued our national security, the domesticity of our products, and the health and environmental impacts, then ideally we would let the market work to adopt the best solutions. Unfortunately, time does matter and the market does not value these national strategic interests. For these reasons, whether we like it or not, our government must play a proactive role in encouraging clean energy development."

3. Obstacle: Technology Commercialization—The "Valley of Death"

Moving down the renewable energy road, the step from R&D and venture capital-backed demonstrations to full-scale commercial projects and products may well be the biggest obstacle of all in the successful deployment of renewable energy at large scale and low cost. This part of the road involves crossing the colorfully but accurately named "Valley of Death" that sits between the early stages in the research and development of an energy technology and its full commercial deployment.

Earlier in my career I helped form and lead a private equity firm to invest in clean energy projects. We worked with bankers, engineers, and construction firms to get real energy projects financed and built. It was at this firm that I reached the toughest point along the road to large-scale cost-effective deployment of renewable energy. Day after day we received investment proposals for energy projects with profiles that simply exceeded the risk threshold of our capital. Had the underlying technologies been proven in a lab? Generally yes. Had they operated in a pilot plant? Sometimes. Had they operated at commercial scale? Rarely. There were relatively few proposals that fit our investment profile. In the end, we used the biggest chunk of our capital to finance corn ethanol plants—a technology well proven at large commercial scale for decades.

It was at this firm that I first peered into the Valley of Death, seeing there the remains of hundreds of abandoned energy projects: based on exciting technologies supported by DOE or venture capital-firms; that worked well in pilot plants but died trying to get to commercial scale; from wind, solar, biomass and geothermal, to advanced coal and natural gas, transmission and distribution, nuclear power and beyond. We and most other private equity firms simply couldn't shoulder the risk in the commercial scale-up of an energy technology, where a *single* project can cost hundreds of millions or, in the case of nuclear plants, even billions of dollars.

It was interesting landing next at Google, where engineers spend months writing computer code for a new software product, test it, and then one day, in my simple terms, push a button and it's deployed. Google engineers make improvements to the product and then launch a new version. There are certainly tough engineering challenges and products that fail. It's just that with software, products generally succeed and fail faster and more cheaply than in the energy world. In the energy technology world, months turn into years, and years into decades, and billions can be spent on a single technology before even one commercial plant or factory is operating. In the Valley of Death companies struggle to obtain the financing needed to deploy their technologies at commercial scale—ironically, the very point at which their tech-

nologies could begin to have a meaningful impact on job-creation, energy security, and environmental protection.

The Department of Energy Loan Guarantee Program, to its credit, has been working hard to address the investment challenges of the Valley of Death for renewable energy and other technologies. As the program's director Jonathan Silver said in a recent Senate Energy and Natural Resources Committee hearing:

> The Department of Energy's loan programs were designed to address these impediments and fill this financing gap. Loan guarantees lower the cost of capital for projects utilizing innovative technologies, making them more competitive with conventional technologies, and thus more attractive to lenders and equity investors. Moreover, the programs leverage the Department's expertise in technical due diligence, which private sector lenders are often unwilling or unable to conduct themselves.

The DOE loan program office administers the Section 1703, Section 1705, and ATVM loan and loan guarantee programs. The 1703 program, created as part of the Energy Policy Act of 2005, supports the deployment of innovative energy technologies. As a result of the recently passed 2011 Continuing Resolution, the program currently has $18.5 billion in loan guarantee authority for nuclear power projects, $4 billion for front-end nuclear projects, $8 billion for advanced fossil projects, $1.5 billion for energy efficiency and renewable energy projects, and $2 billion in mixed authority. In addition, and for the first time, the 1703 program, historically a "self pay" credit subsidy program, now has $170 million in appropriated credit subsidy, which will support a small number of loan guarantees for renewable energy projects.

The Section 1705 program was created as part of the American Recovery and Reinvestment Act of 2009 to jump-start the country's clean energy sector by supporting energy projects having difficulty securing financing in a tight credit market. Under the 1705 program, the credit subsidy costs associated with the loan guarantees are paid through funds appropriated by Congress. Additionally, to qualify for 1705 funding, projects must begin construction no later than September 30, 2011.

The ATVM program issues loans in support of the development of advanced vehicle technologies to help achieve higher fuel efficiency standards and reduce the nation's dependence on oil. Congress funded this program with $7.5 billion in credit subsidy appropriations to support a maximum of $25 billion in loans.

In the recent Senate Energy Committee hearing noted above, Jonathan Silver commented on the loan program's results to date explaining that between 2005, when the program began, and 2009, DOE did not issue a loan or loan guarantee. Mr. Silver said that since March 2009, the Department had issued conditional commitments for loans or loan guarantees to 27 projects, 16 of which have reached financial close. This represents nearly $30 billion in financing to these 27 projects, which have total project costs of nearly $47 billion and include an array of clean energy technologies, such as wind, solar, advanced biofuels, geothermal, nuclear, transmission, and battery storage. The projects include the world's largest wind-farm, two of the world's largest concentrating solar power facilities, the first nuclear power plant to begin construction in the United States in decades, the world's first flywheel energy storage plant, and a biodiesel refinery that will triple the amount of biodiesel produced in the United States. Project sponsors estimate that these 27 projects will create or save over 61,000 direct jobs and hundreds of thousands more indirect jobs, and generate enough energy cumulatively to power over two million households.

President Obama's FY 2012 request would provide $200 million in credit subsidies to support approximately $1 to $2 billion in additional loan guarantees for renewable energy and other technology deployment. It would also provide up to $36 billion in additional authority to loan guarantees for nuclear power projects.

Those of us watching from the outside have been impressed with the recent progress and professional skills of the DOE team, but continue to be concerned about the intricate multi-agency review process in the loan guarantee program and the great uncertainty of the yearly budgeting cycle. I and many others *across the energy technology spectrum*—from renewables to fossil to nuclear power—believe that as long as the loan guarantee program remains as currently structured inside DOE, it will continue to be subject to these challenges. And I and many other observers of *the global clean energy race* believe that our country would be better served by taking a new approach to the critically important task of energy technology commercialization.

We support significant FY 2012 funding for the DOE Loan Guarantee Program to continue its important work in the near term. Congress should substantially increase the funding for credit subsidies to support renewable energy and other projects. Something on the order of $1.5 to 2.0 billion in credit subsidies, versus the $200 million requested, would support a good proportion of projects currently in due

diligence. *However, over the longer term, supporting the financing of capital-intensive energy projects with serious scale-up risks—in close collaboration with the private sector—is not a good match for the current structure, oversight, risk tolerance, and financial tools of the Department of Energy.*

Commercializing energy technology requires a new more effective approach—and that approach is the Clean Energy Deployment Administration (CEDA). CEDA, in strong partnership with the private sector, could more effectively support the scale-up of clean energy technologies—and U.S clean energy competitiveness—than the current approach. CEDA, as developed over the last couple of years in the Senate Energy and Natural Resources Committee—on a bipartisan basis—would have an array of tools, such as loan guarantees, insurance products, and bonds to accelerate private sector investment. Initially funded with an appropriation of $10 billion, CEDA could become a self-sustaining entity—that is no additional appropriations—based on mechanisms in the bill that would allow it take financial stakes in projects. Also, while CEDA would be established as an agency within DOE it would have an administrator and board of directors, and enjoy an important degree of independence, like the Federal Energy Regulatory Commission, an independent arm of the DOE. *As one expert in clean energy finance put it: "CEDA is the current loan guarantee program with more tools and less fuss."*

In the Senate, CEDA enjoys bipartisan cosponsors and was adopted in the last Congress by the Senate Energy Committee on a bipartisan basis. The Senate bill has broad support including renewable energy trade associations, the Nuclear Energy Institute, and the U.S. Chamber of Commerce. In the House, a version of CEDA was added by a 51–6 vote of the House Energy and Commerce Committee to the Waxman-Markey bill.

Mr. Chairman let me emphasize that one way or the other—creating CEDA and/or making additional funding available for the loan guarantee program—we need to ensure that we provide a serious financing mechanism for moving U.S. clean energy projects through the Valley of Death. Opponents of these mechanisms are concerned about "the government setting industrial policy," "picking winners and losers," etc. These are understandable issues but they do not recognize several key facts. First, virtually all our nation's economic competitors, including China, are providing major help to companies facing the Valley of Death. Congress, in part recognized this fact, when it created the loan guarantee program. Second, U.S. agencies, like the Export-Import Bank (ExIm) and the Overseas Private Investment Corporation (OPIC) regularly provide help that is not terribly different from the loan guarantee program and CEDA for U.S. companies wanting to build projects in other countries. *Mr. Chairman, it simply can't be that Congress intends to make it easier to help finance energy projects in India than Indiana.*

Third, and most importantly, if the DOE loan program office finds itself without additional funding next year, if the Section 1603 Grant program is not renewed (see below), and if the enactment of CEDA stalls, the federal government could find itself with almost no tools to help with the financing of higher risk energy projects, involving renewables and other technologies. This would be a terrible blow to one of the highest potential areas of U.S. economic growth—and job creation—over the next two decades.

4. Obstacle: Cost-competitiveness

Proceeding down the renewable energy road we now reach the stage where a technology has been proven to work at commercial scale but where it often can't yet compete fully because of higher costs than traditional technologies. The good news is that renewable energy costs have come down significantly over the last two decades with technology improvements and expanding manufacturing and deployment. At the same time, many of the renewable energy technologies still have some distance to go in terms of cost. This is where federal tax incentives, financing help, and related support have been so critical to the deployment of renewable energy in our country. It is also where state renewable energy standards have helped lower the cost of renewable energy and drive deployment.

Federal tax incentives help lower the delivered cost of a project or the energy it produces. There are two general categories: Investment Tax Credits (ITC) and Production Tax Credits (PTC). The ITC and PTC enhance renewable energy project economics, complement state renewable energy policies, and as such have been a major driver of growth. Yet these policies are incapable of sufficiently scaling renewable energy development for two main reasons. First, is the generally short-term nature of these tax credits and uncertainty surrounding their extensions. This has resulted in a wax and wane cycle for wind and solar development. For example, in 1999, 2001 and 2003 when the PTC expired, new U.S wind capacity decreased by over

75% from the prior year. This "on again, off again" behavior creates strong market uncertainty and causes abrupt changes in business investments and R&D spending.

The other significant drawback of the ITC and PTC is that they force renewable energy development to be calibrated around the projected availability and size of the tax equity market. Only investors with sufficient capacity to "monetize" the tax credit, i.e. with sufficient taxable income to off-set, can take advantage of them, forcing many renewable energy project developers to rely on third party "tax equity investors." This raises financing costs, driving up the delivered cost of energy and driving down the public benefits the tax credits produce in terms of megawatts of renewable energy delivered.

The risks of tax-based incentives were seen in the recent ups and downs of the Investment Tax Credit for solar. The good news is that it was extended for eight years in 2008, providing an attractive degree of certainty for project investors. The bad news is that during the recent financial crisis and recession the renewable energy tax equity market shrank by 83%, from $6.1 billion in 2007 to $1 billion in 2009

To promote economic recovery, stimulate private investment, and maintain market momentum, the "Section 1603 Grant in lieu of tax credits" program ("Section 1603 Grant") was adopted in the 2009 American Recovery and Reinvestment Act to specifically address insufficient tax equity in the market and corresponding inability to take advantage of the PTC and ITC. The Section1603 Grant allows project developers eligible for the ITC and PTC to elect to obtain an equivalent grant from the Treasury Department in lieu of these credits. It has provided certainty for tax equity financing and boosted insufficient tax equity supply to meet developer demand. It originally required projects to begin construction by December 31, 2010 but in 2010 Congress extended this date to December 31, 2011.

As of May 2011, $7 billion in grants have been awarded to 2601 renewable energy projects leveraging approximately $22 billion in private sector investment. There is a rising view that the Section 1603 Grant is a more cost-effective approach to providing incentives for renewable energy projects than tax credits. A study conducted by Bloomberg New Energy Finance estimated the 19,000 megawatts of wind installed in the U.S. between 2005–2008—costing the government $10.3 billion via the PTC—could have been achieved with $5 billion in Section 1603 Grants.

There are a number of other market-based policy mechanisms that can help lower the cost of and drive private sector investment in renewable energy technology. Under a "feed-in tariff," eligible renewable electricity generators are paid a premium price for renewable energy they produce. Typically regional or national electric utilities electric are obliged to take the electricity. Feed-in tariff policies have been enacted in more than 60 countries and 12 U.S. states with impressive results in driving scale and cost reduction.

Another policy mechanism is a Renewable Electricity Standard (RES) that typically places an obligation on electric utilities to produce a specified fraction of their electricity from renewable energy sources. RES programs are often implemented through utility renewable energy systems or bidding processes for independently developed generation. In the latter approach, certified renewable energy generators earn certificates for every unit of electricity they produce and can sell these to utilities. The utilities then pass the certificates to a public utility commission to demonstrate their compliance with their regulatory obligations. RES programs can promote significant competition and innovation allowing renewable energy to compete with cheaper fossil energy sources. RES-type mechanisms have been adopted in 29 U.S. states as well as several countries.

Congress has been considering a national RES for several years. The Senate Energy and Natural Resources Committee adopted an RES in 2009 in the American Clean Energy Leadership Act. The Waxman-Markey bill, enacted by the full House in 2009, contained an RES. More recently, President Obama proposed a broader Clean Energy Standard requiring that the nation derive 80 percent of its electricity from a broad array of clean energy technologies by 2035. The Senate Energy Committee is considering the proposal.

5. Obstacle: Siting

Having moved a renewable energy technology to a point where it works at full scale and where the energy it produces can be sold competitively, at least with attractive financing and some reliable incentives, the issue of siting now is worth a look. Public lands hold significant potential for renewable energy development. The Interior Department estimates that more than 23.000 megawatts of utility-scale solar is reasonably foreseeable to be developed on public lands in the desert southwest. Offshore, DOE's National Renewable Energy Lab estimates that the wind potential off the coasts of the lower 48 states exceeds the entire U.S. electricity gener-

ating capacity. And U.S. geothermal potential, using traditional and advanced technologies, is estimated at roughly half of U.S. electricity generation. Although not without some challenges, the Obama Administration has stepped up well to siting renewable energy on public lands.

In May, the Departments of Interior and Agriculture issued a major report—"*New Energy Frontier: Balancing Energy Development on Federal Lands*"—that reviews issues associated with the development of both renewable and conventional energy on Federal lands, both on and offshore. The report emphasizes that these lands have:

> "[V]ast potential for renewable energy production from wind, solar, geothermal, hydropower, and biomass that—together with conventional energy sources—can contribute to the Nation's energy security and to the clean economy of the future. However, the development of these energy resources must be carried out in balance with many other uses and values that serve the public interest and support the quality of life American citizens enjoy."

Both Secretaries Salazar and Vilsack have developed strategies to advance renewable energy development while balancing these other important interests. These strategies include: developing research, policy and management tools to minimize impacts of energy development; supporting key agencies like the Department of Energy, Federal Energy Regulatory Commission, and relevant state agencies; and involving interested stakeholders. The May report from the two Departments emphasizes that:

> "[T]he renewable energy strategies of both the DOI and USDA are guided by the fundamental belief that renewable energy for America will allow us to diversify energy sources and ultimately reduce our reliance on fossil fuels. The development of new renewable energy sources need not come at the expense of our Nation's natural and cultural heritage. If promoted and sited in a thoughtful way, new energy development can, instead, contribute to conservation and protection of the environment."

Two of the biggest renewable energy siting issues on public lands have involved solar projects on desert lands and wind farms off the Atlantic coast. Siting issues around geothermal energy projects—an important renewable energy technology with a vast resource and 24/7 operation—is also worth consideration.

a. Desert Solar

Some of the best solar resources in the world are located on public land overseen by the Interior Department's Bureau of Land Management (BLM) in Arizona, California, Colorado, Nevada, New Mexico, and Utah. Federal agencies have developed extensive processes to authorize use of these lands for a variety of purposes, including recreation, grazing, mining, and energy development. There is also great potential for these lands to produce safe, clean solar energy, yet limited agency action has delayed the permitting of solar projects for years. By contrast, over the past 20 years, federal agencies approved about 74,000 oil and gas drilling permits.

In June 2009, Interior Secretary Salazar moved to "fast-track" development of solar energy projects on federal lands. First, by secretarial order, he withdrew from other development activities 670,000 acres in 24 potential solar energy zones that had been identified through a number of different processes. At the same time, Interior kicked off a long-term planning process based on a Solar Programmatic Environmental Impact Statement (SPEIS) to designate priority areas for development in the longer term, beginning with the study of the 24 zones.

At the time of these announcements, BLM had already received 155 applications for solar installations. Since existing statutes provide specifically for leasing federal land for oil, gas and geothermal activities but *not* for solar energy, these applications were received under the authority of a grant of a federal Right of Way under the Federal Land Policy and Management Act (FLPMA). Secretary Salazar announced that when the SPEIS was completed, that document would guide considerations of applications going forward but that pending applications would be evaluated based on interim standards.

The Secretary also announced that a set of fourteen large projects, which had greater potential to be permitted and begin construction by the end of 2010, would be given special "Fast Track" status. These projects would not be subject to less stringent environmental analysis, but they would receive priority attention from federal regulatory officials. This December 2010 date was critical because, at the time, the Section 1603 Grant Program (see above) could only be claimed for projects that started construction by December 31, 2010. For many of these large projects, the ability to monetize tax credits was critical to their ability to secure financing because the recession froze—and continues to negatively affect—credit markets and available tax equity.

Under California law, concentrating solar thermal power projects (which use mirrors to boil water, create steam, and drive a turbine to generate electricity) are treated as power generation facilities and must be permitted, like all other power plants, by the California Energy Commission, even if they are located on federal land. (Solar photovoltaic facilities, however, do not fall under the California power plant jurisdiction and only need Interior Department approval.) Thus, solar thermal projects have to move through two separate regulatory processes and two separate environmental analyses, one under the federal National Environmental Policy Act (NEPA) and one under the California Environmental Quality Act (CEQA). To avoid this duplication, and to make certain that the State and federal agencies were fast-tracking the same projects, Interior Secretary Salazar and then California Governor Arnold Schwarzenegger signed a Memorandum of Understanding in October 2009 to integrate the two processes.

As a result of this more coordinated and focused program, nine large solar projects were approved by the BLM prior to the end of 2010, seven using concentrating solar technology and two using solar photovoltaics, comprising a total of about 3650 MW. Six of these projects are in California and three in Nevada. In addition, the California Energy Commission permitted an additional 1100 MW of solar thermal capacity in 2010 that is not on federal land.

Looking ahead, the further development of utility-scale solar in the Southwest faces some challenges. These include finalizing the SPEIS which, done well, can help provide predictability and speed in the permit process by steering solar development into Solar Energy Zones (SEZ) where the solar resource is high, which are near existing transmission (or to which transmission will be constructed), and where there are few environmental conflicts. Solar project developers have raised concerns that the Solar Energy Zones (SEZ), as currently conceived, do not adequately evaluate the suitability of the proposed zones from a technical, environmental, transmission, and cultural perspective and therefore make planning more difficult. Further, some of the developers have stated that successful application of the SEZ approach will likely require a larger universe of solar zones than is described in the draft SPEIS and flexibility in expanding the zones.

A broad group of solar developers and environmental organizations have joined together to suggest establishing Areas of Facilitated Development (AFDs) for utility-scale solar development. AFDs would be established, based on: technical criteria (e.g. insolation, slope); low conflicts with biological, cultural, and other resources; and access to transmission and proximity to load. Solar developers have said that AFDs could provide real incentives for development within their boundaries, such as project-specific Environmental Assessments instead of broader Environmental Impact Statements and assurance of transmission interconnection. AFDs could also be large enough to allow for siting flexibility, and BLM could establish a clear process for expanding AFDs and adding new ones.

As indicated above, to a large extent, issues related to the *permitting* of solar on public lands are being addressed by the Interior Department in coordination with developers and environmental organizations. The current challenges in solar energy development have little to do with permitting issues, but instead the current unpredictability of federal incentives, financing help, and other programs. If there is one refrain we hear constantly from industry it is this: "We need a consistent long-term energy policy from the federal government." As discussed above, the Section 1603 Treasury Grant program's deadline for start of construction was extended in November 2010 but only for one year. Also, as noted, important components of the federal loan guarantee program added by the American Reinvestment and Recovery Act, which have been instrumental in promoting solar energy development, will expire September 30, 2011 unless extended. These challenges will likely cause many projects to be delayed.

Added to these policy and market uncertainties is the balkanized jurisdictional system in the U.S. for making needed upgrades to the transmission system to improve access to renewable generation and simultaneously enhance grid efficiency and reliability. While the Federal Energy Regulatory Commission (FERC) and a number of state public utility commissions are struggling with these issues, there is a pressing need for more regional multi-state/federal cooperation—and for Congressional attention—to address these problems. This industry cannot flourish without multi-state and federal cooperation on transmission issues in the southwestern states.

It is the lack of predictability and consistency of federal incentives and financing help, and the need for greater federal leadership on regional transmission planning, which are the major barriers to the growth of the utility-scale solar industry today. Federal permitting of solar projects on federal lands needs continued attention, and must be further improved, but that effort is on course.

b. Offshore Wind

Although existing law governing energy development on the Outer Continental Shelf was designed for oil and gas, not for offshore wind or wave energy, the Obama Administration has moved expeditiously to design and streamline the permitting process and help build an offshore wind industry. First, for years there had been serious and unresolved disputes among federal government agencies about jurisdiction over off-shore wind and wave development, particularly between the Federal Energy Regulatory Commission (FERC) and the Department of Interior's Minerals Management Service (MMS). The Obama Administration settled this dispute through a Memorandum of Understanding between the two agencies signed in March 2009.

Second, in April 2009, MMS issued a final "Renewable Energy Framework" rule specifying the steps necessary to permit an offshore wind farm. Third, shortly thereafter MMS announced a decision to issue "limited leases" for five years for sites off Delaware and New Jersey, based on its own completed environmental analysis. These leases would allow developers to erect meteorological towers to test wind conditions and do other studies for potential wind farms. MMS issued four leases to three different companies later that year. These sites had been narrowed down from 40 initial nominations and 16 areas chosen for potential study.

In the spring and summer of 2010, considerable uncertainty was generated by how the environmental analysis required under the National Environmental Policy Act (NEPA) and other environmental statutes would be integrated with various stages of the permit process. Concerns were also raised by several states eager to go forward with off-shore wind about the federal process, in particular about the Cape Wind project in Massachusetts that had struggled for nearly a decade to secure the nation's first off-shore wind permit.

In response to this uncertainty, the Department of Interior, which had already worked with coastal state governors on joint state-federal planning for off-shore wind development, resolved the Cape Wind issues, and issued a permit. In November 2010, the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), the successor agency to MMS, announced the "Smart From the Start" program to streamline the permitting and NEPA requirements for off-shore wind. BOEMRE announced: that it had identified targeted areas off North Atlantic states as zones for off-shore wind farms that had local support and few environmental conflicts; that coordinated environmental studies including Environmental Assessments (EAs) under NEPA would be performed by the federal and state governments for these targeted areas; and that within a year thereafter leases could be advertised and entered into by developers.

Earlier this year, Secretaries Chu and Salazar announced the first joint departmental "National Off-Shore Wind Strategy" including final designation of the targeted zones off Delaware, Maryland, New Jersey and Virginia that would be the subject of accelerated environmental analysis leading to prospective leases. At the same time, DOE announced $50 million in grants aimed at improving turbine blade design for increased efficiency, reducing market barriers, and supporting research into "next generation" drive trains. Gearless or "direct drive" wind turbines now under development are expected to have many fewer maintenance requirements than current products, which is important for off-shore facilities because of the high cost of accessing these machines.

The principal barriers that now confront the development of offshore wind off the Atlantic Coast today are not permitting and NEPA barriers, they are market barriers. The Cape Wind project off Massachusetts has its permit, but must still negotiate a power purchase agreement for the second stage of the project under less favorable market conditions than when it signed its first agreement, and then find financing. As discussed above, the future of the DOE loan guarantee program is highly uncertain, the Section 1603 Grant program is expected to expire at the end of this year, and tax equity investors are still scarce. The large capital investment required, low natural gas prices leading to lower off-take prices, and the lead-time required for a project all combine to make it more difficult to successfully develop an offshore wind facility today.

If we are to see significant development of offshore wind, with substantial associated domestic manufacturing, we need to ensure predictable and sustained demand at a reasonable level. This can be done through federal policy and, perhaps more expeditiously, through the federal government promoting and supporting regional and state efforts to procure offshore wind. This may include the federal government encouraging Regional Transmission Organizations and Independent System Operators, such as the PJM Interconnection, the NYISO, and ISO New England to plan for large-scale transmission that will facilitate the development of significant offshore wind projects rather than rely on individual developers to plan and pay for

separate tie lines for each offshore project. The lack of coordinated federal policy that addresses all barriers to creating an industry will leave a valuable clean energy resource—in the vicinity of large population centers—largely untapped. If we want to encourage a robust offshore wind industry, like that which has developed in Europe and now is expanding rapidly in China, further incremental streamlining of permitting and related environmental processes would be helpful, but this is only a small piece of the interrelated set of factors inhibiting growth of the industry.

c. Geothermal

Geothermal energy is a 24/7 resource providing clean base-load power in utility-scale quantities. The federal government figures prominently in the future of geothermal energy in the U.S. First, approximately 90% of known hydrothermal resources lie under Department of Interior and Department of Agriculture lands. Second, as of 2005, approximately half of US geothermal production occurred on federally managed lands and many of the 7,000 megawatts of geothermal projects currently under development will be developed on federal lands. Third, much of the nation's advanced geothermal resources such as Enhanced Geothermal Systems and Geo-Pressured Geothermal—which exceed 500,000 megawatts of potential—lay beneath federal lands in the west.

Compliance with NEPA and other federal and state environmental laws add complexity throughout the development cycle. After a lease has been acquired, completing the necessary permitting for even initial exploration drilling can take well over a year—adding cost, risk, and time to project development. The good news is that BLM is stepping up to the plate as an active development partner. In 2008, the BLM, as well as the U.S. Forest Service opened over 190 million acres to geothermal exploration and leasing, potentially facilitating an additional 11,100 megawatts of hydrothermal development by 2025. And the Obama Department of Interior has moved aggressively to accelerate geothermal development on federal lands including:

- Leasing dozens of parcels of land in California, Idaho, Colorado, and Nevada;
- Approving the 236-mile ON Line transmission project connecting Las Vegas to geothermal zones in northern Nevada;
- Fast tracking over 200 megawatts of geothermal projects in Nevada for approval;
- Reaching an agreement with Colorado to accelerate geothermal permitting.

Additionally, the Department of Energy has reinvigorated the Geothermal Technologies Program, investing in badly needed new technologies and demonstration projects.

Conclusion

Wrapping up, I spent the last four years at Google helping to develop and implement the company's approach to energy policy, investment and technology. Coming from the energy sector, I was struck at Google by how innovation, investment and policy came together so effectively to help build an entirely new industry—the Internet—that has fundamentally transformed life as we know it and created vast numbers of good paying U.S. jobs. The federal government had a large role in the creation of the Internet, providing early R&D support and becoming one of its initial users. Critical policy decisions by Congress, a series of Democratic and Republican Administrations, and regulatory bodies like the FCC, set smart rules of the road for development and use of the technology. Trade policy has helped ensure opportunities for U.S. companies in advancing the Internet across the globe.

We must take a similarly coordinated approach between the private sector and the U.S. government in order to seize the opportunities in clean energy technology. We face declining federal R&D funding, inadequate financing mechanisms, unreliable incentives, and a lack of transmission capacity. While siting of renewable energy projects on public lands needs some continuing attention, it is this broad array of other obstacles that really cry out for help.

And arguably, cooperation between industry and government is even more critical in clean energy technology than the development of the Internet as the stakes are higher in terms of our nation's security, competitiveness, health, and environment. We tend to measure progress in information technology in months or years. In contrast, we measure progress in energy technology in decades. If we don't get our act together between our government and the private sector, other countries, like China and Germany, that are taking the long view when it comes to clean energy technology, will be the winners of this marathon. A prize worth trillions of dollars and millions of jobs hangs in the balance—to say nothing of our national security and the future of the planet.

The CHAIRMAN. And I want to thank all of you on the panel for your testimony. We will start the round of questioning, and I will begin. But before I do, I just want to make an observation.

It is very interesting hearing the tone of what you are all saying, at least from some commonality, and you are asking this Committee to consider what I think any, any, any energy production committee would ask for, whether you are talking about renewables or fossil fuels or whatever, and that is certainty so that you can proceed forward from whatever, whether it is regulatory or statutory. And I certainly hear that loud and clear, and I just want to make that observation.

By full disclosure, I should say, too, that my district has a lot of diversity in its energy. I come from an area where hydropower is the primary source of energy. But as Mr. Resch alluded to, I have a manufacturer of solar components in my district. There is going to be a solar facility in one of my counties that is in the planning stage, and I understand my district is the 15th largest wind producer in the country. So I am very much in favor of an "all of the above" energy plan, as I mentioned in my opening statement.

But there is always one caveat that I think we always have to take in mind as policymakers, and that is that the ultimate purchaser of our energy is going to be the consumer, and they want the best possible price that they can get, and that is something I know you are all striving for. But we should never lose sight of that. That is why I think an "all of the above" energy plan is so important.

Now, I have just one question, and this is alluded to by virtually all of you in your testimony. The question may answer itself, but I think it has to be asked from the standpoint to get it directly on the record. All of you in one way or the other alluded to problems you had with permitting and so forth. So my question to all of you is this: Do you believe that the Bureau of Ocean Energy Management, Regulation and Enforcement, or BOEMRE, and BLM, Bureau of Land Management, has an efficient and effective process for reviewing and approving permits and plans in a timely fashion right now?

Mr. Roberts, I will start with you and just go down the panel.

Mr. ROBERTS. Thank you, Mr. Chair. No, I don't.

The CHAIRMAN. OK. You don't have to elaborate if you don't want to, because that is what we are trying to find out.

Go ahead. Ms. Reilly?

Ms. REILLY. I would say that these bureaus are full of people who are very well intended and people who care about the environment. I think we heard that from one of the other speakers today. But we need much improving and streamlining in the efficiency of the bureaus.

The CHAIRMAN. Thank you.

Mr. Gordon.

Mr. GORDON. I think under Secretary Salazar's leadership, he has come in and he is making reforms and trying to expedite the review process for offshore wind with the Smart from the Start initiative. It is going to take a lot of work.

The CHAIRMAN. It is not efficient and effective right now then?

Mr. GORDON. It could be more efficient, sir.

The CHAIRMAN. Thank you.

Mr. Lanard.

Mr. LANARD. Thank you, Mr. Chairman.

When I started in the offshore wind industry 5, 6 years ago, the permitting timeline under the Federal Government looked like it was 7 to 9 years. Under Director Bromwich and Secretary Salazar, we have cut 2 years off of that. We are now 5 to 7.

Director Bromwich testified recently before your Committee and talked about the fact that the permitting process still needs to be refined more. So we do agree with him. We would like to see that refinement. We are satisfied that the agency is committed and working very hard to find those time savers, and I think we will see them in the next 6 months to a year as we move forward with leasing for the Outer Continental Shelf.

The CHAIRMAN. Mr. Resch.

Mr. RESCH. Two quick points. There has been great improvement, as everybody has said so far, and I certainly concur with that, and we hopefully are going to see that continue, and hopefully it will continue along the lines of what other energy industries enjoy.

And just to kind of give you a quick example, the oil and gas industry received 1,308 permits to drill on Federal lands last year, and we were ecstatic to get 9 in the solar industry. So the technology and the emphasis that the Bush Administration focused on expediting oil and gas permits, I think, can be applied directly to renewable energy permits as well, and we can see it move faster.

The other competing issue, of course, is the fact that you have not only a permit process through BLM, but you also have these Federal tax policies that expire and create a tremendous amount of stress on everything within that system. So if we had extension also of the tax policy, I think it would streamline and make things easier at BLM as well.

The CHAIRMAN. Mr. DeRosa.

Mr. DEROSA. We have had a positive experience with BLM. I mentioned our Silver State North project that was permitted with alacrity, and we have other projects that are in the fast track of BLM's designation that are proceeding through the process. So we applaud the dedication that BLM has given to this sector, to this permitting.

The CHAIRMAN. I heard you say it, Mr. DeRosa, but you also pointed out one individual, and I would just simply say if the success of any project is reliant on one individual, that is not good policy.

Mr. DEROSA. Right.

The CHAIRMAN. Clearly I want to make that point.

Mr. DEROSA. I appreciate that. I wanted to give credit where credit was due there. But on the other hand, we want to make sure that the policy going forward is an expansive policy, that there are not prohibitions.

The CHAIRMAN. My time is about running out. I asked the question if you think it is efficient right now, and I am hearing generally from you that there could be improvements, and some need a lot of improvements.

Mr. DEROSA. Yes.

The CHAIRMAN. OK. Dr. Piszczalski.

Dr. PISZCZALSKI. Within the current structure, I think BLM is doing fine, and I hope that I conveyed that it is a structural problem. We still have—for a typical project half the time is being spent on permitting. That means there is a lot of room for improvement.

The CHAIRMAN. OK. Mr. Reicher.

Mr. REICHER. Chairman, I think we have seen significant improvement in the programs. Obviously, like all programs, they can be improved further. But I would emphasize that permits without adequate policy, financing incentives and the like aren't a very useful device.

The CHAIRMAN. Thank you all very much.

Mr. Markey, you are recognized.

Mr. MARKEY. Thank you, Mr. Chairman, very much.

In the Republican budget they kept in the $20 billion for loan guarantees for nuclear power projects, but zeroed out the money for loan guarantees for wind and solar. Can we go down? We will give each one of you a chance to answer yes or no.

Would you like to see the line guarantees for renewables restored? I will make it a positive for you so you don't have to say no. You can each say yes, if you would like.

Mr. ROBERTS. From an industry perspective, yes.

Mr. MARKEY. OK, good. Thank you.

Ms. Reilly?

Ms. REILLY. Yes, we would. We think that a level playing field would be tremendously helpful.

Mr. MARKEY. OK. Good. You would like them restored. Yes.

Mr. Gordon?

Mr. GORDON. Absolutely, yes.

Mr. MARKEY. OK. Yes.

Mr. LANARD. Mr. Markey, in bold, 72-font, underlined, yes.

Mr. MARKEY. Thank you.

Mr. RESCH. Absolutely. A critical program.

Mr. MARKEY. Thank you.

Mr. DEROSA. Yes.

Mr. MARKEY. Thank you.

Dr. PISZCZALSKI. Yes, the incentives do make a big difference.

Mr. REICHER. Loan guarantees with credit subsidies absolutely, and let us get on to a more reliable program, which would be the Clean Energy Deployment Administration.

Mr. MARKEY. No, we are ready for question number 2. You are too smart for Congress. We are going to break it down a little bit. Let us move on here. He is the kid with his hand up right from the first grade, you know?

The Republican budget also cut the clean energy programs, you know, the alternative to oil programs, by 70 percent. Would you like to see that money restored for the clean energy programs that was cut out of the Republican budget? Yes, sir?

Mr. ROBERTS. I am not familiar with those programs.

Mr. MARKEY. Good. Thank you. You should familiarize yourself with them. I think that would be a good idea. It is the clean energy part of the Federal budget.

Ms. Reilly?

Ms. REILLY. Yes, we would.

Mr. MARKEY. Thank you.
Mr. GORDON. Yes, we would.
Mr. MARKEY. Thank you.
Mr. LANARD. Yes, we would.
Mr. MARKEY. OK. Thank you.
Mr. RESCH. Absolutely.
Mr. MARKEY. Thank you.
Mr. DEROSA. Yes.
Mr. MARKEY. Thank you.
Dr. PISZCZALSKI. I would say yes, with better targeting, too.
Mr. MARKEY. OK, good.
Mr. REICHER. Yes.
Mr. MARKEY. OK, thank you.

And, more predictably, would you like it all to be more predictable for a 4- to 5-year period on all of these tax and loan guarantee programs for your industries? We will go down again. A yes is the preferred answer.

Mr. ROBERTS. Yes, predictability is really important.
Mr. MARKEY. OK. Thank you. Yes.
Ms. REILLY. Yes, absolutely.
Mr. MARKEY. OK. Thank you.
Mr. GORDON. Yes.
Mr. LANARD. As the Chairman said, it certainty is very important, yes.
Mr. MARKEY. Good. Thank you.
Mr. RESCH. Yes. And just to put it in perspective, we are 1 gigawatt today. We expect to be 10 gigawatts annually by 2015 if we can keep these programs in place.
Mr. MARKEY. Great. That is great news.
Mr. DEROSA. Yes. And let me just say it is that predictability of those programs.
Mr. MARKEY. I have other questions. Yes. Next?
Dr. PISZCZALSKI. I would say yes, especially because the financing is so hard to handle.
Mr. MARKEY. Thank you.
Mr. Reicher?
Mr. REICHER. Yes.
Mr. MARKEY. Thank you.

Now, in the Republican appropriations bill for 2012, they actually are $4 billion below the President's program for the Department of the Interior, and we heard here at this table 2 weeks ago from the Director of the BLM, from the Bureau of Land Management, that those kind of draconian budget cuts will slow down their ability to be able to deal with all of the kind of the technical issues that you would like to in your testimony have a telescoped timeframe to deal with so we can move more quickly toward permitting of wind and solar projects. But if they have much fewer personnel, it is going to be a lot harder for all of them because of all the projects you have planned all an across the country.

Ms. Reilly, would you say that $4 billion less for the Department of the Interior will likely increase or decrease the amount of time it takes for the Department of the Interior to deal with those permitting issues that you were referring to in your testimony?

Ms. REILLY. The reduction in the budget is clearly going to put more strain on the operations within those agencies.

Mr. MARKEY. Can we just go down? Do you all agree this is not the time for us to be decreasing the budget in the areas where you are trying to have an expedited dealing with all of these very sophisticated issues of environment and ESA and wind and solar issues all now combined really for the first time?

Mr. ROBERTS. Cutting the DOI's budget will increase the permitting time and is not in the national interest.

Mr. MARKEY. Great.

Ms. REILLY. The good news is the BOEMRE budget was not decreased significantly, perhaps because the focus was more oil and gas, but we would like them——

Mr. MARKEY. No, BLM I am talking about. You are an offshore guy. OK, good. BLM.

Mr. GORDON. I concur that the programs that have been put in place by Secretary Salazar need to be funded in order to see the results that the country is really requesting.

Mr. MARKEY. Mr. DeRosa?

Mr. DEROSA. I agree.

Mr. MARKEY. Good. Thank you.

Dr. PISZCZALSKI. Yes, in the current structure, they will lead to more delays.

Mr. MARKEY. OK, good. Thank you.

Mr. REICHER. Having been a bureaucrat for 8 years, when our budgets got cut, we could do less on the regulatory side.

Mr. MARKEY. Thank you. I appreciate it, and I thank all of you for your testimony.

Thank you, Mr. Chairman.

The CHAIRMAN. We have just been advised that a vote is imminent on the Floor, so that will probably disrupt where we are.

The Chair recognizes the gentleman from Louisiana Mr. Landry.

Mr. LANDRY. Since Mr. Markey has done such a wonderful job of training you all how to answer, if you could just stay in that pattern.

Wouldn't you all, if you would, if any of you all have children, wouldn't you like your children to have the same opportunity or a better opportunity than you have had in today's America? And do all of you all work under budgets, meaning you can only—revenue comes, and you spend that revenue? I just want to make sure we level the playing field as to why maybe some of these cuts are here.

I do understand, and I am just shocked at the constant problem of permitting and uncertainty. I think it is Dr. Piszczalski's slide—if you wouldn't mind, I would like to borrow that and make it a yard sign for the White House and the Capitol, the guy climbing up the hill with the permitting process, because we have that in all of the industries. In fact, I think it was—I can't see the names over there. Where are my names? One of you said that you are having problems in the judicial process.

So my question to each of you would be wouldn't you all support an across-the-board reform of the judicial process and the permitting process in the Federal Government, across-the-board meaning for all industries, whether it be solar, wind, nuclear, oil and gas?

Mr. ROBERTS. Congressman, getting certainty around siting and permitting is extraordinarily important. So if we could figure out a way to protect the environment and yet make a timely, efficient process, that would be extraordinarily important.

Mr. LANDRY. Regardless of the industry, it should be that for every industry.

Ms. REILLY. Yes. Certainty in the process is paramount. But also a focus—the fast-track program that we have heard about today has been very successful for solar so far. We haven't seen that for wind. We think that there needs to also be a focus on getting things on a fast track, but also getting them out at the other end. So a focus on outcomes and delivery is also helpful.

Mr. LANDRY. For all industries.

Ms. REILLY. For all industries, business and government, everywhere. The focus on the outcome is important.

Mr. LANDRY. Great.

Mr. GORDON. I think any time we can cut unnecessary delays and procedures across a wide range of industries is a good thing.

Mr. LANARD. Congressman, I can only speak to the offshore wind industry perspective on this. I can't speak to the industrywide question that you have raised. We work with lots of different stakeholders, and there are a number of groups, mostly national environmental groups, that have concerns about the National Environmental Policy Act. They feel that it is a very important component of their role in protecting the environment and endangered species, and they would have perhaps wanted a better understanding of how we get to that certainty and we work closely with them. So we would want to work with those national groups to have a better understand of how judicial reform and some of the other certainty questions that you are asking would apply.

Mr. LANDRY. Who had the problem with the eagle?

Ms. REILLY. I did.

Mr. LANDRY. You understand? Look, you all can be nice and sugarcoat this over here, or you can just say it as it is, and that is we are having a problem with uncertainty in any industry. And I think it is fair to say that regardless of what industry, whether it is the solar, or the wind, or the oil and gas industry, or the nuclear industry, we should be out here, this Federal Government should be out here, getting the message that we need to create certainty in all of the industries. It is not fair for us to create certainty in your wind industry and solve the problem of the eagles for you to build your wind farm, when there may be a snail that is inhibiting the Chairman's ability to build a hydrodam.

What I am saying is everyone has to be on the same level playing field, and that is what I am trying to get you all to tell me is whether you support everyone being on the same playing field or not in the permitting and the judicial process.

Mr. RESCH. Before I came to the solar industry, I worked in the natural gas industry, a lot of time on lands issues, very similar kinds of issues that the solar industry is facing today. So I can say pretty clearly that both industries would be able to substantially lower costs to the consumer for their products if you had a streamlined regulatory and permitting process, yes.

Mr. DEROSA. Yes. I agree. There needs to be common standards, certainty and predictability.

Dr. PISZCZALSKI. As part of my work, I see what other countries are doing. So for instance, the Netherlands does have a much more standardized permitting process for shopping centers, everything. At the same time, we have to have the guts to be able to kill these projects too. Right now we let them drag on and just whack at them with a dull knife. If it is a bad project, I think we need to kill it as well.

The CHAIRMAN. Answer real quickly. We have a vote going. So answer real quickly. We want to get these questions in before the vote ends.

Go ahead, Mr. Reicher.

Mr. REICHER. Certainty certainly helps, but I think we have to strike the right balance between the speed of development and other key issues like environmental protection.

The CHAIRMAN. The time of the gentleman has expired.

Mr. Holt, I just want to advise Members that there is a vote on the Floor right now. We will try to get these questions in as quickly as we can.

Mr. Holt, you are recognized for 5 minutes.

Mr. HOLT. Thank you.

Of course, there is much to be said about—and not enough time to say it—about the cuts in the research and development, the cuts in the DOI budget, that will affect permitting, adding loopholes for Big Oil while making it harder for the alternatives.

Mr. Roberts, I wanted to talk to you a little bit about tax policy. We deployed something on the order of 10,000 megawatts of wind a couple of years ago; and then less, about 7,500 the following year; and then last year it was less, down to about 5,000. It seems to me there is a relationship between the number of years left on the tax credits and the number of megawatts we are able to deploy. Do you see a connection there?

Mr. ROBERTS. Again, it is all about long-term uncertainty, and it is extraordinarily difficult on the manufacturing side. We have had great success bringing over 400 manufacturers just for wind alone into this country. And lack of long-term stable policy——

Mr. HOLT. Thank you.

It is worth pointing out that in 2005, the Congress, we passed a law regularizing the regulatory guidelines, and they were not implemented by the last administration. So following Mr. Landry's comments, I would like to point that out.

We should be talking about jobs here. Let me ask Mr. Roberts and Mr. Resch, how many jobs today in your industries—defined broadly, how many jobs are associated with the projects that you think are reasonably on line or could move ahead promptly? And need we compare this with the Big Oil companies that, despite hundreds of billions of dollars of profit, actually are employing 10,000 fewer people?

Mr. RESCH. I will give it a shot. It is a little bit tricky because the policy we are talking about really affects the entire industry regardless of whether you are distributed generation or——

Mr. HOLT. OK. How many jobs today in the industry?

Mr. RESCH. We have about 100,000 jobs. We did a census this time last year.

Mr. HOLT. OK. And define reasonable projects some way or another.

Mr. RESCH. If we look at the utility-scale projects that we consider reasonable, there is about 25,000 megawatts of those projects. About 20,000 new jobs will be created by those projects on site at the facilities. And then you have all the secondary jobs, manufacturing, around them.

Mr. HOLT. Mr. Roberts?

Mr. ROBERTS. In a study by the previous Administration, it was estimated that if we hit our 20 percent goals on wind, that there would be close to 400,000 to 500,000 new jobs. So the question, I think, ultimately is how do we continue to build off of the success? Right now we have 75,000 jobs in our industry.

Mr. HOLT. Mr. Reicher, you spoke about research and development and some of the cuts in store there in a rather small percentage of both revenues or—by any measure, the small investment in research and development. What kinds of innovations in wind capture and energy transmission might be in store there, and what would be a reasonable investment in research and development, private sector, public sector?

Mr. REICHER. In terms of technologies, Mr. Holt, there is an extraordinary array of opportunities with wind turbines, moving from turbines that use gears to turbines that don't use gears, to so-called direct-drive wind turbines that would improve the efficiency, lower costs, lower the need for service. So that is one thing. Offshore wind turbines, we heard earlier, lots of revolutionary things can be done to build those better, cheaper, faster than we do today.

In terms of funding, I am just floored that we are spending roughly one-tenth of what we were in 1980 in the energy R&D area. We were at 25 percent of Federal R&D spending in 1980. We are at a tenth of that today.

Mr. HOLT. Let me get a quick question in, if I may, for Mr. Lanard. Does the government have a role to do a better job in characterizing the offshore wind out there, or will private industry be able to do it?

Mr. LANARD. Congressman, I listened to your question to the last session on this as well, and I think that the industry can do it. There are still some proprietary techniques that the industries are using for competitive advantage, so right now our recommendation would be to at least leave that to the developers. There is plenty for the Federal Government to do with the permitting process.

Mr. HOLT. Thank you, Mr. Chairman.

The CHAIRMAN. The time of the gentleman has expired.

Mr. Gosar is recognized for 5 minutes.

Dr. GOSAR. I am going to try to keep this brief, and I hope you would keep your answers brief. I am a businessman; I am a dentist. I am also from Flagstaff, so I have seen innovative industries. Motor Excellence is one reinventing how we look at electric engines, and Southwest Wind Power, all at our back door, all in our backyard and garages. So the business model I have got to concentrate, I have heard the complementary aspects from the Democratic side talking about lack of funding.

Let us go back to the business model. Real quickly, in a percentage of your budgets, how much goes to administrative aspects and judicial aspects within your businesses toward permitting?

Let me give you a real quick question or analogy. The Army Corps of Engineers gives the Flagstaff city a grant of $3 million, yet 60 percent of that is lost in administration. I want to make sure we are talking efficiency here.

So how much money out of your budgets goes to the permitting process having to deal with the justice—and, oh, by the way, I also want you to talk to me also about how much money or have any of you had to deal with lawsuits from equal access to justice accounts? So give me a number.

Mr. ROBERTS. I am not aware specifically industrywide exactly that number. Unfortunately, it is relevant to us, and it does seem to be increasing in a lot of projects.

Dr. GOSAR. Would you say it is 50 or 60 percent?

Mr. ROBERTS. I don't think it is that high.

Dr. GOSAR. Really. OK.

Ms. REILLY. I don't have a number that I can give you, but it is a significant part of the development costs, and quite a lot of what our company does is development and construction. But in the development phase of a project, a large part of the spend is focused on permitting.

Mr. GORDON. Mr. Gosar, the Massachusetts Bar Association has voted me client of the year for the last 10 years in a row. I would say that over 70 percent of our investment in the Cape Wind project, which I mentioned before, has gone to permitting and judicial. But here is the saddest part of it all: The judicial is driven by basically one opponent. And although the project has the support of over 86 percent of Massachusetts citizens, the national, local, regional environmental organizations, labor, health advocates, the Massachusetts Legislature, the Patrick Administration, the congressional delegation, one small group can tie you up in knots for many years.

Dr. GOSAR. Thank you.

Mr. LANARD. I don't want to contradict my colleague here, the client of the year, so I will just pass. I agree with him.

Mr. RESCH. We represent large-scale and small-scale solar, and I think that the biggest problem is not necessarily the percentage, but how it becomes a fundamental barrier for small businesses to enter in and actually have a business, where you can't spend the $10 million or the $20 million to get from concept to contract. And that, I think, is a huge barrier for frankly what is the backbone of the American economy, small business.

Mr. DEROSA. Representative Gosar, I will give you some numbers. First of all, we have a small project in your district. But these larger projects, utility scale, we might spend $20 million in the development of those projects, and I would say roughly $5 million of that goes to the permitting process.

Dr. PISZCZALSKI. I think that it is difficult to put your finger on the figure. For instance, if there is a delay that can have the company not hit its contracted delivery date of the power, and hit penalties there, because the utility doesn't get the power when they ex-

pect it. But to give you one number, for instance, SunRun of San Francisco spends 33 percent of their costs on permitting.

Mr. REICHER. I am going to take a different view. There are development costs in a project, and there are finance costs. I was in the project finance business for a number of years. You can face a significant percentage of development costs for permitting. The big costs in a project, the vast proportion of costs, are in the project finance, the equity and the debt. We just heard 5 of 20 million, but this could be a solar project that costs hundreds of millions to ultimately bill.

You have to be careful when we say that it is a high percentage. It could be a decently high percentage of the small, relatively small, development costs. It will be a very small percentage of the total project costs.

Dr. GOSAR. However, each time that you have a delay, that is running money.

Mr. REICHER. No doubt. But, again, let us be careful here. When you are talking about these projects that are measured in hundreds of millions and billions of dollars, permitting costs are a very small piece of that.

Dr. GOSAR. When you start looking at the processes in my district, when we are talking about a NEPA process now going on to 6 years, and we are looking at these lawsuits, we got projects on the Native Americans that they go through another step. They go through the BIA, which is another hurdle. How absurd is this? Some of these projects will never, ever see fruition because of the agencies.

Thank you.

Mr. REICHER. Those absolutely need to be fixed. No doubt. I just want to correct the math.

The CHAIRMAN. The time of the gentleman has expired.

Unfortunately, we are going to have to break. We only have 2 minutes on this vote, and we have two Members that want to ask questions. So we only have one vote. We will recess so the Members can go over and vote and come back. Let us try to set a target time of 1:20 to try to reconvene.

The Committee stands in recess subject to the call of the Chair, which we hope will be around 1:20.

[Recess.]

Mr. LAMBORN. [presiding.] The Committee will come back to order, please.

Thank you for your patience while we took a vote recently. I will be filling in as Chairman now for the remainder of this hearing. Thank you for being here today. I know a couple have had to get to the airport. Thank you also for your indulgence. Because of the meeting at the White House, which wasn't anticipated until maybe even yesterday, that pushed everything back for our schedule today. So sorry for any inconvenience, but we appreciate your finishing up the hearing.

I believe the next person in line to ask questions is Representative DeFazio of Oregon.

Mr. DEFAZIO. Thank you, Mr. Chairman.

For Mr. Roberts with AWEA, the AWEA sent out a press release on May 17th that refers to nitrogen levels in the Columbia. The

controversy is that we have perhaps what one can say is too much of a good thing, too much wind, too much hydro. BPA has curtailed as much thermal as they can curtail and is at this point having to curtail wind, and the wind energy is upset because they—even though their customers still get their electricity, as you know, you don't get your subsidies through the tax system.

So, you are purporting to say that we could spill more water, depending upon Save Our Wild Salmon. And I am a bit curious, are you an attorney?

Mr. ROBERTS. No, Congressman, I am not.

Mr. DEFAZIO. All right, you are not an attorney. Good, because I am not either. So we are off to a good start.

But the point here is that the judge, who is both an attorney and a Federal judge and lord and master, has said EPA must comply with the Washington State standards. That judge has ruled that. Save Our Wild Salmon doesn't like that, and, you know, if we followed the lead of Save Our Salmon, we would kind of incur the wrath of the judge. So I would suggest that you might look for other practical ways of addressing this issue. But that is not one, given Judge Redden's position on this issue, which is quite firm, that we cannot increase the dissolved gas levels.

So since spill is not possible, I guess I would like to ask, the implication here is that—I mean, first off, it seems to be—as I said, it is not preventable, but second, are there things we could do so that you could continue to produce and get your tax subsidies while we have high-water years? And I think, yes, there are a couple of things.

One would be improved transmission. BPA is looking at improving the DC line. It would be phenomenally expensive. Would the wind energy producers be willing to share in the cost of improving transmission if they could be given more assurance that they could transmit their power and get their tax subsidy during periods of high water?

Mr. ROBERTS. Congressman, on the nitrogen levels, I agree with you that this is a very thorny issue.

Mr. DEFAZIO. Look, we are done with nitrogen levels. I mean, the judge has ruled. The judge has ruled. I agreed with a lot of what the judge has done, as has Doc Hastings, but that is where we are at. So let us get on to the other issue.

If we could look at other ways of allowing you to continue to produce electricity so you can get your subsidies—even though your customers are always held harmless in this condition, but so you could continue to get your subsidies—in order to get those subsidies, would you be willing to pay some of the costs of upgrading transmission to your customers in California?

Mr. ROBERTS. Congressman, of course we would. I mean, to make a more flexible system. One point I do want to disagree just slightly is we have contracts, and those contract obligations potentially will not be met. It is more than subsidies.

Mr. DEFAZIO. Well, your obligations are met in that these people are getting their power. California has some very perverse rules regarding what is renewable and what isn't, and they don't seem to like hydro, so therefore these people aren't meeting their renewable

energy requirements. I would say that that is a problem you have with the State of California and not with the Northwest region.

I mean, the bottom line for me is our ratepayers are not going to subsidize you since taxpayers already are, and if you want to bump us off the system somehow, that is a problem and a concern. I represent the Northwest, I represent Northwest ratepayers, and we are looking for a way out of this. To me, that would be enhanced transmission, and I am pleased to hear you would be willing to negotiate some additional cost to the industry to looking at upgrading the DC line, which might be a solution that works for both. That way, other ratepayers could avoid that part of the cost, could benefit you, and then your customers could still get their electrons, which apparently are labeled with a W as opposed to an H down there in California so that they can meet their obligations for the State. But I think the State might sort of rethink some of their bizarre rulemaking down there.

Thank you, Mr. Chairman.

Mr. LAMBORN. Thank you.

Now Mr. Duncan of South Carolina.

Mr. DUNCAN. Thank you, Mr. Chairman. I appreciate the Chairman having this hearing.

The first time I saw wind power was over in Germany. I was fascinated with the windmills. Then I was out in the Chairman's hometown, Pasco, Washington, and saw some windmills out there, and actually were able to drive up and stand right under them, and sort of looking into the wind industry at the Hanover trade fair in Germany as well. So I appreciate the industry being here to talk with us about this.

You know, sitting on this Committee, I can tell you, most of us are all about a complete and comprehensive energy policy for this country, which includes renewables of wind, solar, hydrogen, algae production for fuel. We just saw the Blue Angels, I believe, fly on algae jet fuel. So we will continue down that comprehensive energy policy, but we cannot ignore the fossil fuels, the hydrocarbons and also nuclear power. So I want to make that statement.

But what we see out of this Administration is them saying one thing and doing something completely different; saying that they are all about renewables, about increasing opportunities there, but then they tie your hands with the regulations, and they tie your hands with areas that they are going to allow some of this wind farms or solar fields to be implemented.

Last week, Mr. Chairman, we discussed in the Subcommittee the Fish and Wildlife Service and the amount of land they are wanting to continue to buy, and they can't maintain what they have now. They are asking for more money. It was very obvious they can't maintain the new structures that were being built with stimulus money.

Looking at this map, and thinking about the Western States where the solar possibilities are, and thinking about how much Federal land is owned in Utah and Arizona and New Mexico, and wondering how much in this darkest circle here could possibly be used for solar power. It is ungodly, the amount the Federal Government owns. I know the Western Caucus has been talking about

this, trying to reverse that trend and put some of that land back in private hands.

Another Committee hearing we had, Mr. Chairman, we talked about the secretarial order that Secretary Salazar, I think, signed in December to expedite the designation of wilderness areas from wilderness study areas. Only Congress has the ability, I believe, to designate wilderness area, but the Bureau of Land Management is implementing what the Secretary, their boss, told them to do.

So we are having properties being taken off the table designated as wilderness areas, and once they are designated as wilderness areas—and I have been to the Bob Marshall Wilderness Area in Montana. I know what you can and cannot do there. You can hike or go on horseback, and the only other means of transportation going in there, hiking and horseback. You take everything in that you need, and you pack it all back out. There are no telephone lines, no power lines, no cell towers, no roads, no bridges. And so once these properties are designated as wilderness areas, they are off the table for good, and you won't be able to put a wind farm or a solar field there at all.

So, anyway, I want to change the line of questioning here and tell you from South Carolina, we might have a little wind off our coast. There is one little area off Georgetown that might be a possibility. And the reason that is the only possibility is that is the closest area to the grid.

Having access to the transmission lines are one of the biggest obstacles, I think, to wind power in this country. You can simply ask T. Boone Pickens, who was running down that track and realized that was the number one obstacle. It would be the biggest cost hurdle for him in developing solar. Then you had the fuel prices change. I think that helped out a little bit, or stymied him a little bit.

So the questions I have, first off, is what do we need to do to increase access to the grid? Is that an issue? Because I haven't heard it, and I haven't been sitting here the whole time.

Then the second thing I want to ask is about the golden eagles. I would like to find out from Mr. Roberts, how many golden eagles have been killed in the last 20 years? I am going to ask you that one first because that is an easy one.

Mr. ROBERTS. Congressman, I defer this to Ms. Reilly, because she has been working on that issue.

Ms. REILLY. Sir, we recently have a report on the mortalities with the golden eagles, and if you look at the mortality rate of eagles killed by human sources, the wind industry accounts for less than 1 percent. In the last 24 years, 24 years, we calculate about 12.

Mr. DUNCAN. When you say less than 1 percent, is that from wind, or is that from all human sources?

Ms. REILLY. No. The wind industry, modern wind turbines account for less than 1 percent of mortalities of eagles caused by human causes, like buildings or traffic.

Mr. DUNCAN. We are going to stymie a whole industry over less than 1 percent of the man-made kills, which I think are 5 or 6 in the last 20 years. It hasn't been that many.

So I know I am out of time, Mr. Chairman. If we are going to have a second round of questioning, or I can continue.

Mr. LAMBORN. First let us take Representative Napolitano from California, and then we will see what the witnesses want to do.

Ms. NAPOLITANO. Thank you, Mr. Chairman. Am I next?

Mr. LAMBORN. Yes, I meant to recognize you. Please continue.

Ms. NAPOLITANO. Thank you, Mr. Chair.

I have a great interest in wind, but more than that in solar, photovoltaic production, and the questions that I have are going to be mostly related to that, although I have one specific one to the Federal Advisory Committee guidelines.

The guidelines used are significant, the adverse impacts or effects, contrasted with the February 2011 guidelines that use merely adverse impacts. Projects that pose low risk to wildlife with potential insignificant adverse impacts thus would require the same level of assessment and efforts as higher-risk projects, using significant adverse impact as a threshold, well established under both the NEPA and ESA.

Could you indicate, any of you, what your comment is on that?

Mr. ROBERTS. Yes. Congresswoman, the issue is that——

Ms. NAPOLITANO. Now, I have 5 minutes, so please be very, very precise.

Mr. ROBERTS. The industry worked with advocates and stakeholders on creating a process called the Federal Advisory Committee. It started with the last Administration and was accepted by this Administration. These rules changed that process. What this does is—one of the biggest problems is the proportionality thing in Utah. A site that we all know is not a problem we have to do the same amount of research on.

Ms. NAPOLITANO. I have other questions, sir. Thank you.

Anybody else, real quickly?

No. OK.

I want to focus a little bit more on the Native American issue that I have a great concern about, because none of you talk about placing on Native American land any of the wind or solar. I am involved with two organizations, IBW and NECA, that are doing this and California tribes. How would that affect what you do, or how can we continue to push forward? Because the budget in the BIA and the operation of Indian programs is dismal, to say the least, to be able to help them.

This would build on site many factories of solar panels, training Native Americans in IBW, the electrical engineers, to become engineers. So you produce not only training, but job programs and economy. Is anybody looking at that?

Dr. PISZCZALSKI. I could comment a little. Doing power projects on tribal lands is even more difficult than on public lands that are nontribal. So that certainly has been a major holdup.

Ms. NAPOLITANO. I would like to talk to you about that, sir, because we are trying to get through with Secretary Salazar in the last year to develop some kind of guidelines to expedite these things.

Dr. PISZCZALSKI. OK. I could talk to you off line on that.

Mr. DEROSA. If I could speak to that, we have some firsthand experience with that, and some tribal land in the Southwest is excel-

lent solar land. And First Solar, we are working with tribal entities—it is not public, so I can't say with whom, but we are working hard on that.

Ms. NAPOLITANO. I would love to talk with you about it, sir.

Then are you doing any partnering with R&D universities and then universities that are doing a lot of the research to help with explanations and comments on some of the projects that you have been working on, whether solar or wind, or geothermal for that manner? Nobody?

Mr. DEROSA. We work on the local project level. Like in southern California we work with some of the community colleges on education and job training.

Ms. NAPOLITANO. No, I am talking specifically on some of the research they are doing on water and things that they are finding out about new technology, and even such dumb things as the elimination of the quagga mussel.

Mr. DEROSA. I would have to look into that one.

Mrs. NAPOLITANO. Anybody else?

Mr. RESCH. There are certainly partnerships between the solar industry and a variety of different universities, Arizona State in particular is one that has really stepped forward and brought together their business school, their law school, their engineering departments and created some very robust decisionmaking programs. And their Decision Theater at ASU is really world class in helping identify multiple issues that would prevent solar——

Mrs. NAPOLITANO. Well, the Department of the Interior finds some 30-some universities to do R&D, and we are not asking them to focus on specific issues. So maybe that is when we begin to throw some ideas their way.

Then the last question I have is public-private partnerships, setting up a fund or being able to work and being able to bring those folks in, especially those from Wall Street, any others that are interested in a sure thing, because this is a technology that is evolved already. It is just assistance with the funding. The same thing in transportation. We find that we don't have the ability to go out and do it ourselves, or the locals don't. So public-private partnerships are going to be critical.

Has anybody begun to ask who, where, when and how of being able to formulate bringing them in?

Mr. LAMBORN. [presiding.] Can anyone answer that in 25 words or less?

Mrs. NAPOLITANO. Or in writing, for that matter.

Mr. REICHER. I would simply say that smart developers of renewable energy projects, solar and wind, increasingly know to go where there are big resources available and where there is support at the public level.

Mrs. NAPOLITANO. It is like the university. They do a lot of research, and only they know—they put it on their Website, but nobody knows what the Website is. So we have to be a little more transparent in being able to get the information so people can use it, really can get to it.

Mr. LAMBORN. All right. Thank you.

And rather than ask your indulgence for a second round of questions, even though there are only a handful of people here, I am

going to just wrap up this round, and that will be it. I am the last person, but I am going to give my time and yield to the gentleman from South Carolina, who will finish us up.

Mr. DUNCAN. Thank you, Mr. Chairman. I just want to finish the line of questioning about the transmission before I ask my final question. And I guess the Wind Association would be the person to ask.

A transmission is an area that you don't hear that much about. You hear about the sound of the windmills, and the flash, and the killing of the eagles and that sort of thing. But I understand transmission lines being a big obstacle. Can you touch on that for me and what we are doing about that?

Mr. ROBERTS. Yes. It is a big obstacle. It is very important to our industry to deal with. On the public lands we can do some more streamlining, and we really encourage the Federal agencies to work with the regulatory commissions and work with the legislators to help us make siting of transmission faster and easier. And that is some work that can be done.

On a national level, of course, we need to work with the FERC, with the regional planning groups, et cetera, to create a strategy to reinvest in our transmission system, and we have a long way to go there. It has been woefully invested in for the past 50 years, and we have some catching up to do. So that is a high priority for the industry and something that leadership from this Committee and from this Congress would be greatly appreciated.

Mr. DUNCAN. Is that a big hang-up with offshore areas, too, where you are limited?

Mr. LANARD. Mr. Duncan, let me just talk about the offshore for 1 second, if I may. Thanks.

Congressman, we work a lot with Santee Cooper. They are doing some really thoughtful, progressive work on assessing wind resources and how to move forward in South Carolina for offshore wind.

The question on transmission for us is looking at possibly the opportunity for an offshore back—I would defer to you, Dan. I think you are going to talk about that. The Atlantic Wind Connection is one of our members proposing a project that will go from northern New Jersey down to Virginia, and it could possibly even go further if those States demonstrate an interest and create the demand for offshore wind. So we do have—and what would be interesting there is we would be bringing power from the east to the west, which doesn't occur in the United States generally along the coast. It has always flowed the other way in a radial feed situation. So this type of transmission system improves reliability. It is much greater than just serving the offshore wind industry; it is serving the ratepayers by having a more reliable and more robust system.

Mr. REICHER. Can I just add that when I was at Google, we made an investment in this Atlantic Wind Connection, the offshore backbone transmission line that would run from New Jersey to Virginia, And it is a great project, Mr. Duncan. It would avoid a lot of individual lines having to be built from each wind farm to the grid on the East Coast, and it would improve the efficiency of the transmission system on the East Coast. It would allow wind turbines to be sited further offshore so permitting is easier, and there

would be less objection from residents along the coastline, and it would add to the security, frankly, of the East Coast grid. So it is a real win-win, and I think it is one of those projects that, if it works its way successfully through permitting, it is a great one to build.

Mr. DUNCAN. Thank you.

We often hear—last question—about the impacts of budget cuts and regulation on industry development. And so in your opinion, do you think budget cuts or regulation have a bigger impediment to renewable energy development on public lands? I ask each one of you there.

Mr. ROBERTS. Mr. Chair, good question. I think it is a combination of both. I mean, if we had a simpler process and a more streamlined process, we could get away with less staff. But with the existing regulations and not change them and cutting staff would be very harmful to us getting our permits done in a timely fashion.

Mr. DUNCAN. Ms. Reilly.

Ms. REILLY. To repeat what we said earlier, we need efficiency in the process. And we think we can make savings if we have more efficiencies and people are focused on getting outcomes.

The other thing I would just mention is that the industry has offered to help with the cost of processing permits in a more expeditious fashion, and we would ask that to be considered.

Mr. DUNCAN. Just the rest of you, just regulation or budget impacts, which do you think?

Mr. LANARD. Budget impacts for offshore wind, and the investment tax credit, and loan guarantees are critical for our industry right now.

Mr. RESCH. Absolutely, budget impacts for solar as well. We have great systems in place; we just need the staff to make sure they are administered and processed.

Mr. DEROSA. Yeah, I agree. But we have to be careful not to cut off our nose to spite our face. There are laws on the books. If a permitting process is not done thoroughly, it just opens a project up to lawsuits. So in our terminology, a project needs to be bulletproof in its permitting effort.

Mr. PISZCZALSKI. I guess I would weigh in on the regulatory side in that it is then given too little attention.

Mr. REICHER. I would just say healthy budgets and effective regulation, we need both.

Mr. DUNCAN. Thank you.

Thank you, Mr. Chairman.

Mr. LAMBORN. Thank you. And thank you, each member of the panel who came here to testify today. We appreciate your testimony. We appreciate you making yourselves available to answer questions. And please remember that there may be additional questions that members of the Committee submit to you in writing, and we would ask you to respond to those.

Mr. LAMBORN. And as a final piece of business, I ask unanimous consent to add two additional pieces of testimony to the record. If there is no objection, so ordered.

Mr. LAMBORN. If there is no other business, then, without objection, the Committee stands adjourned. Thank you.

[Whereupon, at 1:51 p.m., the Committee was adjourned.]

[Additional material submitted for the record follows:]

[A letter submitted for the record by Johanna Wald, Western Renewable Energy Project, Natural Resources Defense Council; Pamela Pride Eaton, Deputy Vice President, Public Lands, The Wilderness Society; and Jim Lyons, Senior Director for Renewable Energy, Defenders of Wildlife, follows:]

May 26, 2011

The Honorable Doc Hastings
Chairman, House Committee on Natural Resources
1324 Longworth House Office Building
U.S. House of Representatives
Washington, DC 20215

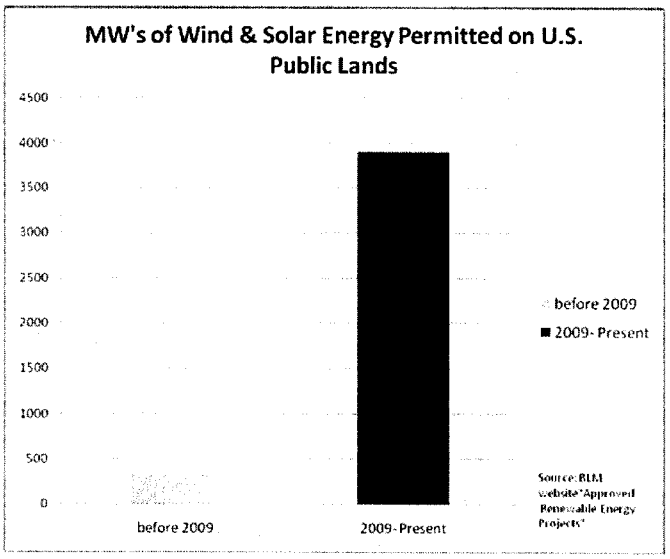
The Honorable Edward Markey
Ranking Member, House Committee on Natural Resources
1329 Longworth House Office Building
U.S. House of Representatives
Washington, DC 20215

Dear Mr. Chairman and Ranking Member Markey:

On behalf of the Natural Resources Defense Council, The Wilderness Society, and Defenders of Wildlife we are writing to express our strong support for renewable energy development on the public lands. Our collective organizations believe that this nation must embrace renewable energy as a paramount strategy in order to reduce global warming pollution and increase economic and job growth, while also ensuring energy security. We also want to share with the Members of this Committee our experience that the application of consistent environmental review in concert with a thoughtful planning process are essential elements in successfully deploying renewable energy to scale. Meeting our country's energy needs with clean renewable energy requires significant investments that must be undertaken immediately, but these investments must not jeopardize and devalue our nation's commitment to conserve this country's incomparable natural heritage.

In a dramatically short time, our nation has seen the unprecedented expansion of wind, solar, and geothermal generation across the land. Over the last two years, during one of the worst economic crises of recent history, the installed capacity of wind generated energy in this country grew by 60%. Much of the growth — present, past, and future — has or will take place on the nation's resource rich public lands. This is represented by the Department of the Interior's (DOI) pledge to establish an enduring commitment to tap renewable energy resources, especially as compared to those of previous administrations. In just two years, DOI has permitted more renewable energy projects than ever before, with many additional projects proposed for development on public lands for 2011 and 2012. The figure below displays the magnitude of this increase over the last two years. In 2010 alone, nine solar energy projects, one wind project, and two geothermal projects were permitted on public lands in the West, for a combined capacity of nearly 4,000 megawatts of power. We are supportive of the effort to transition to a renewable energy future, and commend the Bureau of Land Management (BLM) for the unprecedented effort to permit utility-scale solar and wind projects in CA and Nevada in 2010. We will continue to work cooperatively with the BLM and other federal, state and local agencies in seeking opportunities for renewable energy project development that are appropriately located in the right areas (including on lands that have been

previously disturbed lands such as brownfields), environmentally sustainable and do not undermine our efforts to conserve wildlife and natural resources.



But after years of inattention and inactivity, we must consider that renewable energy permits are being evaluated and reviewed by a BLM system that was not originally conceived for these types of technologies in mind. This makes environmental laws, including especially the National Environmental Policy Act (NEPA), indispensable to ensure that projects are built in a manner that maximizes their energy potential while avoiding impacts that would undermine the viability of sensitive environmental resources. As 40 years of experience has demonstrated, NEPA provides the tools to ensure that decisions on federally funded or authorized projects are made with the highest quality information on a range of alternatives and with public input from concerned individuals and affected communities. Rather than being a hindrance to development, our experience in working with developers, utilities, financiers, and the federal agencies on these projects, is that NEPA provides an essential blueprint to guide the approval process. In fact, NEPA ensures that these renewable energy projects are stronger, more resilient, and less likely to experience delays later in the process.

Furthermore, early stakeholder engagement established through the NEPA process saves the government money by identifying resource conflicts early, which leads to fully informed decisions. The only way to secure the successful deployment of clean renewable energy is to ensure that projects proposed in the future are as efficient, cost effective, and environmentally attuned as possible. A robust planning and permitting process is the key to guarantee that this can come about.

Unfortunately, those interests long-opposed to NEPA are hiding behind the public's overwhelming support for clean, renewable energy in an attempt to shortcut, shortchange, or scuttle NEPA's core provisions. They put forth a false choice of either protecting our public lands or building renewable energy quickly. More specifically, the charge has been made that the NEPA review process, along with other environmental requirements, are restricting the pace and advancement of renewable energy projects. We know that this is not true; of the nine solar energy projects permitted in 2010, the average time for environmental review was 527 days, or 1.4 years. The most recent permitting for renewable projects that received BLM's "fast-track" status took an average of 423 days, or 1.1 years to reach a final record of decision. This is well within other permitting time frames for similarly sized projects, consistent with the timetables set out in government guidance documents, and is remarkable given that these projects are unique in scale and complexity.

Fast Track Solar Projects Approved in 2010

Project Name	State	NOI Date	DEIS Date	FEIS Dates	ROD Date	Days from NOI to ROD	Days from DEIS to ROD	Administration
Blythe	CA	November 23, 2009	April 6, 2010	August 20, 2010	October 22, 2010	333	199	Obama
Genesis	CA	November 23, 2009	April 19, 2010	August 27, 2010	November 4, 2010	346	199	Obama
Crescent Dunes	NV	November 24, 2009	September 3, 2010	November 26, 2010	December 20, 2010	391	108	Obama
Lucerne Valley	CA	July 23, 2009	February 5, 2010	August 13, 2010	October 5, 2010	439	242	Obama
Silver State	NV	June 30, 2009	April 16, 2010	September 10, 2010	October 12, 2010	469	179	Obama
Amargosa Farm Road	NV	July 13, 2009	March 19, 2010	October 15, 2010	November 15, 2010	490	241	Obama
Calico	CA	June 8, 2009	April 19, 2010	August 6, 2010	October 20, 2010	499	184	Obama
Imperial Valley	CA	October 17, 2008	February 12, 2010	July 28, 2010	October 5, 2010	718	235	Bush
Ivanpah	CA	November 6, 2007	November 10, 2009	August 6, 2010	October 7, 2010	1066	331	Bush

NOI Notice of Intent to Prepare and Environmental Impact Statement DEIS Draft Environmental Impact Statement FEIS Final Environmental Impact Statement ROD Record of Decision

We agree with you, though, in that the subject of today's hearing is critically important as we have indeed seen actual "roadblocks" that prevent more solar, geothermal, and wind projects to proceed or move at a quicker pace, namely, uncertainty in financing and first-of-a-kind technology at this scale. One of these factors is the uncertainty that exists around the prospective status concerning federally backed financial incentives critically necessary to ensure that this nascent industry can compete domestically. For example, the Ivanpah Solar Electric Generating System and the Blue Mountain Geothermal project received renewable energy loan guarantees from the Department of Energy that were critical to their successful permitting. Development of utility-scale renewable energy projects will benefit greatly from predictable and consistent governmentally backed incentives that put them on a level playing field with other more mature energy sources.

Our conservation organizations understand these critical needs, and to that end we have aggressively supported financial and tax incentives that would secure a predictable growth path for renewables. Among these programs and incentives, we have supported:

- Extensions of production and investment tax credits;
- Extension of the highly successful 1603 Treasury Grant Program;
- Legislation such as the "10 Million Solar Roofs and 10 Million Gallons of Solar Water Heating Act of 2010;"
- The Department of Energy's *Section 1705* Loan Guarantee Program;
- Test facilities to ensure a transition to commercial scale;
- Measures to improve planning and avoid speculative permit applications; and
- Multiple pieces of legislation to address the backlog in permits.

We have learned a great deal from our past experiences with conventional and renewable energy development. Most importantly, we have learned that a strategic and coordinated approach to designing energy generation and transmission at the beginning stages of project planning not only facilitates energy development, but also help preserve the rich natural and cultural heritage that our public lands provide. If we are to reach our common goal of successfully and efficiently meeting our country's energy needs with clean renewable energy, we must focus our attention on the true barriers to renewable energy deployment, such as financing and technology. By committing to a framework that includes thoughtful planning and siting processes, we can conserve our nation's natural treasures while also enjoying the considerable benefits associated with a new energy economy that is predicated upon the utilization of clean renewable energy.

Our organizations are fully committed to working with you on these timely issues and appreciate your strong leadership in this regard. Thank you for your consideration of this statement.

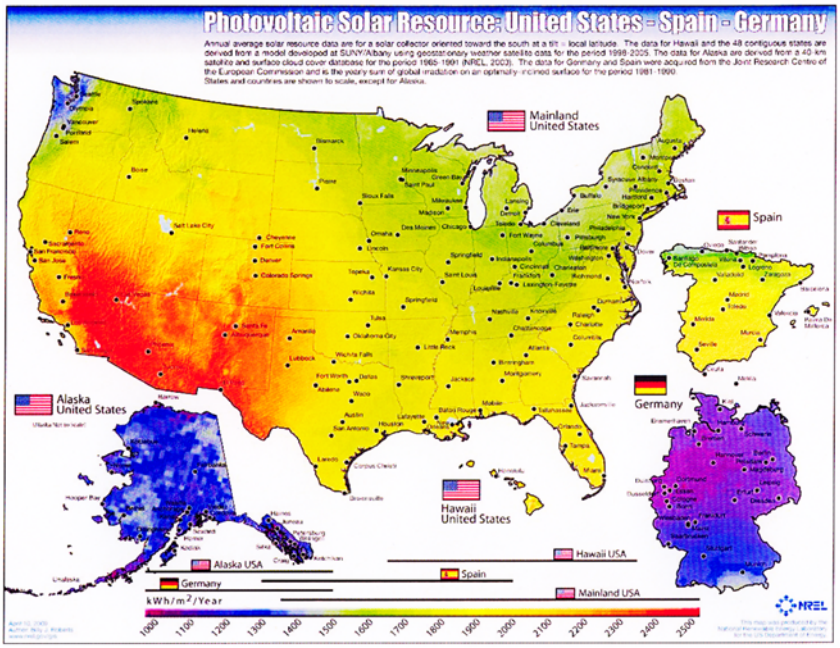
Johanna Wald
Western Renewable Energy Project
Natural Resources Defense Council

Pamela Pride Eaton
Deputy Vice President, Public Lands
The Wilderness Society

Jim Lyons
Senior Director for Renewable Energy
Defenders of Wildlife

ATTACHMENT 1

MAP OF U.S. SOLAR RESOURCES COMPARED TO GERMANY AND SPAIN



[A statement submitted for the record by Chris Donavin, President, Energy Dense Power Systems, follows:]

Statement submitted for the record by Chris Donavin, President, Energy Dense Power Systems

Mr. Chairman, thank you for the opportunity to submit testimony for today's hearing before the House Natural Resources Committee. My name is Chris Donavin, and I am President of Energy Dense Power Systems (EDPS), a privately held company headquartered in Owings, Maryland that was established to develop unique battery-based power management product solutions. Our products have been integrated into a variety of applications requiring remote power across many industries, including the scientific, military, marine, and telecommunications industries.

Our products are safe, rechargeable Lithium-Ion power systems that are lightweight, rugged, and portable. One of the most exciting features of our technology is the ability to store and manage input power from renewable sources such as solar, fuel cells and wind generator as well as conventional generators and the grid.

We are currently providing our product to the Department of Defense to meet very specific needs for smaller, lighter, and more energy dense power solutions. We are also reaching out across the federal agencies to offer this unique product as a strategic capability to help the federal government generate and store power more efficiently, and to make better use of alternative and renewable energy sources.

While today's hearing is focused on large scale efforts to harness renewable resources on federal land, I believe that it is also important to discuss the opportunity for the federal government to more broadly utilize products such as those developed by EDPS in order to reduce their own reliance on fossil based fuels.

About EDPS

Energy Dense Power Systems LLC specializes in high energy density scalable power solutions ranging from small portable applications (<12OO Watt-hours) up to larger fixed installations (>25 kWatt-hours). Our power management technology generally is used to provide primary and backup energy storage, to power electronics, medical and telecommunications equipment, provide UPS backup as well as provide power to a variety of other DC and AC appliances. Our system is extremely scalable to accommodate almost any power requirement. In general, our installation base includes systems with energy densities between 65–200 Watt-hours per kilogram. (30–90 Watt-hours per lbs). The system readily accepts and manages input power from renewable sources including solar and wind.SE I63

We believe that EDPS is currently the only US manufacturer of a patented energy dense lithium-ion, scalable power management system. In addition we believe EDPS is the only company currently that complies with the DOT–UN transport requirements for lithium ion batteries transportable as non-hazardous cargo.

Department of Interior Need for Portable Power

The Department of Interior, with expansive land in remote areas, has a significant need for renewable and portable power. In fact, the Agency has posted numerous requests for proposals to provide portable power solutions to the Agency. In my experience, the Agency often posts very prescriptive and specific solicitations for portable power that offer limited opportunities for creative technology applications.

For example, in November 2010, the National Park Service solicited bids for a renewable energy system for the Bechler Ranger Station (Solicitation Q1574110004). As outlined in the solicitation, EDPS has several products that could have fulfilled the needs of the National Park Service that would have been both environmentally friendly, and cost effective.

Unfortunately, our product is a Lithium-Ion based system and, as a result, was not eligible under this solicitation. As President of EDPS, I reached out to the contract officer to share the features of our safe, rechargeable Lithium-Ion power system. Specifically, I shared the fact that the EDPS product would be a lighter, more cost-effective and more environmentally friendly alternative to the lead acid system that the National Park Service was soliciting. I also highlighted the tremendous life cycle cost savings that the Park Service would benefit from as well as reduced logistical costs associated with a battery system that is roughly half the weight of comparable lead acid systems. The life cycle of lithium based systems is up to 3000 charges at 80% DOD. That eclipses lead acids capability of roughly 300 at 50% DOD.

We believe that the EDPS product could provide dramatic cost and energy benefits not only for the Bechler Ranger Station, but for any facility within the Department of Interior that has a need for portable and energy dense renewable power.

We look forward to the opportunity to discuss our product not only with the National Park Service, but also with the Bureau of Land Management and other Department of Interior agencies. As the Department of Interior continues to examine its power needs, however, we do urge the Agency not to include overly prescriptive requirements that preclude specific technologies.

Conclusion

One of the great challenges facing increased utilization of renewable power sources such as solar and wind power is the difficulty in capturing and storing the power. There is a nearly infinite supply of power that could be generate by sun and wind. But we are limited in our ability harness that energy, and deliver it to consumers in a cost-effective manner.

As the federal government discusses opportunities to dramatically increase the scale on which we generate this type of renewable power, we believe it is also important to examine the mechanisms that exist to distribute this power to consumers. EDPS has developed a product that can help both government and industry to harness and utilize renewable power. We stand ready to assist with this technology as our nation struggles to become less dependent on fossil based fuels. Thank you again for the opportunity to submit testimony for today's hearing. I look forward to continuing to work with you.

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