SOLAR ENERGY DEVELOPMENT ON FEDERAL LANDS: THE ROAD TO CONSENSUS

OVERSIGHT FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES

OF THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

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CONTENTS

	Page
Hearing held on Monday, May 11, 2009	1
Statement of Members:	
Bono Mack, Hon. Mary, a Representative in Congress from the State of California	8
Prepared statement of	10
Costa, Hon. Jim, a Representative in Congress from the State of California	1
Prepared statement of	5
Lummis, Hon. Cynthia M., a Representative in Congress from the State of Wyoming	6
Statement of Witnesses:	
Abbott, James, Acting California State Director, Bureau of Land Management, U.S. Department of the Interior	39
Prepared statement of	41
Chong, Rachelle, Commissioner, California Public Utilities Commission	35
Prepared statement of	37
Response to questions submitted for the record	39
Corcoran, Bill, Senior Regional Representative, Sierra Club, Oral statement on behalf of Carl Zichella, Western Renewable Projects Director, Sierra Club	68
Ferguson, Hon. Jim, Councilman, City of Palm Desert, California	12
Prepared statement of	14
Renewable Siting Criteria for California Desert Conservation Area	21
Response to questions submitted for the record	24
Gensler, Katherine A., Manager of Regulatory and Legislative Affairs, Solar Energy Industries Association	74
Prepared statement of	76
Response to questions submitted for the record	79
Kretzschmar, Thomas M., Real Estate Division, Baltimore District, U.S. Army Corps of Engineers, U.S. Department of the Army	47
Prepared statement of	49
Response to questions submitted for the record	50
Levin, Julia, Commissioner for Renewable Energy, California Energy Commission	26
Prepared statement of	28
Executive Order S-14-08	29
Response to questions submitted for the record	32
Malnight, Steven, Vice President, Renewable Energy, Pacific Gas and Electric Company	62
Prepared statement of	64
Response to questions submitted for the record	67
Niggli, Michael R., Chief Operating Officer, Sempra Energy Utilities	80
Prepared statement of	82
Response to questions submitted for the record	88
Zichella, Carl A., Director of Western Renewable Projects, Sierra Club, Prepared statement of	71
Response to questions submitted for the record	73
Additional materials supplied:	
Anderson, Ileene, Desert Program Director, Center for Biological Diversity, Statement on the Implementation of Renewable Energy Projects in the Western United States	103
Basin and Range Watch, Letter submitted for the record	105

Page

Additional materials supplied—Continued

Form letter on "Solar Development in the San Luis Valley, Colorado," delivered by CitizenSpeak!, with personal comments submitted for the record by the following individuals: Andy Zaugg; Catherine Broadbent, San Luis Valley Water Protection Coalition; Cecelia Smith, Director, San Luis Valley Water Protection Coalition; Charles Tidd, San Luis Water Protection Coalition; Claire Barker; David and Renee Hill; Dr. Bonnie M. Orkow; Francis Bonny; Glyder, Biosphere Coalition; Jay Bremyer; Kathryn Van Note, San Luis Valley Water Protection Coalition; Liza Marron, LiveWell Alamosa, ScSEED, Mountain Valley School Board; Matthew Crowley, Shumei International Institute; Pavita Decorah, Sri Aurobindo Learning Center; Randi Young; Ron Sitts; Sandia Belgrade; Stephen Smilack; Tamar Ellentuck 107

Form letter on "Solar Done Right" delivered by CitizenSpeak!, with personal comments submitted for the record by the following individuals: Andy Liberman; Annette Rojas; Arvind Says; Brendan Hughes; Cecelia Smith, San Luis Valley Water Protection Coalition; Chris Clarke; Connie Crusha; David Crawford, Desert Protective Council; David McMullen; Diane Conklin, Mussey Grade Road Alliance; Donna Thomas; Florian Boyd; George Wuerthner; Gidon Taylor Singer; Helena Quintana; James Dyer; Janeen Armstrong; Jill Giegerich; Karen Schambach, Public Employees for Environmental Responsibility; Katherine McTaggart; Kim F. Floyd; Kurt Leuschner, Desert Cities Bird Club; Laraine Turk, California Desert Coalition; Larry Hogue, Desert Protective Council; Linda Harter; Luana Lynch; Mesonika Piecuch, ORV Watch Kern County; Michael Howard; Michael Pinto; Nick Comer; Nick Ervin; Olivia de Haulleville; Philip Leitner, California State University; Phillip Schuyler Carskaddan; Rachel Shaw, Sungazer Photography and Images; Richard Ryan, Desert Protective Council; Ruth Rieman; Spencer Berman; Stacey Landfield; Steve Hartman; Terry Frewin; Vanessa Rusczyk, The Protect Our Communities Foundation; William Modesitt; Willie Walker 108

Gutierrez, Veronica, Director, Public Affairs, Edison International, Statement submitted for the record 109

White Paper on the potential use of the authority in section 4(d) of the Endangered Species Act to streamline the ESA permit process for renewable energy projects 110

Hartig, Anthea, Regional Director, Western Office, The National Trust for Historic Preservation, Statement submitted for the record 114

Natural Resources Defense Council, Letter submitted for the record 117

Smith, Ceal, Director, San Luis Valley Water Protection Coalition, Letter submitted for the record 118

The Protect Our Communities Foundation, Letter submitted for the record 119

The Wildlands Conservancy (TWC), Letter submitted for the record 124

OVERSIGHT FIELD HEARING ON "SOLAR ENERGY DEVELOPMENT ON FEDERAL LANDS: THE ROAD TO CONSENSUS."

Monday, May 11, 2009
U.S. House of Representatives
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
Palm Desert, California

The Subcommittee met, pursuant to call, at 9:00 a.m., at the University of California, Riverside (UCR) Palm Desert Graduate Center, 75080 Frank Sinatra Drive, Palm Desert, California, Hon. Jim Costa [Chairman of the Subcommittee] presiding.

Present: Representatives Costa and Lummis.

Also Present: Representative Bono Mack.

STATEMENT OF THE HON. JIM COSTA, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. COSTA. Good morning. Oh, we can do a better job than that. Good morning, all these wonderful Californians, I believe for the most part, here in Palm Desert. And we thank the City of Palm Desert and Congresswoman Mary Bono Mack for being gracious hosts—of course along with the University of California, Riverside, for being a partner in the University of California's efforts over the years, and with the State Legislature. I do appreciate very much all the good work UC does throughout our State.

I should introduce myself. I am Jim Costa, and I am the Chairman of the Subcommittee on Energy and Mineral Resources, which is a Subcommittee of the full Committee on Natural Resources in the House.

We are part of a large effort that is attempting to try to help America develop a comprehensive energy effort, and the term I like to use, the term of art, is using all of the energy tools in our energy toolbox that looks at the near term, i.e., now and over the next 10 years, and then over what I view as the midterm between 10 and 20 years, and then beyond, to really achieve the goals that I think all Americans would like to see us achieve, and that is reduce our dependency on foreign sources of energy, to develop a more efficient, more cost effective, cleaner source of energy with the issues that involve climate change, and focus on how we deal with that transition from traditional sources of energy that are critical today,

and they will be critical tomorrow, to new energy sources. In some cases, they are not that new at all.

And, in California's case, obviously, we have done a great deal. And, of course, part of one of those energy tools in our energy toolbox is conservation. As we all know, that is low-hanging fruit, and we know how successful we have been here in California in pursuing that effort of conservation.

Let me get a few housekeeping functions here managed, and then each of my colleagues here have opening statements, and then we will begin with our panel. We have two well-qualified panels this morning, and we have five witnesses on our first panel and four witnesses on our second panel.

And it is the Chair's intent that hopefully we will conclude this hearing sometime around 12:30, 1:00 p.m., I think. We do want to try to get back to—most of us—Washington, either this evening or early, early tomorrow morning. So, we are working under those constraints.

There have been a few modifications to our witness list. I will acknowledge that as we get to that point.

As I said, Congresswoman Mary Bono Mack serves with us in the 111th Congress. She has represented this area for a number of years, has done a good job. I enjoy working with my colleague, and we thank you and your staff, Chris and Paul, for being very helpful to ensure that this hearing goes smoothly. And you have done a great job, and thank you and your staff.

I also want to thank the Ranking Member today, Cynthia Lummis from Wyoming. She is a new Member of the 111th Congress, but she has hit the ground running, having served in the Wyoming Legislature for many years. She comes from a ranching family that goes back to the 19th Century in Wyoming. I am very honored to serve with her.

She has taken a slight detour. Somehow on Mother's Day—I don't know how you get from Wyoming and Cheyenne to Palm Springs, but I guess airlines being what they are today you were able to make that work. We appreciate that, and I hope your family understands that we appreciate you giving up your Mother's Day. That is awful nice of you to do so.

Today's hearing in Palm Desert is kind of fitting and appropriate because, as I said, this Subcommittee deals with energy and minerals on Federal lands. And the focus of today's hearing is on solar energy development and wind development, and how we develop a road to consensus.

I love maps, and this map here, all of you who can see it, I know it is hard back there, but you can see the colors, the red and the different shades of yellow depict those areas that have the most potential to utilize solar power in America. And, as you can see, here in Palm Desert and the southeastern portion of California, as well as the Southwest, is proverbially the "mother lode," to take a term from the 19th Century—solar power in America.

And obviously, there is tremendous potential, as we know, but we need to deal with some of the issues that are of concern as it relates to solar power. In Palm Desert in this part of the world there are, Mary tells me, 360 days of sunshine. I don't know what

happens to those five days that the sun doesn't shine, but I am sure it is nice anyway.

Also, Palm Desert has been a leader in aggressively pursuing, thanks to its City Council, and we have Councilman Ferguson here and the Mayor, on efforts to pursue solar power. The City has picked up and run with state legislation referred to as AB 811, California law, that allows municipalities to provide loans to help homeowners install solar panels on roofs. They also have a feed-in tariff pilot program that makes rooftop solar power even more attractive.

So, we thank you for the good work you are doing here. It was actually featured in The Wall Street Journal, along with other energy efforts that are taking place in cities such as Chicago, London, and Amsterdam. So, we are in the right place, obviously, and I would rather have a hearing here than in Chicago or London or Amsterdam.

[Laughter.]

Not really, no. They are all wonderful cities.

Energy conservation and rooftop solar panels are part of our tools in our energy toolbox, but they are part of, in my mind, an overall comprehensive energy effort. And I think that is what has been lacking. You know, since we had the first gas lines in 1973, President Nixon announced an energy policy, and every President since him has announced an energy policy. And most of the Congresses have tended to act on an energy policy.

And so we might ask ourselves in 2009 why we are not farther along than we are today after all of that time and effort. And I think there are a number of contributing factors on why we are not farther along. But what I think—and I like to underline and put a fine point on it—is that we have never really thoughtfully—we get in these sound bites. Remember the sound bites last September? Use it or lose it? Or drill, baby, drill?

And my response is, both sound bites are rather nonsensical when we are talking about a comprehensive energy policy. But, yes, sloganeering is a part of what drives public debate.

What really has been lacking, I think, is developing how we use all of the energy tools in our energy toolbox, in the next 10 years, in the next 20 years, and beyond, and how we do the bridging in a way that makes economic sense. And so our little Subcommittee is trying to see how we can play a role in that larger overall effort.

As we know, these issues are being debated in the Congress right now. The Administration has a proposal that they have outlined. And we know that here, whether it is in the Southwest or in any other parts of America, that whether it is oil and gas—and gas, as we know, is one of the energies du jour of California because of our air quality issues, whether it is wind power, whether it is coal, whether it is geothermal, whether it is solar, that we have the most varied of energy options probably more than any other country does in the world. But where we are not doing well, in my view, is really trying to put this together.

This Subcommittee, obviously, focuses just as it relates to those issues on Federal lands. Let us be clear about this. We have no jurisdictional area over non-Federal lands.

So, the major question that we wanted to talk about this morning is not just as it relates to wind on Federal lands, but solar power on public lands, and trying to see how we use the vast potential that is demonstrated on this map, because solar power, depending upon the various models that are followed, can be very land-intensive.

Siting solar plants means that you limit the availability for multiple use, but I have heard of some very innovative ways that folks would like to deal with whether it is solar thermal or solar panels, and still allow for multiple use on those lands. We look forward to Mr. Abbott's and other's comments on their take on that.

Footprints, though, are significant as it relates to these utility scale solar panel plant efforts. And so when we talk about footprint, we are talking about the mitigation and some of the challenges we are dealing with.

In my view, and I know there is a proposal that Senator Feinstein has and others, and I will be interested in hearing people's thoughts on that, the last thing we want to do, in my opinion, the last thing is to lock up or prevent the ability to develop solar power on utility scale levels. I am one who thinks that you have to use all of the options.

And so I want to discuss how we pursue solar power in ways that will ensure that we have this robust renewable portfolio that I think we want to develop over the next 20 years, again to achieve the longer term goals, to reduce our dependency on foreign sources of energy, and to create a much cleaner source.

So, we are going to take the time today to listen to all of those thoughts. Obviously, we are very interested in the Renewable Energy Transmission Initiative that our California witnesses will speak on. We are also interested in the collaboration with the Renewable Energy Transmission Initiative, referred to as RETI, with what is taking place with the energy zones that the Bureau of Land Management has also been working on, and the transmission. The transmission lines are a very critical part of all of this effort.

California, as we know, the Governor has indicated by the year 2020 would like to raise the standard of our renewable portfolio to 33 percent. So, we have to figure out what sort of thoughtful, creative ways we can reach those goals. I think the Federal Government can learn a great deal, as we look at what states are doing, best management practices.

Both Cynthia and I came from state legislatures. I tend to believe that state legislatures are the laboratories of democracy. A former Justice of the Supreme Court once said, "But when we look at large-scale projects that are available in the Mojave Desert, and throughout our southwestern arid areas, the resource is too great and the needs are too large to not do a good job in looking at all of the efforts we can to pursue it." Obviously, we don't want a land rush, but we do want to make sure that we do our due diligence and that we have a process that makes sense in which everyone can participate.

So, I am looking forward to the collaborative discussion in developing this effort. I am looking forward to listening to my colleagues. And I would now like to recognize the Ranking Member

this morning, Ms. Cynthia Lummis from Wyoming, for her opening statement.

Again, thank you for taking the time to be here this morning.

[The prepared statement of Mr. Costa follows:]

Statement of The Honorable Jim Costa, Chairman, Subcommittee on Energy and Mineral Resources

I would like to welcome everyone to the Energy and Mineral Resources Subcommittee field hearing on solar energy development on federal lands. I would particularly like to thank Congresswoman Mary Bono Mack for being here and for being an extremely gracious host to her district, and also for the tremendous help that she and her staff have been in helping us put this hearing together. I would also like to thank our Ranking Member today, Ms. Cynthia Lummis, for taking this slight detour from her normal Wyoming to Washington, D.C. commute, and our hosts here at the University of California Riverside Palm Desert Campus, who have been extremely helpful and accommodating for this hearing.

I am particularly pleased to be holding this hearing in Palm Desert, which is an ideal location for a solar hearing for a couple of reasons. First, we are in one of the sunniest places on Earth, with close to 360 days of sunshine each year. Second, Palm Desert has been a leader in aggressively pursuing solar energy development, thanks in large part to the leadership of councilman and former-mayor Ferguson, who is with us today. Palm Desert has really picked up and run with A.B. 811, the recent California law that allows municipalities to provide loans to help homeowners install solar panels on their roofs, and they have also attempted to start a feed-in tariff pilot program here to make rooftop solar even more attractive. I think a great example of the job that Palm Desert is doing on energy is the fact that they were featured in a Wall Street Journal section on energy conservation last year alongside such cities as Chicago, London, and Amsterdam. So being here really could not be more fitting.

Energy conservation and rooftop solar panels are certainly two of the essential tools in our energy toolbox that should be included in a comprehensive energy policy. Some of the largest and most useful resources are to be found on our public lands. Whether it is oil and gas, wind power, coal, geothermal, or solar, our public lands contain some of the best and most varied energy resources anywhere in the world. As the subcommittee responsible for crafting policy for the development of these energy resources, we have to tackle the difficult questions about how much is appropriate, and where.

The question of where, of course, is one of the major challenges facing solar power on public lands. Solar power is very land-intensive, and siting a solar plant means that most if not all of the other uses of that land are precluded. This is quite different from windmills or even oil and gas rigs, whose footprints are mere pinpoints compared to that of a solar plant. However, this does not mean that we should not develop solar power on federal lands. Far from it. Solar power is essential for meeting our renewable energy, clean energy, and domestic energy security goals. But it also means we need to take extra care to make sure we are doing it right. We need to have all stakeholders in the process working together to build consensus about the best ways to put solar plants on the ground and get the power to where it is needed.

Our own state of California has been a leader in this effort with the Renewable Energy Transmission Initiative, or RETI. California has a very strong renewable portfolio standard—33% by 2020—and the RETI initiative has taken a thoughtful and detailed look at where the solar and wind plants and transmission lines that will be needed to meet that goal can be sited with the least impacts and the least conflicts, and I look forward to hearing more about that today from some of the people who are intimately involved in that process. I believe that the federal government can often learn much from looking at what the states are doing, and this is one example that I believe we should be paying close attention to.

We cannot exclude large-scale solar in the Mojave Desert. The resource is too great and the needs are too large to not expeditiously move forward. But we do not want a land rush, and we do not want a process that we will regret in the coming decades. This hearing is just one step along what I hope will be a very cooperative and collaborative road towards achieving consensus. I thank all the witnesses and our audience for being here today, and I look forward to working with all of you on this issue in the near future.

I now recognize the Ranking Member, Ms. Cynthia Lummis of Wyoming, for her opening statement.

STATEMENT OF THE HON. CYNTHIA LUMMIS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WYOMING

Ms. LUMMIS. Thank you, Mr. Chairman. My name is Cynthia Lummis. I am the representative from Wyoming. Greetings from the smallest population state in the Nation to the largest population state in the Nation.

What we do have in common is a vast array of extraordinarily impressive public lands, and my State of Wyoming is almost half public lands. From those public lands we produce coal, oil, gas, wind, a little bit of solar, which I am so excited to learn more about today, because you are so far ahead of us in that regard, and also biomass in the terms of cellulosic ethanol.

So, we have an all-of-the-above approach to energy in Wyoming. What we are working on is how to sequester carbon from coal, how to improve the recovery of resources from public lands to more efficiently serve the people of this nation, and to do it in a way that exemplifies good stewardship of public resources.

My reason for being so pleased to attend this meeting today is because California is ahead of some states in the Nation with regard to its understanding of the capabilities of solar energy and the substantial progress that is being made in evolving that technology to something that is way more efficient and more valuable to throw into the mix of energy resources.

I also want to thank, in addition to our Chairman, your Member of Congress from this District, Representative Mary Bono Mack, who is also tremendously engaged in the issues that we are discussing today. As a member of the very important Energy and Commerce Committee of Congress, she serves on subcommittees on energy, environment, and telecommunications, all of which are not only pivotal to you but pivotal to this discussion in particular.

So, her willingness to host this hearing in your wonderful District, and display the innovations that are occurring on public lands or private lands here in Southern California, is really wonderful for those of us from other parts of the country to see. So, thank you, Congresswoman Bono Mack, for your kind attention to this subject, and to your constituents here in Southern California.

So, the main purpose of our being here today is to look at the consensus that Chairman Costa described, so we can support plans that are appropriate for the development, through multiple use activities, of solar resources. According to the Energy Information Administration, at the end of 2007, seven percent of our nation's energy needs were generated from renewable and alternative sources of energy.

Of these resources, most is used for electrical power generation. Solar energy provided two-tenths of one percent of that electrical power generation and lags significantly behind wind energy, which provided about seven percent of the electricity in the renewable mix. Hopefully, with the completion of a solar energy programmatic EIS, we will see additional solar energy projects coming online in the near future.

I believe for the United States to improve both its economic and national security we will have to develop more of our own resources—renewable resources, such as wind and solar, which we are here to discuss today, and which you so proudly exemplify, and

other renewable resources, such as hydropower, geothermal, biomass, and nuclear.

We must also recognize that we need to use fossil fuels well into the future. Whether we like it or not, we and the rest of the world are highly dependent on these fuel resources, and they are wholly integrated in our society. Of course, natural gas is the cleanest burning of all the hydrocarbons that we use, and my State of Wyoming produces a large amount of the natural gas in this country. And we are the largest coal producer in this country.

Coal provides about 50 percent of the nation's electrical power generation. So, it is going to take some time either to get to the point where we can integrate other resources into the electrical mix, or to advance clean coal technology to the point where we can continue to use that resource, so it does not become a stranded asset. But, nevertheless, it is not a drag on our efforts to clean up our air.

If solar and wind and other renewable fuels are going to displace the need for fossil fuels now and in the future, we are going to have to get down to the business of getting these facilities sited and built, and that will be part of our discussion today.

Yesterday was a wonderful day for Mother's Day. I woke up in Jackson, Wyoming, where we had snow on the ground, and it was a magnificent, crisp, beautiful, fabulous day. Took off at the base of the Tetons and flew to Salt Lake City. When I boarded a plane to Palm Springs, the pilot, you know, who usually gives you this nice weather report about your destination said, "Clear skies and 102 degrees." And I thought, "I didn't hear that right."

[Laughter.]

But indeed I did, and I spent a lovely afternoon out at Twentynine Palms with the staff members you see here today, and Chairman Costa, touring the Marine Corps base there via helicopter, and seeing the wonderful advances they are making in renewable resources—geothermal, particularly solar, and wind as well.

We had an opportunity to see some of the solar that they are adding to the platforms that shield their mechanics from the sun as they are working on machinery. We saw actual photovoltaic units that are advancing that base's ability to become more dependent on renewable sources of energy. We saw a 240-acre lake bed that is going to be used eventually for solar panels that will make that base the most sustainable and renewable fuels advanced base in the military. It was truly impressive.

In addition, I had a chance to see with Chairman Costa the simulated Iraqi villages that are in the desert there that prove to be very accurate training grounds for our troops as they are about to enter combat, or situations in Iraq and in communities that allow them to avoid combat, because of their understanding of the cultures or the communities in which they are involving themselves on the Iraqi and Afghani landscapes.

So, it was an absolutely instructive, marvelous, diverse, unique Mother's Day. And, further, we enjoyed last evening some of your wonderful Southern California hospitality, and I want to thank the people of Southern California, my Chairman, Jim Costa, and our host, Member of Congress Congresswoman Mary Bono Mack for

their extraordinary hospitality, the great education they are providing to me, and that we will share with our fellow Members of Congress.

So, thank you so much, Mr. Chairman.

Mr. COSTA. Thank you very much, Congresswoman Lummis, for your participation. And I think you did a good description of yesterday's tour of Twentynine Palms and the innovative efforts that the Marines, as other branches of our service, are attempting to ensure that we do our best to have good energy practices.

Our hostess this morning, you have not only done a great job with your staff and everything else, but you got all of your friends and relatives to come, too.

[Laughter.]

We like the turnout here. Thank you very much, Mary. And I was thinking about the first time that you and I met, I was the Chairman of the State Senate Agriculture and Water Committee, and we held a hearing here, and you participated in that hearing. And that was the first time that we got to chat. So, we obviously work together in the House, but it is nice to be back and holding a hearing again in your District.

Your Congresswoman, Mary Bono Mack.

STATEMENT OF THE HON. MARY BONO MACK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mrs. BONO MACK. I thank the Chairman very, very much for being here today, and the Ranking Member as well for your kind words, and welcome to probably the best Congressional District in the entire United States.

[Laughter.]

Yes.

[Applause.]

Although I do love Jackson Hole, it is definitely God's country, it is beautiful, I have spent many, many days hiking and camping and backpacking up in that area, so I welcome you to the 103-degree weather. And I usually—now you know what I face every week when I fly back and forth to Washington, D.C., where it is 30 degrees there, and usually it is about 85 degrees here and perfect. So, trust me, it is something I do quite often.

And to the Chairman, usually now we see each other weekly on the flight. We usually meet up in Denver. That is sort of our halfway point to Washington, D.C., on our weekly trek. So, it is much better to see you here in my District and working hard, and I thank you and your staff for holding this.

And I just want to say one thing I regret is there are not typical C-SPAN cameras showing the faces of the witnesses as they deliver their testimony. But I really thank all of you for being here today, and I hold this Congressional District really as a high example of how to do environmental policy, because we are consensus-builders. We sit down and talk to each other about issues, and we really try to form answers and work together.

And I can point to many examples I think in my written remarks, from the prepared remarks. I will point to those examples on how we work together quite successfully.

But I, again, want to thank the staff for your hard work, and my staff, Chris Foster, who is over here, for his hard work as well.

So, the Chairman mentioned we have 360 days of sunshine here. It is actually about, I don't know, 350. Those days that it rains, generally speaking, we hold a film festival.

[Laughter.]

And if you want to end a drought, you just have to throw a film festival, and it rains and it pours on those few days. So anyway, in fact, we do have about 350 days of sunshine here, making this area a natural fit for utilizing solar energy as a clean, renewable energy source.

It is my hope that today's hearing can start us down a path toward finding a thoughtful approach to increasing solar energy development. There are a few fundamental components that can guide our thinking and approach, but we all know that in order to decrease our carbon emissions and meet the current 33 percent state renewable electricity standard, and a potential Federal RES, we need to move forward and to tackle the hurdles in front of us.

First off, it is important that when considering large solar commercial installations we keep in mind the unique lands around us. I am sure, Chairman Costa, in the short time you have been here, you have seen just how beautiful our ecosystem is here in Riverside County.

It is these surroundings that bring so many tourists to our area and the reason so many families have chosen to call the desert home. Finding a balance between moving forward in the near term with solar energy development and protecting our local environment is really why we have to bring all sides to the table and work out how best to move forward.

I know we can do it here in this area, as I have said, and there are already a few local examples that really show how a collaborative approach like that can achieve great results. That is why we now have the newly created wilderness lands in the county, the multi-species habitat conservation plan, and, of course, Santa Rosa and San Jacinto Mountains National Monument.

I have truly enjoyed working with numerous local constituencies, many of those who are here today, on these efforts ever since coming to Congress. We have to keep in mind the larger goal of reducing our dependence on foreign oil and using more renewable energy as part of the way to get there when we hear from today's witnesses.

Currently, in Washington and at the Energy and Commerce Committee, we are in the middle of crafting a massive effort to regulate and cap carbon emissions. Today's hearing will hopefully begin to address both the challenges of siting large solar projects but also how we move this energy, as these issue are clearly intertwined. I strongly believe we need to increase the efficiencies of our transmission infrastructure.

Thank you.

You guys should have said, "We can't hear you." Do you want me to start over?

[Laughter.]

I strongly believe we need to increase the efficiencies of our transmission infrastructure while also pushing for ways to improve

transmission for more rural areas where renewable energy potential is greatest to the areas that will use the resource. Whether it be moving the energy or siting a renewable energy project, I think it is also crucial for our businesses and financing community to have certainty.

We all know with the conditions of the credit markets over the last six months that clear direction from Federal policy is going to be vital. Right now, we have various laudable efforts, be it the State's RETI initiative, the partnership between the U.S. DOE and the Western Governors' Association, pushing for western renewable energy zones, and multiple pieces of Federal legislation, but what we should seek in the end is a harmonized approach that aggressively brings online new renewable energy sources.

The House and the Senate both are working on legislation that would accelerate the construction of new transmission through providing new authorities to the FERC. And I am hopeful we hear more about how to address this energy disconnect in a thoughtful manner.

With that, I would like to welcome our witnesses today and thank them for coming. I really look forward to your testimony, and I definitely want to welcome my local City Councilman, Jim Ferguson, who is truly a pioneer and a leader in all of these initiatives. And, Commissioner Chong, it is nice to see you again. We visited in my office not too long ago. And Mr. Rabbit as well. We all had the chance to visit, and I am especially pleased that you are here today.

And I thank the entire distinguished panel for being here today.

So, again, thank you, Mr. Chairman. Again, I serve on the Energy and Commerce Committee, which probably is a bit confusing to my constituents in the audience. We don't always share a jurisdiction, but the goals are the same, and I look very much forward to working with you on all of these issues as we move forward.

Again, I thank you for allowing me to be a part of your panel, since I am sort of an interloper from a different Committee. So, thank you very, very much.

Thank you all for being here.

[The prepared statement of Mrs. Bono Mack follows:]

Statement of The Honorable Mary Bono Mack, a Representative in Congress from the State of California

Chairman Costa and Congresswoman Lummis, let me first welcome you both and the Subcommittee on Energy and Mineral Resources to California's Coachella Valley. I hope you've taken some time to enjoy the area and take in the sun. You're right in one of the sunniest parts of our country, and it's the perfect setting for today's field hearing.

In fact, we have around 350 days of sunshine here, making the area a natural fit for utilizing solar energy as a clean, renewable energy source. It is my hope that today's hearing can start us down a path toward finding a thoughtful approach to increasing solar energy development.

There are a few fundamental components that can guide our thinking and approach, but we all know that in order to decrease our carbon emissions and meet the current 33% State Renewable Electricity Standard and a potential Federal RES, we need to move forward and tackle the hurdles in front of us. First off, it's important to me that when considering large solar commercial installations we keep in mind the unique lands around us. I'm sure, Chairman Costa, in the short time you've been here, you've seen just how beautiful the ecosystem is that surrounds us in Riverside County.

It's these surroundings that bring so many tourists to our area and the reason so many families have chosen to call the desert home in the last 20 years.

Finding the balance between moving forward in the near term with solar energy development and protecting our local environment is really why I think we have to bring all sides to the table to work out how best to progress. I know we can do it here in this area, though, and there are already a few local examples that really show how a collaborative approach like that can achieve great results. That's why we now have newly-created wilderness lands in the County, the Multi-Species Habitat Conservation Plan, and, of course, the Santa Rosa San Jacinto Mountains National Monument. I've truly enjoyed working with numerous local constituencies on these efforts since coming to Congress.

We have to keep in mind the larger goal of reducing our dependence on foreign oil and using more renewable energy as part of the way to get there when we hear from today's witnesses. Right now, at the Energy and Commerce Committee we're in the middle of crafting a massive effort to regulate and cap carbon emissions. Today's hearing will hopefully begin to address both the challenges of siting large solar projects but also how we move this energy, as these issues are clearly intertwined. I strongly believe we need to increase the efficiencies of our transmission infrastructure while also pushing for ways to improve transmission from more rural areas where renewable energy potential is greatest to the areas that will use the resource.

Whether it be moving the energy or siting a renewable energy project, I think it's also crucial for our business and financing community to have certainty. We all know with the conditions of the credit markets over the last 6 months that clear direction from federal policy is going to be vital. Right now we have various laudable efforts, be it the State's Renewable Energy Technology or the "RETI" initiative, the partnership between the U.S. Department of Energy and the Western Governors' Association pushing for Western Renewable Energy Zones, and multiple pieces of Federal legislation. But what we should seek in the end is a harmonized approach that aggressively brings online new renewable energy sources.

The House and Senate both are working on legislation that would accelerate the construction of new transmission through providing new authorities to the FERC, and I'm hopeful we hear more about how to address this energy disconnect in a thoughtful manner.

With that, I'd like to welcome our witnesses and thank them for coming today, as I really look forward to their testimony. In particular, it's great to see Councilman Jim Ferguson here to testify, as so often these issues of national scope are really very local in nature.

Thank you Mr. Chairman, and I yield back the balance of my time.

Mr. COSTA. Your presence and participation is always welcomed, and we thank you again.

Since you were kind enough to actually acknowledge your staff, I would be remiss. But we have Kathy Benedetto who I have worked with over the years with the Minority staff, we have Steve Feldgus, who is the person who has done a great deal of the work to put this hearing together, and we thank you, Steve, for your hard work. And then, Marcie Cooperman, who is back there, who is trying to make sure that the mics work and that everybody comes on time and leaves on time, and all that good stuff. So, I thank all three of you for your good work.

Let us begin with the reason that we are here. You didn't come here to hear us expound on necessarily our own thoughts, but to hear thoughtful testimony from the two panels this morning, and to allow us an opportunity to have an exchange and ask questions and make comments.

So, without further ado, we have our first panel, and we have The Honorable Jim Ferguson, Councilman from Palm Desert. We have Commissioner Julia Levin from the California Energy Commission. I remember when that was created. I date back when Governor Brown was there, and my friend, Chuck Imbrecht, used to chair it, and appreciate the good work.

A lot of the energy standards for residential and commercial development took place as a result of the California Energy Commission, which has made itself felt—not only around the country but around the world.

Commissioner Rachelle Chong from the California Public Utilities Commission. The California Public Utilities Commission does a wonderful job, and please give my friend, Mike Peavey, my regards. I am sorry he couldn't be here.

And James Abbott, the Acting State Director for the Bureau of Land Management, from the California office as I understand. And then, our fifth witness is Mr. Thomas Kretzschmar—did I pronounce that properly? Kretzschmar. Who is the Senior Projects Manager for the United States Army Corps of Engineers. So, we look forward to that.

I mention to the first panel, and the second panel should also take this to heart, for the witnesses the Federal way in which we do these hearings, we have these little boxes here, and there is a light. And while the written statements that all of our witnesses can provide can be as voluminous as you choose to make them, for the purpose of the hearing we would like to keep your comments to five minutes.

So, for the first four minutes the light is green, and then on the fifth minute it turns yellow. And then, when it turns red, your seat collapses.

[Laughter.]

No, that is not true. But I provide a little leeway there, but we do obviously want to be mindful of everyone's time, so that we can get to the best part which is the question and answer portion.

So, with that understood, it says here on my agenda that Mr. Ferguson, Councilmember, you are up first. So, why don't you begin with your testimony, please.

STATEMENT OF THE HONORABLE JIM FERGUSON, COUNCILMAN, CITY OF PALM DESERT, CALIFORNIA

Mr. FERGUSON. Thank you, Mr. Chairman, and members of the Subcommittee. I want to start by applauding you for your recognition of not only Palm Desert's but California's conservation efforts. I truly believe the first line in our national, if not state, energy policy is conservation at home. And that conservation I think must be a necessary precedent to development of solar energy on Federal lands, and I will explain that to you in somewhat greater detail.

For the past 13 years I have been a Councilman in the City of Palm Desert, having served twice as its mayor. I am also Chairman of the Coachella Valley Mountains Conservancy, a state agency of California having land holdings within the Santa Rosa and San Jacinto Mountains National Monument. As we sit here today, we are located in the center of the Coachella Valley, a region made up of nine cities, four Native American tribes, the County of Riverside. We number approximately one-half million people and represent one of the hottest per capita areas in the United States.

We guard the uniqueness of our value zealously. For example, we recently enacted one of the most forward-reaching habitat conservation plans in the country, reflecting our high priority on the preservation of the natural resources with which we have been

blessed. The Bureau of Land Management has committed to manage its lands within this protected area consistent with the plan as part of its Federal, state, and local partnership to conserve local ecosystems.

As is evidenced by the wind farms at the entrance to our valley, we also recognize the value of alternative forms of energy, particularly solar. We embrace solar technology in both residential and rural areas, and let me be clear about that distinction. Residential and rural areas. In order to fulfill environmental climate change and economic development goals, we need both of them.

In the residential sector, our support is in the form of distributed generation and energy conservation and efficiency. Working in a groundbreaking partnership with both our electric and natural gas service providers, Palm Desert has taken the lead and committed itself to a 30 percent reduction in its consumption of gas and electricity over the next five years. This includes the peak period of demand.

We are well on our way to that goal with about 100—or, excuse me, one-third of our savings already attained. This is achieved primarily through increased energy efficiency in residential rooftop solar systems supported by incentives and financed by the City for the homeowner at a reasonable rate of interest rate for both.

The City earns a fair rate of interest. The property owner immediately adds equity and energy savings to his residential investment, and our major utilities are better able to manage demand response during their peak periods.

This program started with the simple premise that it is less expensive to save energy than it is to buy out-of-state "dirty power" or permit new powerplants or power facilities in the State of California, which is almost an impossible task if you are from our State.

To put this in better perspective, if all of California could simply conserve 20 percent, two-thirds of Palm Desert's goal, 20 percent of its energy consumption through efficiency in solar at home it would be the energy equivalent of permitting 10 new nuclear power generating facilities. This is exactly what we can expect from the energy equivalency of drilling an Alaska Wildlife National Refuge, which is a much better option.

The Palm Desert Energy Independence Program has proven itself extraordinarily successful. It shows that more aggressive approaches to energy efficiency and renewable energy financing makes sense and can get us on a path to energy sustainability and security. We salute efficiency in renewable gains thus far, and call dramatically on increased activity.

When environmental, economic development, and national security values are factored into the cost-benefit equation, energy efficiency and renewable energy on all scales make tremendous sense. It is our energy future, and we support prompt response as soon as possible.

Let me be clear. We support commercial development of solar generation facilities in rural areas. We support President Obama's direction to develop renewable sources of energy on Federal lands, and Secretary Salazar's aggressive approach in addressing that directive. Frankly, I see no other way for us to meet the carbon diox-

ide mandates of the International Conference of Parties that crafted the Kyoto Protocol that was endorsed by the United Nations in Bali in 2007, and that will meet in Copenhagen later this year.

California has also a 33 percent, as mentioned earlier, renewable portfolio standard mandate that it must meet by 2020. At a time when solar energy only factors approximately one percent into our State's solar mix, it is highly unlikely that any of our utilities will meet their interim targets by 2010, just next year, without the aggressive expansion of solar energy on Federal lands.

Thank you very much.

[The prepared statement of Mr. Ferguson follows:]

Statement of Jim Ferguson, Palm Desert Councilman

Good Morning Chairman Costa and Members of the Subcommittee on Energy and Mineral Resources:

My name is Jim Ferguson and, for the past 13 years, I have been a Councilman in the City of Palm Desert—having served twice as its Mayor. I am also Chairman of the Coachella Valley Mountains Conservancy, a State agency of California having land holdings within the Santa Rosa and San Jacinto Mountains National Monument. As we sit here today, we are located in the center of the Coachella valley—a region made up of 9 cities, 4 Native American tribes and the County of Riverside. We number approximately 1/2 million residents and represent one of the hottest per capita places in America.

Collectively, we recently enacted one of the most forward reaching habitat conservation plans in the country reflecting our high priority on the preservation of the natural resources with which we have been blessed. The Bureau of Land Management has committed to manage its lands within this protected consistent with this Plan area as part of the federal, state and local partnership to conserve local ecosystems

Rather than solely focusing on large-scale solar developments on public and private lands, we enthusiastically embrace solar technology in both the residential and rural areas of our community. In order to fulfill energy, environmental, climate change and economic development goals, we need it all!

In the residential sector our support is in the form of distributed generation and energy conservation/efficiency. Working in a groundbreaking partnership both our electric and natural gas service utilities, Palm Desert has taken the lead and committed itself to a 30% in overall city-wide reduction in its electrical load over a five year period. And we are well on our way, with about 1/3 of our savings attained to date. This is achieved primarily through increased energy efficiency and residential rooftop solar systems—supported by incentives and financed by the City for the homeowner at a reasonable interest rate for both. The City earns a fair rate of interest, the property owner immediately adds equity and energy savings to his residential investment, and our major utilities are better able to manage demand response during peak periods.

This program started with the simple premise that it is less expensive to conserve energy off of our grid, than it was to buy out-of-state power or permit new power generating facilities in California. To put this into better perspective, if all of California could simply conserve 20% of its energy consumption through efficiency and solar at home, it would be the energy equivalent of having ten (10) new nuclear generating facilities, or twenty (20) new gas fired plants in this State. This is roughly the energy we could expect from drilling in the Alaska Wildlife National Refuge—and what a better option!

The "Palm Desert Energy Independence Program" has proven itself extraordinarily successful. It shows that more aggressive approaches to energy efficiency and renewable energy financing make sense and can get us on a path to energy sustainability and security. We salute efficiency and renewable gains thus far and call on dramatically increased activity. When environmental, economic development, and national security values are factored into the cost-benefit equation, energy efficiency and renewable energy—on all scales—makes tremendous sense. It is our energy future and we support prompt responsible action as soon as possible.

One of the most exciting opportunities to promote renewable power development is a so called "Feed-in-Tariff." The model has proven so successful in Europe, where Germany became the World leader in both solar energy and wind energy in a few years. It's time that America enacts a Federal feed-in-tariff program to reap similar

gains. The Federal Energy Regulatory Commission could direct each state to develop feed-in-tariff prices that give investors a reasonable and predictable return for twenty (20) years.

At the household level, the feed-in-tariff is quite simple. Homeowners are paid a fair price for their excess solar and other "green" generated capacity. Germany and Spain have both instituted aggressive models and Spain now expects to have 100 Giga watts of solar capacity (100 nuclear facilities) by 2020.

The point is, before we march off to disturb federal soils and disrupt their native habitat, there is much we can do through ever-more aggressive energy efficiency—throughout our society—and the deployment of safe, clean, renewable generation, distributed throughout our communities and close to its end use.

We also support commercial development of solar generation facilities in rural areas: however, that is not unqualified support. We appreciate President Obama's direction to develop renewable sources of energy on federal land and Secretary Salazar's aggressive approach in addressing that directive. Frankly, I see no other way for us to meet the carbon reduction mandates of the International Conference of Parties that crafted the Kyoto Protocol, that was endorsed by the United States in Bali in 2007 and that will meet in Bali, and that will meet in Copenhagen later this year without increased efficiency, renewable energy and particularly solar production. California has also set a 33% renewable portfolio standard mandate for 2020 at a time when solar energy only factors approximately 1% into our state's energy mix. It is highly unlikely any of our utilities will meet their interim target by 2010—just next year!

Since the turn of the last century, our Government has classified federal lands for various uses—predominantly conservation and preservation. Our new mandate for solar development should not be undertaken in a blanket, rushed approach. Unquestionably there are public lands which may be appropriate for solar development. These should be identified and cultivated. Similarly, there are lands which have previously been identified for cultural, biological and other purposes which must also be respected. In my opinion, the dual responsibility of cultivation of renewable resources and the preservation and conservation of cultural and biological resources is the main task before this Subcommittee. In that regard, I would like to share some of the thoughts of a consortium of environmental groups who have been working to develop a consensus approach to the issue.

I. INTRODUCTION

The California Desert is a unique and special environment, as recognized by the Federal Land Policy Management Act in establishing the California Desert Conservation Area. The vast landscape is home to diverse biological communities, cultural sites, scenic and wild places, and other valuable areas. The desert lands also sequester carbon in the fragile desert crust, providing an important benefit in the effort to reduce carbon emissions in our state. These lands also are attractive for renewable energy projects, and have fueled a rush by companies to file applications on public lands for potential projects. The need to find alternatives to carbon based energy is great. In California, we are moving forward to meet a Renewable Portfolio Standard of 33% by 2020, a goal which is widely supported as necessary to address climate change.

We appreciate Subcommittee's leadership on the dual issues of natural resource conservation and renewable energy development in the California Desert and we are committed to working with her and all stakeholders to develop solutions.

We support providing legislative protection for both the Catellus lands acquired for conservation purposes and other park and wilderness quality lands that have been identified throughout the California Deserts. We also believe that protection of these lands is a continuation of, and builds upon, the conservation work begun many years ago in the California Deserts.

The protection of the Catellus lands and other wilderness and conservation lands should not be considered as mitigation for allowing for the development of renewable energy on other public lands in the California desert. Working to responsibly site renewable energy is not a quid pro quo for the protection of other lands. The siting of renewable energy projects in the California desert needs to be addressed separately from any conservation lands proposal.

As detailed below, we believe that the siting of renewable energy projects in the California Desert can be done in a way that can benefit local communities while reducing the level of impact to the fragile desert ecosystems. For example, new renewable energy projects should not fuel sprawl, but should be clustered in appropriate locations, reducing the carbon footprint. And, we must ensure that future siting of renewable energy projects is conducted in a way that protects resilient habitat, which will provide room for species to adapt to climate change.

This memo sets forth a two-phased approach that addresses short-term needs with a process to identify pilot project areas and expedite siting in those areas, and also provides for a long-term plan to ensure sustainability of the desert environment. This memo also includes recommendations on how to incentivize development of renewable energy projects on private lands so that public lands do not bear the entire burden of renewable energy generation. Finally, this memo details a mapping process undertaken by the NGOs to produce a map of areas (public and private) identified as having a high potential for suitable solar energy development. To be clear, however, this map is not a definitive representation of what are considered thoroughly vetted development zones and does not address wind energy siting, biomass or geothermal. Instead, this map is an illustration of what could result from the recommended short-term, pilot project area process.

II. TWO-PHASED PLANNING APPROACH

There are a large number of renewable energy projects proposed in the California Desert that potentially threaten the very lands that many, including Senator Feinstein, have worked hard to protect. The Bureau of Land Management (BLM) right of way process for evaluating these projects is not working—it is very time consuming and is not well suited to the task. Staffing shortages at BLM and other permitting agencies create additional problems.

In order to meet our pressing need for clean energy in an environmentally responsible manner, we recommend that the siting of solar renewable energy projects in California take place in a two-phased process. The first phase would addresses short-term needs to bring solar renewable power online to meet California's RPS goals, and the second phase would consist of a longer-term, comprehensive desert planning process. Both initiatives must move forward simultaneously.

A. Phase One: Expedite progress by avoiding conflict.

Pilot Project Areas

We recommend an accelerated short-term exercise to designate a limited number of "pilot project areas" without undermining existing environmental laws. This effort should evaluate public and private lands to identify areas appropriate for development and screen out lands that are inappropriate for development. Please see Attachment 1 for a list of criteria for lands that are suitable and unsuitable for development and Attachment 3 for the preliminary map.

To initiate this phase, we recommend that state and federal agencies work with stakeholders to identify pilot project areas sufficient to produce enough MW to meet half of the net short as defined by the California Energy Commission. This number should be calculated in conjunction with energy conservation, energy efficiency, projects on private lands, and distributed generation efforts.

The BLM must focus its resources on project applications within the pilot project areas. While the BLM is currently utilizing the tool of "right of way" applications, we do not believe that this administrative tool is suitable for solar renewable energy projects particularly because such projects completely destroy habitat values on site. The BLM must be able to use its authority to deny project applications in the pilot project areas (as they do elsewhere) if the project impacts are deemed significant and un-mitigable. The pilot project areas should be considered as feasible alternative sites for project applications currently in the environmental review process.

Pilot projects can test or identify a number of important components of solar renewable energy siting, development and operations where more research and/or information is needed including:

- Ways to create a "race to the top" for generators in terms of environmental performance.
  - Attachment 2 provides additional conditions that can be placed on renewable project applications to encourage more environmentally responsible project proposals
- Environmental impacts of different and emerging energy production technologies
  - Impacts will vary project to project.
  - Pilot projects should be used to establish BMPs for compiling conservation baseline prior to initiation of development.
- Technology-specific on site mitigation measures for different solar technologies.
  - Environmental impacts will vary from technology to technology
- Technology-specific BMPs for operations (e.g., methods to minimize water use for cleaning, wastewater disposal/reclamation practices, ways to ensure wildlife movement corridors, measures to minimize adverse hydrological impacts both on- and off-site and appropriate types of fencing, etc).
- Robustness of, and gaps in, land use criteria

- Federal, state and local agency needs for additional staff and decision support tools to enable their participation in a cooperative siting process for additional renewable energy development.
- Ability of BLM and state agencies to work together across land ownerships
- Ways to expedite permitting, such as coordinated, simultaneous, multi-agency environmental review.
- Clustering development sites to minimize transmission/interconnection needs.
- Presumed environmental benefits of clustering near existing infrastructure (e.g., waste water capture and reuse, adjacency to existing developments, support of local economies "green jobs", shared workplace transit for energy facility workers).
- Measures of the disturbance that results from solar development, including the change of vegetation and change of species found at and in the vicinity of the site.
- Methods for scaling up the research and analysis to measure the physical and biological changes at the ecosystem-level as a result of development. For example, studies should measure soil disturbance and its relationship to air quality in the deserts. Ecosystem scale analysis could also be particularly important for species that have a large range (e.g., bighorn sheep).

Mitigation

Impacts to resources in pilot project areas should be fully mitigated to satisfy both federal and state requirements.

Disturbed Lands in Pilot Projects (please see Attachment 1, Section A for definition)

Disturbed lands should be prioritized for inclusion in pilot project areas. It is anticipated that mechanically disturbed lands support minimal or reduced sensitive biological, archaeological, paleontological and hydrological resources, due to the high level of disturbance they have experienced. Therefore, by design, it is unlikely that sensitive resources would be encountered on site. However, compliance with all applicable environmental laws will be necessary.

We suggest the following measures to help expedite the process for solar plants on Disturbed Pilot Project Lands:

- A rapid assessment to determine whether sensitive species are present despite the disturbance;
- A maximum of a single season of appropriately timed surveys will be required; or
- If sensitive species are presumed or detected onsite, mitigation will be required, preferably using predetermined habitat acquisition and mitigation ratios which may also include an option of a fixed percent of mitigation through appropriately scaled payments into an established mitigation bank (if available) or other fund to pool resources for large-scale conservation land acquisition or mitigation projects such as tortoise fencing along major roads and bighorn sheep corridors/overpasses.

Undisturbed Pilot Project Lands

Before undisturbed lands are included in pilot projects, they must be evaluated in order to establish that they have low resource conflicts potential despite the fact that they are undisturbed (i.e., lands which support a high level of ecological functioning). Undisturbed areas that are adjacent to existing mechanically disturbed lands should be favored over areas that are not.

It is anticipated that undisturbed lands in pilot project areas will support reduced or minimal sensitive biological, archaeological, paleontological, visual and hydrological resources, based on the best current available resource information and their adjacency to disturbed lands. While it is possible that sensitive resources could be encountered on site, these sites will experience a conversion from natural function ecosystems to industrialization, and therefore all environmental laws are applicable.

Key issues to be addressed in mitigation for projects on undisturbed Pilot Project lands include:

- A minimum of a single season of appropriately timed surveys will be required;
- If no sensitive or rare resources are encountered, impacts to these lands will be mitigated at a [specified] ratio, as appropriate; for federally protected species including but not limited to the desert tortoise, clearance surveys must be still be done;
- If surveys encounter sensitive or rare resources, additional surveys may be required in order to accurately characterize those resources. Based on the type of resources encountered, appropriate mitigations for sensitive resources on these

undisturbed lands would be developed in coordination with local, State and federal agencies.

Mitigation Measures

Mitigation measures for solar projects on undisturbed lands in the Pilot Project Areas should include:

- Acquisition of private lands that provide replacement habitat ("compensation lands")
- Enhanced conservation management of specified public lands:
  - For example, mitigation mechanisms identified in the CDCA Plan as amended including construction and maintenance of fencing near roads, buy outs of permits on grazing allotments relegation of closed routes, etc.
- Enhancement of compensation lands.
  - Similar to enhancement of management of public lands the mitigation for private conservation lands could include funding fencing of the acquired lands or needed restoration.
- Managing compensation lands as conservation lands in the CDCA.
  - Any compensation lands transferred to BLM shall be permanently segregated or withdrawn from use under the mining and land laws.

Development of mitigation packages will be done in coordination with state, federal and local resource agencies.

B. Interim Guidance

The BLM must provide interim guidance for prioritizing project applications while the long term planning process is underway. The BLM should issue an Instruction Memorandum that details the criteria to be used to establish priorities for processing applications. These criteria must be designed to identify those applications which minimize both harm to the natural values of undisturbed public lands and the likelihood of controversy with the public and local communities. Such criteria must include:

- Avoiding lands with conservation values (see Attachment 1, Section B)
- Prioritizing degraded lands and lands adjacent to degraded lands (see Attachment 1, Section B)
- Proximity to load centers
- Proximity to existing population centers including workforce housing
- Proximity to existing transmission and infrastructure;
- Availability of sufficient water without causing significant impacts to conservation values (primarily for cleaning—no "wet cooled" projects in the desert unless the water used is reclaimed water from close by municipalities.);
- Demonstrated secure funding;
- Additional "points" for prioritizing projects for those that make commitments to reduce demand through energy efficiency projects in population centers or create positive local benefits through distributed generation projects

C. Phase Two: Develop comprehensive, strategic, management plan for all types of renewable energy development that protects desert resources and secures long term protection of biologically important areas.

The long-term phase of the process should include direction to the BLM to engage in a landscape level analysis for siting of all types of renewable energy development in the California Desert. This process should be coordinated with state and local agencies across the region in order to develop a comprehensive plan that addresses private as well as public lands. The plan should also establish requirements for enhanced management that will ensure long term conservation of desert biodiversity.

Desert Blueprint

A comprehensive, strategic planning process for renewable energy development in the desert is needed to address the multiple land uses and values in the desert, including conservation, recreation, tourism, cultural sites, military testing and training, local economic development, and transportation infrastructure, as well as renewable energy. Federal and state agencies must work together in a transparent public process to develop a common "blueprint" for the desert. This "blueprint" should include well-defined, measurable standards, developed via public involvement processes (e.g., habitat condition and/or population-level objectives). It should also employ science-based analytical tools to evaluate compliance with the standards (e.g., population viability assessment). It should also provide consistent implementation of science-based analysis and decision-making (i.e., dedicated funding for monitoring and science-based adaptive management processes).

The "blueprint" should reflect the best science available and specifically assess:

- Direct and indirect cumulative impacts
- Rare, sensitive, threatened and endangered species and wildlife corridor needs
- Climate change adaptation needs
- Carbon sequestration value of intact habitat
- Ecological process needs
- Ecological thresholds /limits for development
- Maintenance of hydrology in these arid environments

California's Natural Community Conservation Plan (NCCP) coupled with the federal Habitat Conservation Plan (HCP) process may be able to provide an appropriate framework for this coordination, but federal legislative language would be required to ensure federal agencies' engagement. The strategic planning process must also provide meaningful opportunities for public participation by a broad array of stakeholders.

Renewable Energy Development Zones

A primary goal of the comprehensive planning process will be to guide development of renewable energy projects to appropriate areas to provide certainty, minimize conflicts, and facilitate environmentally responsible siting. Directing development towards appropriate areas must include the following steps:

- Identification of the MW contribution expected to be generated by the lands covered by the plan in conjunction with contributions from other renewable energy sources (e.g., energy conservation, energy efficient, distributed generation, and renewable energy from other parts of the state).
- Designation of federal renewable energy zones for renewable development (please see Attachment 1 for land use criteria)
  - Lessons learned from pilot projects should inform the designation of additional renewable energy zones
- Rating of designated areas based on greatest energy resource value and least environmental conflict and phasing of development accordingly
- Requiring existing and new applicants to locate projects in identified renewable energy zones in appropriate phases

The BLM should establish a competitive application process going forward that is designed to encourage a "race to the top" among generators. This process would provide incentives for generators to put forward the most environmentally responsible project proposals, both in terms of siting and project impacts on the ground. Lessons learned from the pilot project areas should also inform the processing of applications. Among other strategies, technology-specific BMPs for solar development will set high performance standards for developers. (Please see Attachment 2 for a list of additional conditions that could be placed on renewable energy applications to create a more competitive application process).

Strategic Desert Conservation

Long term protection of biologically important lands is a critical component of the long term planning process. The blueprint process must:

- Identify specific public lands with high resource values that require additional conservation designations (outside of the mitigation process).
- Identify additional lands for acquisition by public agencies.

Mitigation

All impacts of renewable energy projects must be fully mitigated. The blueprint effort can be a framework for developing a strategic mitigation process which generates more robust and effective mitigation over the long term than can be achieved on a project by project basis.

Strategic long-term mitigation planning must address the following:

- Incorporation of biodiversity sustainability/viability indicators
- Long term stewardship and funding of stewardship of mitigation lands
- Mechanisms for ensuring conservation is prioritized on public lands
- Opportunities for pooling mitigation funds for larger scale land acquisitions of properties identified in the desert blueprint process and managing those compensation lands for the benefit of the lost and impacted resources.
- Expanding legal requirements for mitigation as impacts of renewable energy projects are documented.

III. INCENTIVES FOR PRIVATE LAND DEVELOPMENT FOR RENEWABLE ENERGY PROJECTS

A. Identify funding and/or incentives for land aggregation:

- Federal zero-interest loans for aggregators of private lands for solar energy development (with sidebars to exclude speculators).

- Capital gains tax exemptions for those purchasing private land for solar energy development.
- Subsidies (such as partial or full closing costs).
- State and federal tax breaks (capital gains, tax credits etc.).

B. Create mechanisms to reward generators for locating on disturbed areas:

- Federal zero-interest loans for solar energy infrastructure development on private lands (with sidebars).
- Capital gains tax exemptions for developers on private lands.
- State and federal tax breaks (capital gains, tax credits etc.).
- Regulatory advantages (such as expedited review and interconnection preferences at the state and federal level).
- Simplifying and minimizing mitigation for development on disturbed land
- Accelerated environmental review of solar facilities on disturbed private lands. For example, there could be local incentives for accelerating local permitting.
- Accelerated depreciation of solar infrastructure on private lands.

C. Foster community benefits by siting on private lands:

Create federal redevelopment or enterprise zones (e.g., Imperial County's Economic Development Corporation, http://www.ivedc.com/?pid=2). Or, create a state economic development zone or a county Energy Element to a General Plan or a redevelopment area.

Provide payments in lieu of taxes or revenue sharing for local governments to compensate for lost tax revenues due to lower solar assessments.

Create state and federal tax breaks (capital gains, tax credits etc.) for landowners who develop their lands with renewable energy projects.

Provide federal financing modeled after AB 811 (http://www.ab811.org/).

For landowners, make them eligible for a portion of the Investment Tax Credit that currently goes to producers.

For landowners, tax the rental profits at a lower rate than regular income if the profits are from solar producers using the land.

D. What are the attributes to qualify for a solar energy zone?

- Adequate insolation (average hours of sunlight); if a value is used, it should be set to include such areas as west San Joaquin Valley.
- Proximity to transmission.
- Degraded biological, scenic and cultural values, especially previously graded lands, fragmented land, or land exposed to edge effects, etc.
- Avoidance of "core" natural areas.
- Avoid incentivizing small isolated solar farms in relatively pristine natural areas

III. Overview of Mapping of potential Pilot Project Areas For Renewable Energy Development in the California Deserts

In response to Senator Feinstein's request to identify public lands that are appropriate for renewable energy development, we have used the criteria, set forth in this memorandum, to identify potential areas for renewable energy pilot projects. This mapping exercise clearly demonstrates the potential availability of acreage for renewable projects on public lands. Similarly, an initial mapping exercise has also identified significant acreage of private disturbed lands that are likely appropriate for renewable energy development.

It is important to note that the NGOs involved in this exercise are not specifically endorsing the identified pilot project areas as "go zones" for development. Nor do we support legislative designation of renewable energy zones.

Instead, it is our strong belief that the state and federal government agencies, working with stakeholders, will be able to conduct an accelerated short-term exercise to quickly identify renewable energy pilot project areas. We also believe that it will be possible to gain broad consensus on a number of areas for development. The NGOs involved in this effort are willing to collaborate with the state and federal agencies to identify renewable energy pilot project areas as part of a larger planning effort that includes both a short-term and a long-term process for comprehensive planning, as described above in this memorandum.

The potential pilot project areas in the attached map were identified based on the criteria contained in this memorandum. Particular consideration was given to the following factors:

1. Protecting the core of pristine desert lands, which provides the following benefits:
   a. Areas are located in proximity to existing population centers

b. Areas are located in proximity to existing transmission and infrastructure.
c. Areas are located in the vicinity of homes and services for the workforce that will be required
d. Reduction of greenhouse gas emissions related to necessary travel of workforce to these facilities
e. Opportunities for economic stimulus are created for population centers in need of jobs
f. Areas will not create small cities to support facility operation in remote desert locations

2. Avoidance of lands with known ecological and biological values, and known cultural values, based on site visits and database queries. Lands are not underrepresented in other public lands conservation areas.
3. Prioritization of public lands and lands adjacent to degraded public and private lands (as defined above), for the following reasons:
   a. Lands adjacent to degraded lands typically have lower biological value due to the edge effect of disturbed lands.
   b. Locating pilot projects adjacent to private disturbed lands allows for expansion of the renewable energy development and clustering of renewable energy projects over larger areas.
   c. Locations have the potential to attract projects from siting in core habitat areas.
4. This mapping exercise was conducted in one week with a relatively small team of ecologists, biologists and conservation professionals. The first step was to identify to a number of potential pilot project areas based on firsthand knowledge of the landscape, a GIS evaluation, and biological and cultural database queries. The second step was to refine these initial pilot project areas through site visits. In one week, the group identified public lands that are potentially appropriate for renewable energy development. Our conclusion from this mapping exercise is it is possible to site pilot areas for renewable facilities in a manner that minimizes impact to the desert ecosystems and we are ready to collaborate in finding those areas.

In conclusion, I would strongly recommend the Subcommittee look at maximizing energy efficiency, Conservation and distributed generation (rooftop solar) with s a federal feed-in-tariff to stimulate this activity, prior with commercial solar developments as outlined above.

Thank you for your time this morning.

Audubon California * California Wilderness Coalition * Defenders of Wildlife * Desert Protection Council * Mojave Desert Land Trust * Natural Resources Defense Council * Sierra Club * The Nature Conservancy * The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
  - Lands that have been "type-converted" from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use). [1]
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA: [2]
  - Allow for the expansion of renewable energy development onto private lands.
  - Private lands development offers tax benefits to local government.
- Brownfields:
  - Revitalize idle or underutilized industrialized sites.
  - Existing transmission capacity and infrastructure are typically in place.
- Locations adjacent to urbanized areas: [3]
  - Provide jobs for local residents often in underserved communities;
  - Minimize growth-inducing impacts;
  - Provide homes and services for the workforce that will be required at new energy facilities;
  - Minimize workforce commute and associated greenhouse gas emissions.
- Locations that minimize the need to build new roads.
- Locations that could be served by existing substations.
- Areas proximate to sources of municipal wastewater for use in cleaning.
- Locations proximate to load centers.
- Locations adjacent to federally designated corridors with existing major transmission lines. [4]

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy. [5]

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant [6] populations of federal or state threatened and endangered species, [7] significant populations of sensitive, rare and special status species, [8] and rare or unique plant communities. [9]
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves. [10]
- Lands purchased for conservation including those conveyed to the BLM. [11]
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes. [12]
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas. [13]
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands. [14]
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units. [15]

EXPLANATIONS

[1] Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

[2] Based on currently available data.

[3] Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

[4] The term "federally designated corridors" does not include contingent corridors.

[5] Lands where development is prohibited by statute or policy include but are not limited to: National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic

and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

[6] Determining "significance" requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

[7] Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

[8] Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

[9] Rare plant communities/assemblages include those defined by the California Native Plant Society's Rare Plant Communities Initiative and by federal, state and county agencies.

[10] ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

[11] These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

[12] Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

[13] Proposed Wilderness areas: lands proposed by a Member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a Member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a Member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a Member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined "wilderness characteristics." The proposal has been publicly announced.

[14] The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

[15] Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).

Response to questions submitted for the record by Councilman Jim Ferguson

1. Councilman Ferguson, in your testimony you mentioned the need to identify pilot projects that can be sited quickly and without conflict. Can you identify any sites that can be located without local objection?

Response: In the Coachella Valley, there do not appear to be any sites. There is already a significant number of wind turbine facilities located on both BLM and private lands in the Coachella Valley. While it is likely that some additional wind energy projects may be sited in the valley, or that existing turbines will be replaced by larger-generating turbines, it is doubtful that a large solar project could be easily sited in the Coachella Valley, where significant urbanization has already occurred and many areas have already been committed to conservation. We are, however, actively pursuing roof-top solar and improved energy conservation in the valley. Not far outside the Coachella valley, there is a large area on both private and BLM lands by Desert Center that has been disturbed by abandoned agricultural activities. There is also a large area in the Palo Verde Valley area near Blythe that has also been disturbed. It is my understanding that a coalition of environmental organizations has identified these two areas as potentially suitable for renewable energy projects. This coalition submitted the attached map to BLM ("Map") as part of the coalition's input into BLM's siting process. In addition, they have provided the attached Desert Siting Criteria ("Criteria") for further ascertaining suitable sites within the designated solar zones. You will see on the map that the coalition also identified areas in other parts of the California desert that they consider as potentially suitable for renewable energy project siting. This Map and Criteria are in preliminary draft form and represent the view of predominantly environmental groups. Other interest groups can be expected to desire an expansion of the identified on the Map areas and greater flexibility with the Criteria,.

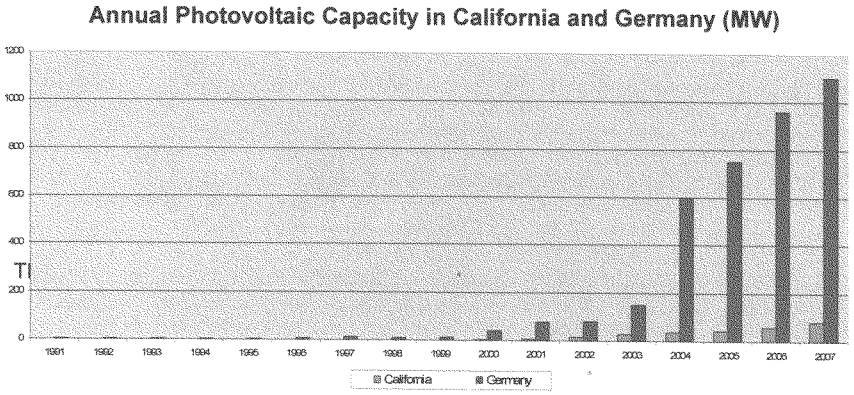
2. Councilman Ferguson, does an inventory of degraded or previously used lands that would be suitable for siting renewable energy projects exists? If not, how much time and money do you estimate it would take to compile such an inventory, and what would be the best agency to carry this out?

As indicated in the response to Question 1, a coalition of environmental groups has been working to prepare an inventory of what they consider to be previously disturbed lands suitable for siting renewable energy projects. While this inventory would reflect their particular assumptions and criteria, it may make a good point of departure for preparation of an inventory for use by BLM to consider siting facilities on federal land. I believe, however, that preparation of an inventory should be coordinated among all stakeholders. The State of California has, for example, already expended considerable effort through its RETI (Renewable Energy Transmission Initiative) process to identify suitable sites. There has been criticism, seemingly justifiably, of this process for its lack of inclusion of affected local governments and other interests. For example, the County of Riverside was critical of the process for not having sought to coordinate with the county and other local governments and interest groups. To achieve an expedited process, I would suggest that perhaps your committee staff could work with BLM, USFWS, state energy and resource agencies, affected local governments, and environmental interests to seek rapid consensus about disturbed areas suitable for renewable energy development. As an example of what the environmental coalition has done, their criteria have resulted in their identifying the following areas as potentially suitable for renewable energy facility siting.

CDCA Area Name	Public Lands (acres)	Private Lands (acres)
Riverside East	22,492	29,496
Desert Center	5,129	8,163
Pisgah	17,071	5,343
Imperial East	6,285	552
Imperial West	15,637	4,077
Westmoreland	4,660	582
Chocolate Mountains	6,370	7,068
Subtotal SEZ	**77,444**	**55,281**
Antelope Valley Study Area	4,040	82,379
Total	**81,684**	**137,660**

3. Councilman Ferguson, please explain the difference between a "feed-in-tariff" system and "net metering."

Thank you for the opportunity to clarify the difference between "net energy metering" and "feed-in tariffs." The following chart compares California and German solar installations. California's incentive structure—in blue—is based on net energy metering. In Germany, the feed-in tariff model has had dramatic results as shown in red.



Net energy metering prices are established based on utilities' avoided costs, or simply what's best for the utility in the short term. Feed-in tariffs are used to catalyze markets, and to assure independent investors with reasonable returns to make this a reality.

Net Energy Metering (NEM)

Without question, "net energy metering" limits solar installations and greatly complicates the solar investment analysis. To participate in a net energy metering program like the California Solar Initiative (CSI), a solar installation must offset a specific meter and the system must be sized to generate no more power than is used by that meter on site. The rules limit the size of the solar system to the consumption on site. Because of this meter restriction, virtually all multi-family buildings and multi-metered commercial buildings are excluded from participation.

Sectors where NEM does not work

1. Multi-family buildings
2. Multi-metered commercial properties
3. Properties that can generate excess power
4. Industries, businesses and institutions on low-cost rates

Payback of the net system costs for photovoltaics installed under the NEM rules comes from reducing the owner's electric bill. That reduction is based on avoiding the purchase of conventional power. Its value is a function of the rate at that meter, which varies. Consequently, buildings that have very low electric rates will not benefit sufficiently from the net metered savings to make their projects economically viable. A low rate—in addition to retarding investments in energy efficiency—devalues the output of a solar system.

Many of the best roofs for solar in the urban environment are on buildings that are multi-metered or pay very low rates, making them unsuited for CSI participation. Time of use rates complicate the situation further.

Background on Feed-In Tariffs (FIT)

A distinctly different incentive model for solar systems and other renewables are "feed-in tariffs." These are sets of prices used to jumpstart renewable energy production. When subject to feed-in tariffs, electric utilities are obligated to buy renewable power such as solar, wind, biomass, and geothermal at above-market rates set by the government. And investors can generate as much as they want—or as much as their roofs or land areas will allow. Unlike net energy metering, feed-in tariff incentives are built around the requirements of solar investors.

Different tariffs are paid for different renewables—wind, solar, biomass, geothermal, etc.—and for different-sized systems. Generally, the tariffs paid per kilowatt-hour are 2—3 times the retail rate, well above utility avoided costs and the

wholesale rates traditionally paid for power purchases. Over time, and based on their success and technology gains, the prices can be reduced.

Without question, the German FIT model has proven to be the world's most effective practice for boosting adoption of renewable energy technologies. The model has been used for wind and solar, with wind developments providing many times more power than solar. More than 41 nations—from Spain and Portugal to France, Italy, Denmark, the Czech Republic, and South Korea are now emulating the German model, using FITs to stimulate renewable power production. California—despite its abundant sunshine—is seriously lagging.

Mr. COSTA. Thank you.

[Applause.]

Excuse me. We appreciate the enthusiasm, but we don't encourage either cheering or booing or any of those kinds of things during these hearings. They take away from it. But obviously you invited your family here.

[Laughter.]

Our next witness is Commissioner Julia Levin from the California Energy Commission. And our last witness was about 30 seconds over. As I say, I give a little leeway, but do be mindful of the time.

Thank you very much. Commissioner Levin?

STATEMENT OF JULIA LEVIN, COMMISSIONER, CALIFORNIA ENERGY COMMISSION

Ms. LEVIN. Good morning, Mr. Chairman, and members of the Committee. Thank you very much for the opportunity to testify and for looking for ways to build consensus on this very, very important issue for California.

Mr. COSTA. Is the mic on there?

Ms. LEVIN. OK. Is this better?

Mr. COSTA. Yes.

Ms. LEVIN. Sorry.

Mr. COSTA. You have to be right up close.

Ms. LEVIN. All right. I will try.

The California Energy Commission, for those of you that aren't familiar with it, is the statewide agency responsible for implementing California's policies on renewable electricity, energy efficiency, we set building and appliance standards for efficiency, transmission, transportation, fuels, climate change policies, and other energy-related policies.

We are also the permitting agency in California for thermal powerplants, which includes geothermal, natural gas, and solar thermal. It does not include photovoltaics, however, because those are not thermal power. And we also permit transmission lines associated with thermal powerplants.

As you know, California has been a leader in climate and clean energy policies for many, many decades. And we hope to continue our leadership on this very important issue of balancing accelerated renewable energy development and conservation of sensitive resources.

As many people have mentioned, California has a very aggressive renewable electricity goal, 33 percent. You may not be aware that we also have a state Global Warming Solutions Act, which many of us refer to as AB 32, which requires California to reduce our

global warming emissions back to 1990 levels by 2020, which is a cut of about 29 percent from business as usual.

It is an aggressive goal, but our Governor, like President Obama, has stated an even more impressive goal for 2050, which is the goal proposed by most scientists around the world, and that is a reduction of 80 to 90 percent of all global warming emissions by 2050.

These are very, very critical goals.

Mr. COSTA. Listen, I am really serious about this. We appreciate your enthusiasm, but it is not polite for the witness, and it takes away from the time. And if there come to be more demonstrations, we will have to ask you to please leave. So, we really are serious about that.

Commissioner Levin, please go ahead.

Ms. LEVIN. Thank you.

Mr. COSTA. We won't count that against your time.

Ms. LEVIN. Thank you. These are very, very important goals, not just to protect California from the worst impacts of climate change, including impacts on sensitive ecosystems like the California desert, these are also critical for our economy and for building a clean energy economy of the future. These will create jobs, these will create new businesses, business opportunities in California. It will also protect consumers and finally give us true energy independence.

All of these goals are recognized in the American Recovery and Reinvestment Act, which puts more than $40 billion into clean energy programs, and California would like to get our share of that money, in part by accelerating renewable energy development in the right places in California.

How do we plan to achieve all of these goals? By working together in a collaborative, science-based, transparent planning process that identifies the right places for renewable energy development and the most important places to conserve and protect from development.

Several of the Committee members have recognized RETI, the Renewable Energy Transmission Initiative. This is a process California began nearly two years ago to identify the most important areas for renewable energy development based on energy, economic, and environmental factors. We have recently begun to expand that effort due to the Governor's Executive Order last November and a memorandum of understanding between state and Federal agencies, including the Bureau of Land Management, U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the California Energy Commission.

The Executive Order and the memorandum of understanding call on the Federal and state agencies not just to expedite and streamline permitting for new renewable energy development, but to create one-stop permitting so it is easier for applicants to establish renewable energy zones that are priority areas for renewable energy development and the transmission needed to serve those zones, and to develop a desert renewable energy and conservation plan, which will provide the long-term conservation needed in the most sensitive areas of our important desert.

And we are well along in this process, and I really have to thank my Federal colleagues, particularly the Bureau of Land Manage-

ment, which has been an absolutely astounding, wonderful partner in this, as have the branches of the armed services, particularly the Marines at Twentynine Palms and elsewhere. They really have been full partners and participated in RETI and in the DRECP planning and the other—both renewable energy permitting and conservation planning in the desert.

That partnership is critical, and if I have one request of the Committee it is to increase the resources for these Federal agencies, so that they can only increase their participation or, maybe more realistically, get some sleep every once in a great while, because they really—their partnership is critical to the success.

As I said, it is very, very important to be successful, to achieve a consensus that you are striving for by having a science-based, public, transparent process. We believe this process will help to accelerate renewable energy in the right places, and to help us to develop the long-term conservation plan that we need to protect the most sensitive, vulnerable, and unique California resources.

So, we thank you again very much for your time, and we look forward to achieving that consensus together.

[The prepared statement of Ms. Levin follows:]

Statement of Julia Levin, Commissioner, Renewable Energy, California Energy Commission

Good Morning, Mr. Chairman and Committee Members. My name is Julia Levin and I am the presiding Commissioner for Renewable Energy at the California Energy Commission. Thank you for the opportunity to provide this testimony.

The California Energy Commission is responsible for implementing statewide policies on renewable energy, energy efficiency, electricity transmission, transportation fuels and the State's climate change policies. The Energy Commission is also the state permitting agency for thermal power plants greater than 50 megawatts (MW), including solar thermal, geothermal and natural gas powered plants. In addition, the Energy Commission permits transmission lines associated with thermal power plants, develops a statewide Strategic Transmission Investment Plan and designates transmission corridors on non-federal lands.

As you know, California has a long history of leadership on climate and clean energy issues. In 2002, California enacted the country's largest Renewable Portfolio Standard, requiring 20 percent of the State's electricity to be from renewable sources. In 2006, California enacted the Global Warming Solutions Act, also known as "AB 32," which requires California to reduce its global warming emissions to 1990 levels by 2020, a cut of about 29% from business-as-usual levels. Last fall, Governor Schwarzenegger issued Executive Order S-14-08 raising California's Renewable Portfolio Standard to 33 percent by 2020 and calling on the State to reduce its global warming emissions 80 percent below 1990 levels by 2050.

Achieving these goals is critical to protect California from the worst impacts of climate change—rising sea level, air pollution, droughts, forest fires, declining fish and wildlife populations, and significant adverse impacts on agriculture. California's climate and clean energy policies also strengthen our economy by creating new jobs and business opportunities, saving consumers money, and providing energy security. The American Recovery and Reinvestment Act recognizes the economic benefits of moving toward a clean energy economy by investing more than forty billion dollars into clean energy programs. We hope to take advantage of those dollars by expediting the permitting of appropriately sited renewable energy projects in California.

These are ambitious goals that require state and federal agencies to work together to accelerate renewable energy development while protecting and conserving sensitive resources. California began a more coordinated planning effort called the Renewable Energy Transmission Initiative—known as "RETI"—to bring agencies and stakeholders together to identify the most cost-effective and environmentally preferable renewable energy zones and transmission corridors. Federal, state and local agencies, renewable energy companies and associations, conservation groups, utilities, the Armed Services and other stakeholders have participated in RETI. RETI will identify and rank Competitive Renewable Energy Zones (CREZ's), develop transmission plans to access those zones, and lead to applications for new trans-

mission. We believe that RETI will facilitate the siting and permitting of renewable energy projects and the transmission needed to serve those projects.

Last fall, Governor Schwarzenegger issued Executive Order S-14-08 (Attachment A) to increase California's RPS to 33 percent by 2020 and to build on RETI to expedite renewable energy development. At the same time, state and federal agencies—including the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and California Energy Commission (CEC)—entered into a Memorandum of Understanding (MOU) that establishes a Renewable Energy Action Team charged with the following tasks:

- Identify Renewable Energy Zones based on energy, economic and environmental factors—this would build on RETI and other scientific and stakeholder input;
- Develop a Desert Renewable Energy Conservation Plan (DRECP) that identifies priority areas for renewable energy development and conservation;
- Prioritize and expedite review and permitting of renewable energy projects, especially projects within designated Renewable Energy Zones.

State and federal agencies, including BLM, USFWS, the Armed Services, CDFG and CEC, are working together very closely now to coordinate project siting and permitting, transmission planning and conservation in the California Desert. We are very grateful to the federal agencies for their full partnership in these important planning efforts and believe that our partnership is critical to success.

The CEC and CDFG will work together with local and federal agencies as well as stakeholders and scientific experts to produce a guide to Best Management Practices for siting and development of renewable energy, which will be tailored to each energy type—solar, wind, geothermal, biomass. We will also produce a map that identifies appropriate development areas and areas critical to protect from development. These will then form the basis for a long-term conservation plan, known as a Natural Communities Conservation Plan, or NCCP.

We believe that working together with state, federal and local agencies, as well as a wide range of stakeholders in these science-based, transparent planning processes will identify the best areas for renewable energy development, and will expedite that development. We also believe that these processes will identify and lead to the protection of the areas most critical to conserve.

EXECUTIVE ORDER S-14-08
11/17/2008

WHEREAS, the State of California is a world leader in efforts to reduce global warming and greenhouse gas emissions, increase renewable energy production, promote energy efficiency, energy conservation, clean air and emission controls, expand the use of low carbon, alternative fuels and promote and commercialize new technologies and industries; and

WHEREAS, California has previously led the nation with an aggressive Renewable Portfolio Standard (RPS), requiring California's retail sellers of electricity to serve 20 percent of their load with renewable energy by 2010; and

WHEREAS, in 2003, the Governor called for an acceleration of the RPS, urging that 20 percent of California's electricity come from renewable sources by 2010 rather than 2017, seven years earlier than previously required, and this accelerated standard became law in September 2006, when the Governor signed SB 107; and

WHEREAS, California's high standards and ambitious goals have resulted in California leading the nation in renewable energy innovation, receiving more investment funding in clean technology than anywhere else in the United States, and accounting for 44 percent of all U.S. patents in solar technologies and 37 percent of all U.S. patents in wind technologies; and

WHEREAS, producing electricity from renewable resources provides multiple and significant benefits to California's environment and economy, including improving local air quality and reducing global warming pollution, diversifying energy supply, improving energy security, enhancing economic development, and creating jobs; and

WHEREAS, California has some of the best renewable energy resource areas in the world, providing immense potential for clean, valuable electricity generation in the state, and the development of these resources must be accelerated; and

WHEREAS, substantially increased development of renewable electricity sources, energy efficiency and demand response is needed to meet the greenhouse gas reduction goal of 1990 levels by 2020 and 80 percent below 1990 emissions levels by 2050, making the success and expansion of renewables a key priority for California's economic and environmental future; and

WHEREAS, fostering greater and more timely renewable energy development means California's energy agencies must establish a more cohesive and integrated

statewide strategy, including greater coordination and streamlining of the siting, permitting, and procurement processes for renewable generation, improving the manner in which the state develops its transmission infrastructure, and encouraging technically and economically feasible distributed renewable energy opportunities; and

WHEREAS, the California Public Utilities Commission (CPUC) has approved more than 6,300 MW of renewable generation contracts for investor-owned utilities, and has identified various challenges that impede their timely realization, relating to transmission, financing, siting, permitting, integration, environmental and military objectives, technology development and commercialization and equipment procurement; and

WHEREAS, the California Energy Commission (CEC) in its 2007 Integrated Energy Policy Report (IEPR) indicated that there are substantial barriers to generation siting, permitting and transmission that must be addressed in order to achieve the 2010 and 2020 RPS goals; and

WHEREAS, the Renewable Energy Transmission Initiative (RETI) is a statewide initiative to help identify the transmission projects needed to accommodate these renewable energy goals and facilitate transmission corridor designation and transmission and generation siting and permitting; and

WHEREAS, RETI will (1) assess competitive renewable energy zones in California and surrounding regions that can provide significant electricity to California consumers by 2020; (2) identify those zones that can be developed in the most timely and cost effective way, with least environmental impact; and (3) prepare detailed transmission plans for those zones identified for development; and

WHEREAS, deployment of new renewable energy technologies across the state will require utilizing new areas of biologically sensitive land; and

WHEREAS, California is committed to conserving natural communities at the ecosystem scale through the use of California's unique Natural Community Conservation Planning (NCCP) tool, coordinated by the Department of Fish and Game (DFG) and CEC, which identifies and provides for the region-wide protection of plants, animals, and their habitats while allowing for compatible economic activities such as renewable energy generation; and

WHEREAS, the Western Governor's Association has initiated the Western Renewable Energy Zone (WREZ) initiative to identify and expedite cost-effective, environmentally sensitive transmission development to areas with high-grade, renewable energy resources in order to bring about the development of 30,000 megawatts of clean and diversified energy across the West by 2015.

NOW, THEREFORE, I, ARNOLD SCHWARZENEGGER, Governor of the State of California, by virtue of the power vested in me by the Constitution and statutes of the State of California, do hereby order effective immediately:

1. That the following Renewable Portfolio Standard target is hereby established for California: All retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020. State government agencies are hereby directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines.
2. The Resources Agency shall lead the joint collaboration between the CEC and the DFG to expedite the development of RPS eligible renewable energy resources through the actions outlined in this order.
3. The Department of Fish and Game shall immediately create a new internal division, the primary purpose being comprehensive planning and streamlined compliance services; including for renewable energy projects. The division shall ensure the timely completion of NCCPs, which embody the balancing of project assurances with ecosystem protection.
4. Pursuant to this Order and the MOU signed on November 17, 2008 by the CEC and DFG formalizing the Renewable Energy Action Team (REAT), the REAT shall lead completion of items 5 through 12.
5. Pursuant to the MOU, DFG and CEC shall immediately create a "one-stop" process for permitting renewable energy generation power plants. Instead of filing multiple sequential applications, the DFG and CEC shall create a concurrent application review process, which shall be filed directly at the state level. To facilitate this process, a special joint streamlining unit shall be created and shall reduce permit processing times by at least 50% for projects in renewable energy development areas, as such areas are defined by the REAT beginning on February 1, 2009.
6. Pursuant to the MOU signed on November 17, 2008 by the CEC, the DFG, the United States Bureau of Land Management and the U.S. Fish and Wild-

life Service, the REAT shall endeavor to include all appropriate federal partners in the expedited permitting process described in number 5 above.

7. By December 1, 2008, the REAT shall initiate the Desert Renewable Energy Conservation Plan (DRECP) process for the Mojave and Colorado Desert regions.
8. By March 1, 2009, the REAT shall identify and publish top priority areas in California where other NCCPs or similar plans should be developed based upon their renewable energy development potential.
9. By December 31, 2009, the REAT shall develop and publish a Best Management Practices manual to assist RPS project applicants in designing projects to emphasize siting considerations and minimize environmental impacts for RPS desert projects.
10. By December 31, 2009, the REAT, in conjunction with our federal partners and stakeholder groups, shall develop a conservation strategy that clearly identifies and maps areas for RPS project development and areas intended for long-term natural resource conservation as a foundation for the DRECP.
11. By December 31, 2010, the REAT, in conjunction with our federal partners and stakeholder groups, shall complete the draft DRECP and initiate the environmental review process.
12. By June 1, 2012, the final DRECP shall provide binding, long-term endangered species permit assurances, facilitate the RPS desert project approval process, and provide a process for state and federal conservation funding to implement the DRECP.
13. By January 1, 2010, the CEC shall provide an estimate of total retail electricity sales in California in 2020 by utility and shall update this number every two years through the IEPR.
14. Direct the CEC, and request the CPUC and California Independent System Operator (ISO), to work with other RETI stakeholders to complete the following by March 31, 2009: (a) develop a product that identifies top priority renewable energy zones that can be developed reliably, cost-effectively and with least environmental impact; and (b) issue a Renewable Transmission Development Report that identifies potential routes and interconnection points for new lines. I direct DFG to participate in the RETI process and the REAT to provide increased technical support to the RETI stakeholder group. I also request that the CPUC and the ISO support the RETI stakeholder group as appropriate in order to meet this deadline.
15. Direct the CEC, and request the CPUC, to participate in the WREZ initiative in order to increase availability to all potential renewable energy resources, coordinate research, planning, and investments with our regional partners, and to complement RETI. Specifically, I request that the CPUC, in conjunction with the CEC, ensure that there is information exchange and coordination between the WREZ initiative and RETI and to facilitate the feasible integration of the resulting plans from each initiative.
16. In order to facilitate the timely permitting of renewable energy projects, all state regulatory agencies shall give priority to renewable energy projects as set forth in this Executive Order.
17. In conjunction with its work with DFG to develop the DRECP pursuant to number 7 above and any work it performs to facilitate the siting and permitting of renewable generation and transmission projects, the CEC shall coordinate with BLM, CPUC, the California ISO, and other interested federal, state, and local agencies, work closely with interested stakeholders, and utilize input from RETI.

This Order is not intended to create, and does not create, any right or benefit, whether substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, entities, officers, employees, agents or any other person.

I FURTHER DIRECT that as soon as hereafter possible, this Order be filed with the Office of the Secretary of State and that widespread publicity and notice be given to this Order.

IN WITNESS WHEREOF I have here unto set my hand and caused the Great Seal of the State of California to be affixed this the 17th day of November 2008.

ARNOLD SCHWARZENEGGER
Governor of California

ATTEST:
DEBRA BOWEN
Secretary of State

Response to questions submitted for the record by Julia A. Levin

1. **Commissioner Levin, does an inventory of degraded or previously used lands that would be suitable for siting renewable energy projects exist? If not, how much time and money do you estimate it would take to compile such an inventory, and what would be the best agency to carry this out?**

While inventories of degraded or previously used land exist with various state, local, and federal agencies, this information is neither complete nor consistent on a statewide basis. A comprehensive inventory could help renewable energy developers and permitting agencies to determine the most suitable locations for the development of renewable energy projects. The Energy Commission, building on the work of the collaborative Renewable Energy Transmission Initiative (RETI), is working closely with the California Department of Fish and Game (CDFG), the Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service (USFWS) to identify disturbed areas that are suitable for the development of renewable energy projects, as well as areas for conservation purposes. The Energy Commission has been supportive of any efforts to provide renewable developers guidance, tools, and information necessary to develop renewable projects while minimizing environmental impacts, and believes a comprehensive statewide inventory of degraded or previously used lands would be a valuable tool to assist both renewable developers and the REAT agencies as they move forward in the DRECP process.

We are unable to estimate the dollar amount that would be required to compile such an inventory, but for the Mojave and Colorado Desert region of California, it could require several persons working full time for six months to do so. Such work would require coordination with multiple state, local, and federal agencies, including county planning departments. In addition to examining aerial photography, there would be a need to acquire zoning and other land use information, including GIS layers, accompanied by some amount of on the ground verification. Based upon their responsibility for mapping and monitoring prime agricultural land, the California Department of Conservation may be the appropriate agency to undertake this work. However, such work may not have the highest priority within the Department. The Energy Commission believes there is merit in compiling such an inventory and has begun to identify areas most suitable for solar development in support of RETI and the Governor's Executive Order S-14-08. We would like to accelerate this work given its importance, but have been unable to do so due to a lack of adequate staff resources. Going forward, the Energy Commission will continue to identify previously disturbed land for purposes of assisting renewable developers and will coordinate our efforts with the appropriate land use agencies.

2. **Commissioner Levin, could you explain in more detail how the Renewable Energy Transmission Initiative differs from the Western Governors' Renewable Energy Zone process? Are there are differences in the methodologies or expected results of the two processes?**

The Renewable Energy Transmission Initiative (RETI) and the Western Governor's Renewable Energy Zone (WREZ) initiative are both processes to identify, through objective analysis and broad stakeholder participation, major new transmission to access renewable resources. The differences between the processes lie in the scale of the efforts and the level of granularity associated with the analyses. RETI will also provide one of the bases for the development of California's Desert Renewable Energy Conservation Plan. We will also explore ways to encourage and accelerate renewable energy development within Completive Renewable Energy Zones (CREZ) identified by RETI.

WREZ is a West-wide effort to identify those concentrated areas throughout the West with potential for significant renewable energy available for export throughout the Western Interconnection. Given this aim, and given the size of the study area, WREZ has taken a relatively broad-brush approach to identification of renewable resources and land use constraints.

RETI, on the other hand, is a California effort to identify zones, and the transmission needed to access them, sufficient to meet a specific statewide target by 2020: 33% renewable energy and GHG emissions reduced to 1990 levels. Given this particular aim, RETI has considered a wider range of resources and transmission solutions than has WREZ. Furthermore, because the transmission projects identified by RETI will be planned, permitted, and built by a relatively small group of California entities, RETI has focused on prioritizing particular zones for immediate attention. To that end, RETI has developed innovative approaches to rating zones and transmission segments according to both their expected economics and their potential environmental impact. Because

WREZ brings together a much more disparate group of load-serving entities, transmission owners, state and federal agencies, and other stakeholders, WREZ is not attempting to prioritize zones but rather to identify possible opportunities for major new transmission, and to rely on utilities and transmission developers to determine the order in which the lines are developed.

3. Commissioner Levin, why does the CEC not have jurisdiction over solar photovoltaic power plants, and does this lack of jurisdiction cause any problems in terms of planning and coordinating for the siting of photovoltaic plants?

The Energy Commission has siting jurisdiction over thermal power plants 50 megawatts and greater. This includes natural gas, geothermal and solar thermal plants. Solar photovoltaic power plants are not "thermal" because they convert solar power directly into electricity rather than into heat to power a turbine. In addition, most solar photovoltaic power plants were, until recently, extremely small. Thus, when the Energy Commission was created, solar photovoltaic power plants capable of utility scale generation were not anticipated and therefore not included within the Energy Commission's jurisdiction. There is no practical or technological reason to differentiate between the siting of solar photovoltaic power plants and solar thermal power plants as the environmental impacts of large scale solar facilities are similar. Unfortunately, this regulatory artifact from the mid-1970s has created additional fragmentation in regulatory authority for the permitting of power plants in California. Solar photovoltaic power plants are sited by county planning agencies, which often lack the staff resources and expertise necessary to evaluate large scale solar projects. Consequently, there can be inconsistent approaches between the licensing of these facilities, such that mitigation requirements may vary between projects and local siting decisions may not reflect statewide priorities.

4. Commissioner Levin, please provide the committee with a status update on the Renewable Energy Action Teams created by the Governor's executive order last year. Have they been established, have they been meeting, and what is the time frame for them to issue a product?

The Renewable Energy Action Team (REAT) has been established and has been meeting every other week since early this year. The REAT is comprised of representatives from the Energy Commission, CDFG, BLM, and the USFWS. The Department of Defense has expressed interest in joining the REAT and has participated in several REAT meetings, but they have yet to sign an MOU formalizing their participation.

Two publicly-noticed REAT workshops were held in March in Sacramento (March 12) and Palm Springs (March 17) to provide an overview of the REAT's plans to implement Executive Order S-14-08 and to receive public comment. More than 100 people attended each workshop. A workshop focusing on development of the Desert Renewable Energy Conservation Plan (DRECP) and the public participation process is planned in Victorville on June 18.

As required by Executive Order S-14-08, the REAT will produce by late December a Best Management Practices (BMP) manual to assist renewable developers, and a DRECP conservation strategy and mapping that identifies areas suitable for renewable development, as well as areas for conservation purposes. Additional workshops will be held in the summer and fall of 2009 to discuss the draft BMP manual and DRECP and receive comments from the public, developers, environmental groups, and other interested stakeholders.

5. Commissioner Levin, how is California going to manage the water demands of concentrating solar power? Will there be a maximum allowable water use per unit of electricity generated for new electricity facilities?

The Energy Commission, in its 2003 Integrated Energy Policy Report, adopted a policy prohibiting the use of fresh water for power plant cooling unless it can be demonstrated that alternatives are economically infeasible or environmentally undesirable. To date, most of the solar power plant applications that have been filed do not propose the use of fresh water for cooling purposes. We anticipate that the trend away from the use of fresh water for power plant cooling will continue. However, we note that mirror washing can potentially be a significant use of water. The Energy Commission is interested in determining how to reduce total water use at solar power plants and to use reclaimed water, especially given the fact that the majority of solar power plants are likely to be located in areas where water is a scarce resource. We have not established nor proposed a maximum allowable water use standard per unit of electricity generated for the solar projects under review. To do so at this time could be premature without actual operating information and data that would allow the Energy Commission to compare various technologies and

determine if water use projects for such facilities is correct. Going forward, the Energy Commission will continue to examine ways to reduce the consumption of water use given the environmental benefits of doing so and will include appropriate recommendations on the Best Practices Manual..

6. Commissioner Levin, at the hearing you mentioned that the CEC had identified some potential changes to federal law that would be helpful for large-scale solar projects. Please provide those suggested changes to the committee.

The Energy Commission has identified several potential changes to federal law that would improve renewable energy development and habitat conservation in California. These recommendations are as follows:

- Accelerate BLM's permitting processes and require mandatory coordination of NEPA and CEQA for projects located within identified renewable resource areas. Renewable developers in California face duplicative and sequential rather than aligned state and federal permitting processes. Federal law should direct BLM to establish a permitting process similar to the Energy Commission's that includes a 12-month deadline for permit review and approval and features joint NEPA/CEQA compliance through the Energy Commission's permitting process. This change would accelerate project permitting, reduce costs, improve state and federal permit coordination, and provide incentives for developers to develop projects within renewable resource areas.
- Renewable projects located within identified renewable resource areas should receive priority processing by BLM and non-viable projects should be rejected or eliminated. BLM currently processes renewable energy projects in the order in which they are received. Statutes and/or regulations requiring BLM to accept applications in order should be changed, and BLM should be granted the flexibility to reject non-viable projects at the time of filing and/or redirect them to appropriate areas.
- BLM should redirect a portion of Right of Way (ROW) fees to fund enhancement and management activities of conservation areas used to mitigate project development in renewable resource areas. BLM requires applicants to establish endowment funds to pay for the management of mitigation areas. Using a portion of ROW fees would create a steady funding source for state and federal agencies to manage these areas, improve permitting and mitigation, and represent a public contribution to conservation activities. BLM should also simplify and standardize mitigation requirements in renewable resource areas.
- Site remediation agreements should be restructured to include only facility removal for projects located within identified renewable resource areas. Renewable developers are required to pay up-front remediation costs for future activities related to site closure, including removal of facilities, site re-contouring, and re-vegetation. By restructuring site remediation agreements to include only facility removal, state and federal policy regarding identified renewable resource areas would instead focus on redevelopment of project sites in perpetuity. This change would reduce impacts on pristine areas and undisturbed habitats, reduce future permitting times, and make use of existing transmission infrastructure. This change would also reduce developer costs and provide additional incentives for developers to locate within identified renewable resource areas.
- Projects located within identified renewable resource areas should receive priority in the California Independent System Operator's (CA ISO) queue. Generation projects in the CAISO queue are treated equally, affecting the order of transmission projects evaluated and approved by the CAISO. Assigning priority to renewable generation projects located in identified renewable within the CAISO queue will facilitate the development of transmission to these areas, thereby providing incentives to develop renewable generation in these locations. This proposal would require action by the Federal Energy Regulatory Commission (FERC) and possible changes to federal law.
- For projects located on state or private lands, create a federal nexus that will allow the USFWS to issue consistency determinations on state permits. Renewable developers proposing projects on state or private lands must acquire a Section 10 Incidental Take Permit that often takes years to complete. Although the state and federal agencies of the REAT are preparing the DRECP that will include a Section 10 Incidental Take Permit by 2012, it will be late to assist developers utilizing federal stimulus funds. With a federal nexus or linkage to a California Endangered Species Act (CESA) biological assessment, a developer could initiate an expedited Section 7 Incidental Take Permit with USFWS and/or use the CESA process for permitting purposes.

- Direct the Department of Defense to conduct base by base assessment of renewable energy development potential and both potential and need for energy to serve new renewable energy and/or increase energy security for bases and other military installations. Further require all bases and other installations to implement all cost-effective energy efficiency measures to increase energy security. Finally, and most importantly, clarify that energy security is an integral part of national security so that the Armed Services can move forward with renewable energy development where appropriate and not in conflict with training and other military purposes.

While the Energy Commission has been working closely with the DoD in RETI and other planning processes for several years, few opportunities to develop renewable generation on DoD installations have arisen. In 2008, the Report of the Defense Science Board Task Force on Energy Strategy examined the DoD's energy strategy and found that because military installations are highly dependent on electricity supplied from "outside the fence," critical national security and Homeland defense missions are at an unacceptably high risk of extended outage from failure of the grid. The Task Force recommended that the DoD invest in alternative energy supplies such as solar, wind and geothermal located on installations to reduce this risk. Because energy security is a critical component of our national security, the DoD should work closely with the Energy Commission and the other REAT agencies in the DRECP process to evaluate opportunities for the siting of renewable generation facilities on military installations to meet our common goals.

Thank you very much for the opportunity to provide additional information to the Committee. Please do not hesitate to contact me or my Advisor, James Bartridge, jbartrid@energy.state.ca.us at (916) 654-4169 with additional questions or requests for information.

Mr. COSTA. Well, thank you for your good testimony. Thank you for staying within the time limit. There are a number of questions that I am going to follow up on based on your comments that I think talk about collaboration and what we are doing on the Federal level. We will get to that in a moment.

Rachelle Chong—

Ms. CHONG. Thank you.

Mr. COSTA.—with the California Public Utilities Commission.

STATEMENT OF COMMISSIONER RACHELLE CHONG, CALIFORNIA PUBLIC UTILITIES COMMISSION

Ms. CHONG. Great pleasure to be here. I thank you for having—

Mr. COSTA. Thank you for being here, and thank you for representing the Commission.

Ms. CHONG. Well, I grew up in Stockton, so 102 did not scare me off.

Mr. COSTA. It is like Fresno.

Ms. CHONG. That is right.

Mr. COSTA. It is 103, 104, we call that balmy.

Ms. CHONG. That is right. No problem.

Well, we have been working hard at the Cali PUC since 2002, working on renewable energy goals. And what we do there is we oversee the renewable portfolio standard for the investor-owned utilities there. We also look at their contracts that they enter into for renewable energy, and we have the authority to permit new transmission lines for the IOUs.

Commissioner Levin has covered the very ambitious greenhouse gas and renewable goals that we have in the State, so I won't review that. But I thought a few statistics might be in order. Since the time we started our renewable energy program in 2002, through 2008 we have approved 111 contracts for a total of 6,672 megawatts of all types of renewable energy. Solar is a sizable por-

tion. Thirteen of those approved contracts are going to deliver about 2,500 megawatts of solar thermal and centralized photovoltaic generation.

In terms of actual delivered energy, between '03 and '08, 870 megawatts of new renewable generating capacity were installed, and are online. But what is interesting is none of the new renewable energy that is online came from solar. We haven't had a new commercial solar thermal plan built in California in 18 years, but the energy associated with solar contracts that we have approved is targeted to be online and delivered within the next three years. And, of course, solar is valuable, because when it is very hot, when we need the most electricity, the sun is shining.

But based on the number of approved and pending contracts, we do expect solar generation to play a significant role in meeting our AB 32 33 percent target. So, for these reasons, the PUC views the success of the Renewable Energy Transmission Initiative as being critical. We have identified 90,000 megawatts of near-term solar potential in this State, much of it on Federal lands.

Mr. COSTA. That number again?

Ms. CHONG. 90,000 megawatts near-term solar potential in this State, much of which is on Federal lands. Delays or varies in the permitting of these solar generation facilities will have real impacts on whether we make our greenhouse gas goals for this State.

We are very aware of the need to upgrade new transmission lines to deliver clean energy. The PUC has recently approved the Sunrise Powerlink line, which is expected to access at least 1,000 megawatts of renewable energy capacity from California's Imperial Valley. We have also approved the first segments of the Tehachapi Renewable Transmission Project for '07—in '07, and we are now looking at the later segments of Tehachapi Project, which will deliver about 4,500 megawatts of energy from the wind-rich Tehachapi area.

There has been a lack of human and financial resources, which we think may have contributed to the Federal permitting delays in the past. But we are encouraged by the new resources that have been announced by the Department of the Interior to prioritize the development of renewable energy, and we are glad to see Federal stimulus funds that are being put toward streamlined environmental review in California.

So, I did want to voice my thanks to the Administration and to Congress for those additional resources. We hope that these increased resources will allow for BLM and the PUC staff to collaborate efficiently on environmental review of these very important transmission lines.

A moment of caution. Although it is a valuable clean energy resource, utility scale solar has environmental impacts. They have large land use requirements, as the Chairman mentioned, and they may, some of them, have significant water use. While we are committed to developing renewable energy, we should ensure that our lands are used in the most efficient yet environmentally sensitive ways. So, we do suggest that BLM and the Federal agencies work with the PUC, the Energy Commission, and our utilities and the environmentalists to collaborate on the best use.

We have been working very hard on RETI, as mentioned by Commissioner Levin. This is—the most important thing about it is it is consensus-based. We have invited everybody into the tent. We have been working very hard in a transparent manner to identify specific corridors where we could develop transmission for renewable resources. And, really, the success of the entire undertaking has been collaboration and the process.

We have completed Phase 1 in December. We have actually identified California zones that provide cost competitive and environmentally preferable renewable resources. Phase 2A of RETI is now focusing on updating estimates of the generation potential in these renewable zones, and we are working on a conceptual statewide transmission plan. We expect the report to be out about July, and we hope that you will consider the work that RETI has done and perhaps it could be a good model for a Federal type of process.

In closing, we look forward to partnering with the Federal agencies and answering some challenges.

Thank you.

[The prepared statement of Ms. Chong follows:]

Statement of Rachelle Chong, Commissioner, California Public Utilities Commission

I want to thank Chairman Costa and the members of the Subcommittee for the kind invitation to testify before you. At the California Public Utilities Commission (CPUC), we have been working hard since 2002 on implementing the state's renewable energy goals. Our role is to establish rules governing the renewables portfolio standard (RPS) program for our regulated-utilities and to review contracts that our regulated utilities enter into for obtaining renewable energy. We also have the authority to permit new transmission lines, which are necessary to deliver this energy from the remote areas where renewable resources are often located.

California has set one of the most ambitious greenhouse gas and renewables goals in the country. The California investor-owned utilities are already mandated to provide 20% of their electricity from renewable energy sources by 2010. The Governor recently has adopted a further goal of 33% renewables by 2020. Our Air Resources Board has also identified 33% by 2020 as a key strategy for achieving California's landmark goal of reducing statewide greenhouse gas emissions to 1990 levels by the year 2020. This is part of the State's 2006 Global Warming Solutions Act, commonly referred to as AB 32.

Since our renewable program's inception in 2002, and through 2008, the CPUC has approved 111 contracts for a total of 6,672 megawatts (MW) of all types of renewable energy (including solar). Of that amount, 13 of those approved contracts are for the delivery of at least 2,500 MW of solar thermal and centralized photovoltaic projects. In terms of actual delivered renewable energy, from 2003 through 2008, 870 MW of new renewable energy were installed and came online. Unfortunately, none of this new renewable energy that is being delivered comes from solar. We have not had a new commercial solar thermal plant built in California in 18 years, but the energy associated with the solar contracts that we have approved are targeted to be online and generating power within the next three years.

Solar energy is particularly valuable as a contributor to our renewable energy and greenhouse gas reduction goals, given its peaking capacity and ability to provide clean power to California on our hottest, sunniest days. We expect solar generation technologies to be significant contributors to our 33% renewables goal. In addition to the approved solar contracts, another 2,000 MW-worth of solar contracts are currently pending CPUC approval.

For these reasons, the CPUC views solar development, including on federal land, as critical to the achievement of California's ambitious renewable energy and greenhouse gas reduction goals. California's Renewable Energy Transmission Initiative (RETI) identified over 90,000 MW of near-term solar potential in the state, much of it on federal lands. Delays or barriers in the permitting of solar generation facilities have real implications for California's ability to achieve its greenhouse gas goals. One analysis estimates that California's utilities might require 6,800 MW of in-state solar thermal power and 3,200 MW of new photovoltaic power to achieve

our target of 33% renewables in 2020. To put this in perspective, only 354 MW of solar thermal generation are operating today in California, with only an additional 114 MW operating anywhere else in the world. If our estimates are correct, California has only 10 years in which to permit, finance, build, and fully operate the equivalent of 19 times the state's current solar thermal generating capacity (and 15 times the current worldwide solar thermal generating capacity).

The permitting, financing, and building of these solar projects is a complex process that requires substantial coordination among various agencies. As the agency responsible for permitting transmission infrastructure in California, we are acutely aware of the need for concurrent development of the transmission infrastructure needed to deliver that clean energy to customers. As you know, renewable resources are often located in areas that are far from the grid and load centers, and thus transmission lines are required to be built or upgraded.

At the CPUC, we recently approved the Sunrise Powerlink, which is expected to access at least 1,000 MW of renewable energy capacity in California's Imperial Valley. We also approved the first segments of the Tehachapi Renewable Transmission Project in 2007, and are now reviewing the later segments of that project, which would deliver approximately 4,500 MW of capacity from the wind-rich Tehachapi resource area into the Los Angeles basin. We look forward to working closely with BLM and other federal agencies on the development of these and other facilities located on federal land.

We understand that a lack of human and financial resources has contributed to federal permitting delays in recent years. We are encouraged, therefore, by recent announcements indicating a renewed fiscal commitment to renewable development, as expressed by the March 11th Secretarial Order from the Department of Interior establishing the development of renewable energy as a top priority. We are also pleased to see that there will be federal stimulus funds available to support streamlined environmental review in California. I applaud the Administration and Congress for their responsiveness in addressing delays in the permitting process. We are hopeful, too, that the resources will allow for timely and efficient collaboration between BLM and CPUC staff on joint state/federal environmental review of the transmission lines critical for renewables.

I would like now to sound a note of caution. Although a very valuable resource of clean energy, utility-scale solar power has environmental impacts, including large land requirements and potentially significant water usage. If we are to develop public lands with large-scale infrastructure—renewable or not—we should ensure that those lands are used in the most efficient and environmentally sensitive way possible.

We suggest, therefore, that BLM and other federal agencies work with the CPUC, the California Energy Commission, and publicly-owned utilities to determine how best to develop such lands. We should carefully consider whether and how such development might be concentrated in relatively small areas that maximize use of existing and planned transmission, contain high proportions of disturbed lands, and minimize cumulative environmental impacts.

This hearing is aptly sub-titled "The Road to Consensus," and I want to stress the importance of involving local stakeholders in all of these decisions. I believe California's Renewable Energy Transmission Initiative (RETI) may be useful to others as a model.

RETI was initiated primarily by the CPUC and the California Energy Commission, to address the need for more statewide planning in pursuit of our renewables goals. RETI is a consensus-based stakeholder process to identify the transmission needed to achieve California's renewable energy and greenhouse gas reduction goals. RETI has engaged a diverse group of stakeholders and benefited greatly from the involvement to date of the BLM, the U.S. Forest Service, and the U.S. Armed Forces. Phase 1 of RETI was completed in December 2008 and focused on identifying zones in California that are expected to provide cost-competitive and environmentally preferable renewable resources. We are now in Phase 2A of RETI, which is focused on updated estimates of the generation potential in renewable zones throughout the state and a conceptual statewide transmission plan. A report on Phase 2A is expected to be complete early this summer. We hope that you will consider the work that RETI has done, as it may be useful for future designations of renewable energy zones. We look forward to the continued engagement of federal agencies in the RETI process.

We look forward to partnering with federal agencies to address the challenges and tremendous opportunities presented by solar development on federal lands in California. Thank you again for inviting me here. I am happy to answer any questions from Members of the Committee.

Response to questions submitted for the record by Commissioner Rachelle Chong

1. **Commissioner Chong, does an inventory of degraded or previously used lands that would be suitable for siting renewable energy projects exist? If not, how much time and money do you estimate it would take to compile such an inventory, and what would be the best agency to carry this out?**

Answer: This question is better answered by the California Energy Commission (CEC) and I understand that Commissioner Julia Levin has been asked the same question.

2. **Commissioner Chong, could you explain in more detail how the Renewable Energy Transmission Initiative differs from the Western Governors' Renewable Energy Zone process? Are there are differences in the methodologies or expected results of the two processes?**

Answer: The Renewable Energy Transmission Initiative and the Western Governor's Renewable Energy Zone (WREZ) initiative are both processes to identify, through objective analysis and broad stakeholder participation, major new transmission to access renewable resources. The differences between the processes lie in the scale of the efforts and the level of granularity associated with the analyses.

WREZ is a West-wide effort to identify those concentrated areas throughout the West with potential for significant renewable energy available for export throughout the Western Interconnection. Given this aim, and given the size of the study area, WREZ has taken a relatively broad-brush approach to identification of renewable resources and land use constraints.

RETI, on the other hand, is a California effort to identify zones, and the transmission needed to access them, sufficient to meet a specific statewide target by 2020: 33% renewable energy and GHG emissions reduced to 1990 levels. Given this particular aim, RETI has considered a wider range of resources and transmission solutions than has WREZ. Furthermore, because the transmission projects identified by RETI will be planned, permitted, and built by a relatively small group of California entities, RETI has focused on prioritizing particular zones for immediate attention. To that end, RETI has developed innovative approaches to rating zones and transmission segments according to both their expected economics and their potential environmental impact. Because WREZ brings together a much more disparate group of load-serving entities, Public Utilities Commissions, and transmission owners, among other parties, WREZ is not attempting to prioritize zones itself, but rather to identify possible opportunities for major new transmission, and to rely on utilities and transmission developers to determine the order in which the lines are developed.

3. **Commissioner Chong, please provide the committee with a status update on the Renewable Energy Action Teams created by the Governor's executive order last year. Have they been established, have they been meeting, and what is the time frame for them to issue a product?**

Answer: The CEC is working collaboratively on the Renewable Energy Action Team with other agencies, and therefore, I defer to the CEC on this question.

Mr. COSTA. Thank you, Commissioner Chong. Thank you for staying within the timeline.

Our next witness is Mr. James Abbott, who is the Acting Director of the California State Office of the Bureau of Land Management. And we look forward to hearing you discuss some of this collaboration and the efforts with regards to not only the energy zones but the transmission corridors.

Mr. Abbott.

STATEMENT OF JAMES ABBOTT, ACTING STATE DIRECTOR, CALIFORNIA STATE OFFICE, BUREAU OF LAND MANAGEMENT

Mr. ABBOTT. Thank you. I appreciate the welcome. Let me also introduce this morning Darrin Thome, who is with me today from the U.S. Fish and Wildlife Service. He is the Chief of the Endan-

gered Species Act Division and is here to assist in answering any questions, should there be some, of the Fish and Wildlife Service.

I would like to welcome you to the California Desert Conservation Area. In 1976 when Congress passed the Federal Land Policy and Management Act, it was an area singled out for special management, because of its diverse resources, management complexity, and proximity to the large population base. Today, 2009, 33 years later, the competing land use demands in the California Desert Conservation Area has grown even more complex.

The emergence of new challenges associated with solar energy and other renewable energy development will indeed require us—

Mr. COSTA. Mr. Abbott, we want everybody to be able to hear you. Could you move the mic a little closer? I am sorry. You really have to speak into it. Just bring it a little closer to you.

Mr. ABBOTT. The emergence of new challenges associated with solar energy and other renewable energy development will indeed require us to find a way to reach consensus. As has already been pointed out, the Department of Energy's solar map does indeed indicate the abundance, rich abundance, that Southern California has for solar potential.

I have also given you a map showing how the desert is also overlaying the same map that is on the easel here with areas that have already been set aside for wilderness, areas of critical environmental concern, desert wildlife areas, recreation areas, and you can see it becomes quite a complex mosaic. That makes your title for this hearing "Solar Energy: The Road to Consensus" very apropos, and we look forward to hearing everyone's view on how we can reach that goal.

On March 11, 2009, Interior Secretary Salazar issued Order 3285 identifying renewable energy as one of the top priorities of the Department of the Interior and Bureau of Land Management. That order also acknowledges the significant challenges we face as a nation and meeting our energy needs while protecting and enhancing water, wildlife, and other natural resources. That order orders us, directs us, to use collaborative approaches to balancing the energy and environmental needs of this nation.

Here in California that collaboration process has already begun. The State's RETI initiative, the work being done with the Western Governors' Association, as well as the ideas that we are hearing from environmental groups and industry, are all part of the strategic planning that is underway for balancing these needs. The Federal programmatic solar environmental impact statement and recently announced solar energy zones are intended to continue the strategic planning and collaborative processes as we move forward.

BLM is committed to working with the State of California and a wide spectrum of interest groups to address renewable energies in a coordinated and joint approach. It is our goal to ensure that environmental impacts, industries, technological needs, all are considered in an open and public, transparent, inclusive process.

Let me summarize briefly for you where we currently are. The BLM nationally has received 158 applications for solar energy projects. These applications involve 1.8 million acres of public land.

Mr. COSTA. That is in California?

Mr. ABBOTT. Nationally.

Mr. COSTA. OK.

Mr. ABBOTT. And represent a combined generating capacity of 97,000 megawatts. Here in California we have received 66 applications for solar projects covering almost 575,000 acres.

The impacts of each of these proposed solar energy projects will be thoroughly evaluated through the environmental analysis process. We recognize and are committed to addressing the broad concerns and challenges associated with siting solar energy projects, especially in the desert region.

As previously mentioned, we do recognize the relatively large land footprint associated with solar energy projects and recognize that that will need special attention. We also recognize the scarce water resources in the desert regions and the importance of addressing technologies that address the concerns of water utilization. And we also continue to recognize that the desert already has a number of environmental resources that have been protected through previous efforts.

My written testimony also describes three national studies that are currently underway or recently completed. The Westwide Energy Corridor Project, which identified 6,000 miles of energy transmission in 11 western states, will serve as a backbone for continuing to address where additional transmission needs are necessary for incorporating renewable energy.

The solar energy programmatic environmental impact statement will be our strategic plan for identifying solar resources on public lands in six western states, and it will also serve to identify how we move forward with the site-specific solar energy zone.

In conclusion, the Department of the Interior and BLM clearly understand the critical work before us. Frankly, we do not have all the answers. However, we do recognize the need to include state, local governments, environmental interest groups, industry representatives, in the public as we move forward.

Our stakeholders have many viewpoints on where and how solar energy should be developed, and we look forward to working with them in a manner that allows us to make wise choices today that will serve the energy's future.

[The prepared statement of Mr. Abbott follows:]

Statement of Jim Abbott, Acting California State Director, Bureau of Land Management, U.S. Department of the Interior,

Introduction

Mr. Chairman and members of the committee, thank you for the opportunity to appear here today to discuss the Bureau of Land Management's (BLM) efforts to develop solar energy resources on public lands in an environmentally sensitive and responsible manner. I am accompanied here today by Darrin Thome, Chief of the Endangered Species Act Division of the Pacific Southwest Region of the U.S. Fish and Wildlife Service (FWS).

My testimony today will describe the considerable potential of public lands to produce solar energy and contribute to a comprehensive national energy strategy that places high priority on renewable energy development. I will also discuss the BLM's ongoing efforts to process applications for solar energy projects, and I will outline key challenges that influence solar energy siting and transmission. Finally, I will highlight the BLM's effort to address these challenges through landscape-scale planning for six western states that have the potential for siting utility-scale solar energy facilities.

The BLM is moving quickly on pending applications that are ready for review while we simultaneously move forward with medium- and long-term implementation measures. We are aware of, and take very seriously, the President's emphasis on

expeditious development of our domestic renewable energy resources while protecting and conserving important natural resources in the process.

Background

President Obama, Secretary Salazar, and Congress have expressed the critical importance of renewable energy to the future of the United States. Developing solar and other renewable energy resources is central to the Nation's efforts to reduce greenhouse gas emissions, mitigate climate change, and protect the global environment. Renewable energy is also vital to our economic development and energy security. Developing renewable energy can create jobs and promote innovation in the United States while reducing the country's reliance on fossil fuels.

The President has established ambitious goals to increase energy production from clean, renewable sources. Through investments enabled by the American Recovery and Reinvestment Act, the Administration has committed to doubling the Nation's renewable energy generating capacity over three years. To help achieve these goals, the Secretary issued a Secretarial Order in March 2009 that makes the development, production, and delivery of renewable energy a top priority of the Department of the Interior and BLM.

Renewable Energy Resources on Public Lands

The BLM has been taking steps to more systematically address development of renewable energy resources since passage of the Energy Policy Act of 2005, which set a goal to approve 10,000 megawatts (MW) of non-hydropower renewable energy on the public lands by 2015. A number of policies and processes are now in place to guide renewable energy development, and programmatic (strategic) plans have been completed for wind and geothermal development, and for energy transmission corridors on public lands. The Administration's efforts will significantly expand these activities and allow BLM to establish a comprehensive program for renewable energy development on BLM lands. Through funding provided by the American Recovery and Reinvestment Act, BLM is investing $41 million to complete the necessary environmental studies and develop regional plans for the siting of future renewable energy projects and transmission facilities on BLM lands. In addition, the FY 2010 Budget includes $16 million for BLM's renewable energy programs, a portion of which will be used to establish dedicated renewable energy permitting offices that will help reduce BLM's backlog of pending applications for wind and solar projects and ensure more timely processing of future applications.

The BLM's completed programmatic plans indicate the public lands hold great potential to provide renewable energy. For example, the geothermal programmatic plan estimates that approximately 50 percent of the geothermal resources in the United States are on Federal lands, and geothermal energy capacity has the potential to increase by as much as 15-20 fold by 2025 (from 1,275 MW to 19,000 MW). Additionally, the wind energy programmatic plan estimated that, by 2025, wind energy capacity on the BLM-managed public lands could increase nearly ten-fold from current levels (from 327 MW to 3,240 MW). Current wind energy development proposals on the public lands could exceed these projections.

Solar energy offers new and significant development potential on public lands. Preliminary data from the work BLM is undertaking in preparing the solar Programmatic Environmental Impact Statement (PEIS) suggest that as much as 29.5 million acres of the public lands in six western states may have utility-scale solar potential. Developing these solar projects on public lands could help achieve the President's goals for the Nation's economic and energy security, and the clean energy it would generate would benefit the environment. However, it could also require significant reallocations of land resources and have local and regional environmental impacts. Depending on the technology employed, solar projects could also require access to significant water supplies in arid regions where supplies are already in high demand.

As noted earlier, the BLM is working diligently to plan for and develop solar energy resources on the public lands in an environmentally responsible manner. The BLM is conducting two concurrent and complementary efforts to accomplish these objectives. First, the BLM is accepting and processing rights-of-way (ROW) applications from industry for solar development projects. This provides opportunities for economic development, stimulates the advancement of solar technologies, and gives both industry and government the practical experience needed to refine the project implementation process. Second, the BLM, in cooperation with the Department of Energy (DOE) is preparing a Solar Energy Development Programmatic Environmental Impact Statement (PEIS). The Solar PEIS is a landscape-scale, strategic plan for siting solar energy projects on the public lands in the six western states (Arizona, California, Colorado, Nevada, New Mexico, and Utah) that have the best

potential for utility-scale solar development. The solar PEIS is designed to help speed the review of individual permit applications by providing the broad-scale cumulative effects analysis that is needed at the project level.

Solar Energy Development Applications—Process & Status

The BLM authorizes solar and wind energy development projects as rights-of-way (ROW) under Title V of the Federal Land Policy and Management Act (FLPMA). Project proponents apply for a ROW grant and pay the BLM's costs to process the application. Applicants are required to submit detailed Plans of Development (PODs) to help the BLM and the public understand the scope of the project and potential resource conflicts before a National Environmental Policy Act (NEPA) review is initiated. In addition, applicants must provide documentation that demonstrates their technical and financial capability to construct the project. Approved projects are subject to bonding to ensure compliance with the terms and conditions of the ROW grant, including land reclamation. ROW holders pay an annual fair market value rent to the United States based on the land's appraised value for commercial purposes.

As of April 1, 2009 the BLM is processing approximately 158 active applications for solar energy development. These applications involve approximately 1.8 million acres of public land and a combined generating capacity of approximately 97,000 MW. An additional 41 applications have been submitted for land already under application; these are considered inactive applications until the initial application is approved, denied, or withdrawn.

The two projects that have made the furthest progress in the approval process are both located in Southern California and are currently undergoing environmental review. The Ivanpah Solar Energy Generating System, proposed by Solar Partners, proposes to utilize 3,900 acres in the Mojave Desert near the town of Primm along the California/Nevada border and have a generating capacity of 400 MW. The Solar Two Project, proposed by Stirling Energy Systems, proposes to utilize 6,500 acres in California's Imperial Valley near El Centro and have an initial generating capacity of 300 MW, with possible expansion to 750 MW. If approved and developed as proposed, the Ivanpah and Solar Two projects would potentially triple the amount of utility-scale solar energy produced in the United States.

The Ivanpah and Solar Two projects illustrate the potential benefits—and resource management challenges—that can result from solar energy development on the public lands. These projects promise state-of-the-art solar technologies and creation of jobs. Their combined anticipated capacity could power more than 400,000 homes and offset more than 1.5 million tons of carbon dioxide emissions per year. However, the projects are also located in desert landscapes that support unique and fragile ecosystems, and these lands are used and appreciated by the public for their diverse resource values.

Siting Challenges for Solar Energy Development

The specific impacts of proposed solar energy development on the landscapes and public lands of the Southwest will be evaluated thoroughly—and transparently—in the environmental analysis conducted for each proposed project. Broad concerns and issues, however, have become fairly clear, and they represent challenges for siting solar energy development, especially in desert regions.

A key issue is that utility-scale solar energy projects generally require exclusive and intensive use of the land on which they are sited. A typical 250-400MW solar energy project is estimated to utilize about 3,000 acres. The land utilized by a solar project is typically graded and fenced, and is essentially allocated to a single use—renewable energy production—for the long term. Because of its land disturbance footprint, the potential effects of proposed solar energy developments on wildlife habitats and sensitive species, such as the threatened desert tortoise, merit special attention and concern.

The potential effects of solar energy development on the desert's scarce water resources and aquatic habitats are also important issues. Some solar energy technologies require relatively greater amounts of water to cool thermal power plant turbines used to convert solar-produced heat into electricity. These "wet-cooled" systems can require 10-15 times the water of "dry-cooled" systems, which cool using forced-air. Other solar technologies, such as photovoltaic systems, do not require water for cooling because they directly convert solar energy into electricity, but do require some water for other purposes.

Because of the region's chronic water scarcity and water allocation issues, some land managers, municipalities, and stakeholders have questioned the use of "wet-cooled" solar systems in the Southwest deserts. Recently, the National Park Service (NPS) and Fish and Wildlife Service (FWS) expressed concerns about the potential

impacts to groundwater and aquatic species from applications for solar development in Nevada's Amargosa Valley, located northwest of Las Vegas. The Amargosa Valley is a closed hydrologic basin and its water use is considered over-allocated by the State of Nevada. The Amargosa Valley is also home to the Devil's Hole pupfish, a listed endangered species, and the Department is concerned that the use of water for solar development could reduce the water table in this basin, harming the pupfish.

The Department of the Interior is committed to developing solar energy resources while protecting the environment. Secretary Salazar does not believe these goals are mutually exclusive. To help achieve this balance in the Amargosa Valley, the BLM is encouraging solar energy applicants to utilize low water or no-water technologies that appear best suited for this ecosystem. And again, the potential environmental effects of each solar energy application will be carefully evaluated, in a transparent public process and in close consultation with affected Federal agencies, to inform decision-making. BLM will also address the effects of public lands solar development on threatened and endangered species and designated critical habitat through section 7 of the Endangered Species Act and will evaluate the potential impacts to Federally-protected lands related to air, sound and light pollution.

In addition to environmental concerns, the large amount of Federally protected land in the Southwest constrains the siting of proposed solar energy development and transmission. The BLM's California Desert District (CDD) offers a good example. The BLM manages 11 million acres in the CDD. However, 3.8 million acres are protected as wilderness, national monuments, or other special designations, and are excluded from solar energy development. Another 2.9 million acres are BLM-designated Areas of Critical Environmental Concern and have restrictions on development. About 1.4 million acres were donated or acquired using Land and Water Conservation Funds and primarily managed for conservation purposes. Many of the remaining 2.9 million acres also encompass important wildlife and plant species, possess scenic values, and provide for recreation, mining, and a wide range of other multiple uses. Site-specific assessments of these other resource values will likely further constrain siting decisions in the CDD and other regions.

Planning for Renewable Energy Transmission

Transmission access and capacity are also major factors that shape siting decisions for solar and other renewable energy development. Lack of adequate transmission capability is a clearly recognized constraint on the Nation's energy delivery system. To address this need, the BLM, in cooperation with the Forest Service and DOE, recently completed the Westwide Energy Corridor Programmatic Environmental Impact Statement process, pursuant to the Energy Policy Act of 2005. As a result of this effort, the BLM designated approximately 5,000 miles of energy transmission corridors on the public lands, out of the total 6,000 miles designated on Federal lands in the 11 contiguous western states. In California, many of these corridors followed those already established by the BLM in its land use plans to minimize impacts. BLM's efforts complement those of FERC, DOE, and others to modernize the nation's transmission grid and expand capacity throughout the country overall.

These energy corridors form the backbone for future transmission planning in the region. However, the process was completed before the transmission linkages needed to support renewable energy could be fully understood and identified. That process is underway now, and the BLM is contributing to renewable energy siting and transmission planning efforts occurring at the state and regional levels.

The State of California, for example, is leading the way by conducting the Renewable Energy Transmission Initiative (RETI) to identify the most appropriate areas and corridors for siting renewable energy development and transmission. The Western Governors' Association (WGA) is also conducting planning to identify and integrate suitable renewable energy development zones and transmission corridors throughout the western states. The BLM will continue to work with the states, WGA, and our interagency colleagues to identify needed transmission linkages, and to review and amend the corridors as necessary to ensure they provide access to renewable energy while minimizing impacts to other important resources.

Solar Energy Development Programmatic EIS

Because solar energy resources are of such profound importance—and potential scale—the BLM recognizes that a comprehensive plan is needed to address siting and transmission challenges, and to guide solar development in an environmentally sensitive and responsible manner. To accomplish this, the BLM and DOE are working jointly, with the FWS as a cooperating agency, in preparing a Solar Energy Development Programmatic Environmental Impact Statement (PEIS). Public scoping

occurred in July 2008, and the Draft PEIS is expected to be available by the end of 2009.

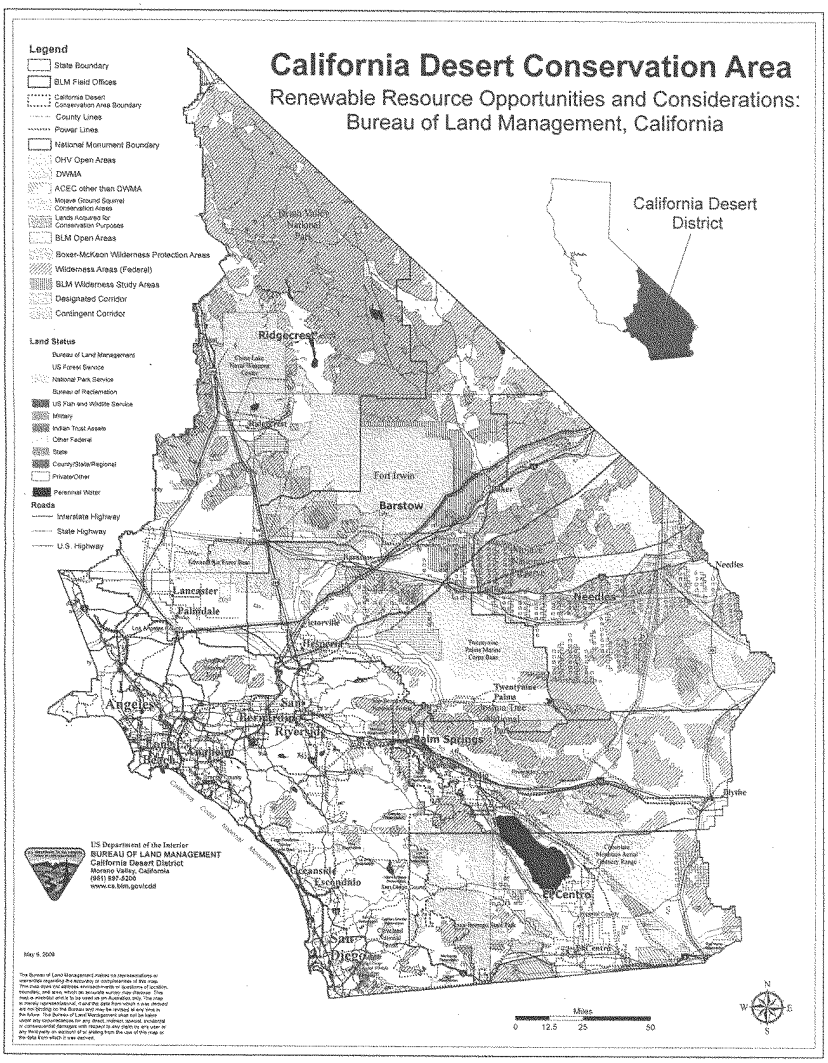
The Solar PEIS is a strategic plan for developing solar energy resources on public lands in six southwestern states that have the potential for utility-scale solar development. The PEIS will identify public lands that are available for and excluded from development. It will also assess the potential landscape-scale environmental impacts of solar energy development, identify best management practices for minimizing manageable impacts, and amend the BLM's land use plans to enable and facilitate solar energy development in specific areas.

The BLM will use preliminary information from California's RETI and the WGA renewable energy planning effort to help identify public lands that would be available for or excluded from development. The BLM expects to analyze an array of alternatives that would describe land open to solar energy development application, and where sufficient information exists, lands where solar energy development would be a priority for the Bureau. Areas lacking sufficient information at this time could require further resource assessment and environmental analysis that would be conducted subsequent to the PEIS.

By identifying appropriate and specific areas for solar development, the PEIS will help focus transmission needs and enable efficient renewable energy corridor planning. The environmental analysis conducted in the PEIS will also help facilitate site-level project assessment and implementation. Overall, the solar PEIS is essential to establishing a balanced solar energy program that can generate abundant clean energy, create jobs, and preserve America's valued natural resources and landscapes.

Conclusion

Mr. Chairman, thank you for the opportunity to discuss the BLM's efforts to plan and provide for solar energy development on the public lands in a way that is sensitive to and sustains our environment. The BLM and the Department of the Interior are committed to working with Congress, the states, Tribes, industry and other stakeholders to thoughtfully address siting and transmission issues, and to design and establish a sound foundation for the Nation's emerging solar energy program. I would be happy to answer any questions.


California Desert Conservation Area
Renewable Resource Opportunities and Considerations:
Bureau of Land Management, California
California Desert District
Legend
State Boundary
BLM Field Offices
California Desert Conservation Area Boundary
County Lines
Power Lines
National Monument Boundary
OHV Open Areas
DWMA
ACEC other than DWMA
Mojave Ground Squirrel Conservation Areas
Lands Acquired for Conservation Purposes
BLM Open Areas
Boxer-McKeon Wilderness Protection Areas
Wilderness Areas (Federal)
BLM Wilderness Study Areas
Designated Corridor
Contingent Corridor
Land Status
Bureau of Land Management
US Forest Service
National Park Service
Bureau of Reclamation
US Fish and Wildlife Service
Military
Indian Trust Assets
Other Federal
State
County/State/Regional
Private/Other
Perennial Water
Roads
Interstate Highway
State Highway
U.S. Highway
Ridgecrest
Fort Irwin
Barstow
Needles
Lancaster
Palmdale
Victorville
Hesperia
Los Angeles
San Bernardino
Riverside
Palm Springs
Twentynine Palms
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BUREAU OF LAND MANAGEMENT
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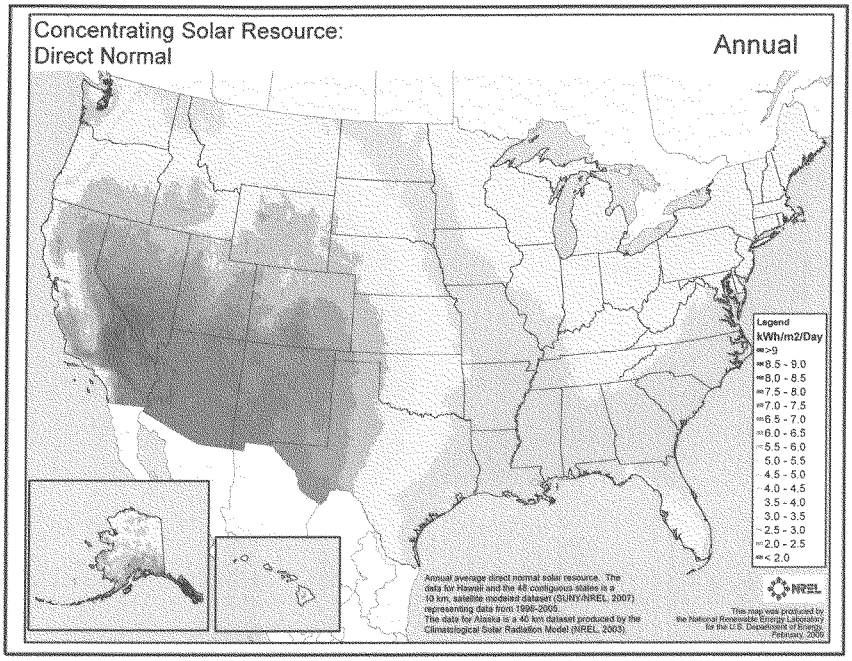
May 9, 2008



Mr. COSTA. Appreciate that, Mr. Abbott. You went a little over there. You won't get a star today.

[Laughter.]

But we look forward to the questions.

Last, but certainly not least, is Mr. Thomas—

Mr. KRETZSCHMAR. Kretzschmar.

Mr. COSTA.—Kretzschmar, who today is testifying on behalf of the United States Army Corps of Engineers. And we look forward to your testimony.

Please, Mr. Kretzschmar.

STATEMENT OF THOMAS M. KRETZSCHMAR, SENIOR PROJECTS MANAGER, U.S. ARMY CORPS OF ENGINEERS

Mr. KRETZSCHMAR. Thank you. Thank you, Mr. Chairman, and members of the Subcommittee. You may have thought you came all the way to the desert and got away from Powerpoint, but I have seen—

Mr. COSTA. Oh. So, I have to turn around to look at the Powerpoint, huh?

Mr. KRETZSCHMAR. I am afraid so, sir.

Mr. COSTA. All right. I have got those eyes behind my head, but—

Mr. KRETZSCHMAR. We will try to hit the ground hard and keep moving. The reason I am here is to talk mostly about the Fort Irwin, California solar energy Enhanced Use Lease project. I am the Program Director—I am sorry, Program Manager for enhance use leasing at the Army Corps of Engineers, Baltimore District. We

manage enhanced use leases across the country. These are essentially long-term ground leases to private sector developers to build and operate a variety of commercial enterprises on non-excess Army lands.

In October of '08, the Secretary of the Army announced a Senior Energy Council, and among those announcements were five pilot projects across the country, one of which is a 500-megawatt solar energy project at Fort Irwin.

Sir, you like maps. This is our map of the solar overlay. We have 24 installations within that solar target area, a number of which are in California.

The location of Fort Irwin has many desirable attributes, including its 300 days of sunlight per year, and the market conditions that are created through the renewable energy portfolio standards. And in terms of the Army's mission, sir, with renewable energy we are looking to also increase our security through self-generated power.

You mentioned visiting Twentynine Palms. There is an overlay. You can see we are about 100 miles north. We would invite you and your constituents to Fort Irwin, sir, at another time and mention that the Garrison provides tours to the public to go into the training areas that are the simulated villages. That is open to the public. Hopefully, soon you will be able to see some solar energy development in that same area.

We actually advertised the enhanced use lease on December 15 for these five sites within Fort Irwin. Fort Irwin is 900,000 acres in size. There are roughly 14,000 acres between these five sites, about 2,000 acres on the Red Lake—or, I am sorry, Red Pass Lake site to your right, about 800 acres at the main gate, and the balance between the three Goldstone sites.

This is a photograph at the Red Lake Pass site, and it was mentioned earlier that water is a critical concern. We do have a well at this location, and that makes solar thermal viable. It is also adjacent to the Los Angeles Department of Water and Power 500 and 287 kV transmission lines. Its topography and its scale make this an ideal site for potential development.

Another look at the boundary where this site is located, and there are the existing power transmission lines.

The main gate site, again, about 800 acres in the northeast corner there. You can see the Garrison itself. This site is adjacent to the Southern California Edison substation where electricity is brought from I-15 to Fort Irwin. So, we say it is about a 42-mile extension cord.

So, our goal is to create redundancy, backup, alternative sources of energy. In the event of a grid failure, Fort Irwin can sustain itself.

This is another ideal site, because if you look, sir, at the right—and ladies, I am sorry—to the right of Fort Irwin's containment area, that black circle is actually its wastewater lagoon. That provides us with another opportunity to create solar thermal generation by the use of treated wastewater.

The Goldstone facility that we mentioned is the deep space listening facility which is within the Fort Irwin boundaries. NASA has partnered with us in support of this solar energy initiative. Es-

sentially, these are buffer areas around the satellite dishes that we don't train in that are ideal for generation.

And we are at the point now, sir, we have already advertised. We are doing proposal reviews. We hope to have a selection in June and begin our environmental permitting process development in 2014.

We have been working with our stakeholders in both the state and Federal government and local utilities toward a positive goal, but we believe we have heard some of the challenges here in terms of the transmission, the timing for permitting. The Army has worked to create a renewable energy working group that will continue on through this process at Fort Irwin.

And all of these slides are available on our website at eul.army.mil.

[The prepared statement of Mr. Kretzschmar follows:]

Statement of Thomas Kretzschmar, Real Estate Division, Baltimore District, Army Corps of Engineers, U.S. Department of the Army

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to testify today to discuss the Department of the Army's solar energy initiatives. My name is Thomas Kretzschmar and I am a real estate professional with the Baltimore District of the U.S. Army Corps of Engineers. I joined the Corps in 2003 and have 20 years' experience on federally funded real estate actions. I also hold a master's degree in real estate from the Johns Hopkins University. The Baltimore District is the Corps' national "Center of Expertise" for Enhanced Use Lease projects and I manage the Fort Irwin project.

This morning I would like to describe for you some of the genesis of the Army's renewable energy programs, its recent senior level initiatives, and the resulting creation of a large scale solar energy generation project at Fort Irwin.

Based on the February 2008 Report of the Defense Science Board Task Force On DoD Energy Strategy—"More Fight—Less Fuel", the Army initiated a six month Energy Security Task Force Tiger Team which on October 7, 2008, resulted in the establishment of an Army Senior Energy Council to serve as a board of directors focusing on Army energy policy, programs and funding to leverage the Army's nationwide energy-conservation efforts.

Enhanced Use Leasing's (EUL) authority is Title 10, United States Code, Section 2667, which was amended to incentivize the Department of Defense's (DoD) use of private sector capital by leveraging leasing of non-excess real or personal property. This authority allows payment from leases to be paid as "in-kind" consideration or cash. The law further allows that at least 50 percent of proceeds deposited will be available for the installation where funds were derived. EUL requires execution of long term (such as terms of 50 years) leases to finance private construction and operation. We must receive at least fair market value for the lease interest.

Among the Senior Energy Council initiatives were five major energy projects including a 500 megawatt solar energy generation development at Fort Irwin, California. The Army's EUL program had been focused on a private sector ground lease-based development for solar electricity generation at Fort Irwin since the summer of 2007. The Army sought quick execution and worked very hard to accomplish site assessments, stakeholder meetings and project approvals.

Within 60 days, the Army EUL team had created a solar development solicitation and advertised its qualification based Notice of Opportunity to Lease (NOL). On March 4, 2009, Fort Irwin and Army EUL hosted an Industry Day at the Garrison for interested developers to hear about and see the development sites. More than 250 people attended the Industry Day. Proposals were received April 17, 2009 and a June 2009 developer selection is scheduled.

The Fort Irwin Solar EUL solicitation offers five sites totaling more than 12,000 acres for renewable electricity generation. These sites are ideally suited for solar generation based on four critical criteria: solar radiation, topography, proximity to transmission, and water availablity. The Mojave Desert "insolation" (solar radiation) is among the best available in the United States. The five sites identified for development have slopes of five percent or less. There are major transmission lines either adjacent to or in relative close proximity to the five sites and Fort Irwin can make

available treated waste water in sufficient quanties to develop thermal solar technologies.

In addition to its market and construction feasibilities, we also analyzed the intended use, to assure the military mission would not be impacted and that environmental standards would not be compromised. The five sites lie in areas not currently used for training. Three of the five sites are buffer areas for the National Aeronautical and Space Administration Goldstone Deep Space Listening facility located within Fort Irwin. NASA and the Army have agreed to work together to advance both agencies' goals and objectives for renewable energy development. The Army and its selected developer will conduct all required environmental analysis to assure compliance with the National Environmental Protection Act (NEPA) and the California Environment Quality Act (CEQA).

The Fort Irwin Solar EUL creates a unique opportunity for the Army to meet its renewable energy goals and enhance its mission. The scale of solar development being contemplated however, dwarfs previous undertakings. And a project of such size does not succeed without challenges. We have sought to identify hurdles with the project conceptualization and advertisement and begin working with the appropriate parties toward resolution.

The Department of Defense and the State of California have in place a Renewable Energy Working Group that addresses regulatory and business issues such as environmental review and permitting timelines along with the planning for additional transmission lines needed to meet the State's renewable energy standards. DoD and the Army will continue to participate in planning initiatives such as the Renewable Energy Transmission Initiative (RETI) and Western Renewable Energy Zone (WREZ) to provide both military mission compatability guidance and as potential renewable energy supply points.

We look forward to working with the State of California, San Bernadino County, the Bureau of Land Management and Congress to ensure a collaboration on this very exciting project. Thank you again for the opportunity to testify today and I will be happy to answer any questions you may have.

Response to questions submitted for the record by Thomas Kretzschmar

Questions from Chairman Jim Costa

QUESTION 1. Mr. Kretzschmar, does an inventory of degraded or previously used lands that would be suitable for siting renewable energy projects exist? If not, how much time and money do you estimate it would take to compile such an inventory, and what would be the best agency to carry this out?

ANSWER: An inventory of Federally owned real property does exist. Executive Order 13327 issued by President Bush on February 4, 2004 established a Federal Real Property Council within the Office of Management and Budget and is comprised of all agency Senior Real Property Officers, the Controller of OMB and the Administrator of GSA. The Executive Order calls for GSA to maintain a single, comprehensive and descriptive database of the real property inventory. The database includes land and buildings and environmental information.

QUESTION 2. Mr. Kretzschmar, what will be the amount of water consumed per Megawatt-hour of electricity generated at the Ft. Irwin solar projects, and what will be the quantity of water consumed annually? If that cannot be answered at this time, what are the ranges of water usage for the applications that you have received?

ANSWER: The Army's Notice of Opportunity to Lease (NOL - http://eul.army.mil/ftirwin/Docs/FinalNOL20Mar09.pdf) for the Fort Irwin Solar EUL development identified two potential water sources. Currently, there is no accurate forecast of the water to be used generating electricity. There were multiple private developer responses received on April 20, 2009 offering multiple technologies and sizes. A developer selection will be completed in June. Water may be necessary in widely varying amounts depending on the technology and scale of generation proposed by the selected developer. We anticipate a two-year Environmental Impact Statement and business case evaluation which will determine water usage.

Despite a lack of actual project specifics, it is possible to estimate water usage given the technologies, land areas offered, and the known water sources. Two basic solar energy generating technology types exist; Solar photovoltaic (PV) and Concentrating solar thermal (CSP). Solar photovoltaic plants convert sunlight (also known as insolation) directly into electricity. Photovoltaic power systems are silent, unobtrusive, and require minimal water for washing. Solar thermal plants consist of two

major subsystems: a collector system that collects solar energy and converts it to heat, and a power block that converts heat energy to electricity. Concentrating solar thermal power plants produce electric power by collecting the sun's energy to generate heat using various mirror or lens configurations. For solar thermal electric systems, the heat is transferred to a turbine or engine for power generation. Concentrating solar thermal projects are large installations that require significant amounts of land, anywhere from 5 to10 acres per MW. Plants can be wet or dry cooled. Wet cooled plants will use significant amounts of water, roughly 750 to 850 gallons per MWh. Dry cooled plants will use much less water, roughly 20 to 45 gallons per MWh, mostly for mirror (or heliostat) washing.

The first Fort Irwin water source is an existing well located along the southeast perimeter at the site named Red Pass Lake. The Red Pass Lake well flow rate is approximately 4,500 gallons per day (gpd), or 1.6 million gallons per year. This is believed to be sufficient to support a dry-cooled solar thermal generating facility of approximately 150 MW. An in-depth hydrology analysis will be required to more accurately measure the resource and to determine any interconnection with the Fort Irwin aquifers, which could adversely affect mission.

The second Fort Irwin water source available for CSP is treated waste water from the Garrison cantonment area. The waste water plant currently treats approximately one million gallons per day. If 350 MW of dry cooled CSP were generated from the remaining acres offered at the four Main Gate and NASA Goldstone sites, the daily water requirement would be approximately 10,500 gallons (3.8 million gallons annually) or 1% of the effluent outflow.

Mr. COSTA. Thank you very much. You went a little bit over, but I liked the slideshow. So, that will get you a good mark.

Why don't we begin with the questions and comments. You are the last witness, and I will, as the Chair, begin. The second-to-the-last slide that you showed, Mr. Kretzschmar, do you want to put that back up? Can you do that?

Mr. KRETZSCHMAR. Yes, sir.

Mr. COSTA. See how good our technology is here. How well is all of that working? We talk about a collaborative process, we talk about consensus. It is nice to put that up there, but the first thought that ran through my mind is, are we meeting the milestones? Is this taking place? I will let you start, and then I see some other people smiling here. We will go to Commissioner Levin.

Mr. KRETZSCHMAR. Yes, sir. We have been working on Fort Irwin for about a year and a half, and I believe that the working group has taken on additional energy, let us say, for lack of a better word, based on some of these larger scale projects that are being contemplated. I think up until this point we hadn't personally been involved, because the Navy has typically been the lead. They are the largest user in the State for electricity. Fort Irwin, the Army, is not quite to the scale that the—

Mr. COSTA. All right. But, I mean, I don't want you to—because my time is limited, too. Is it working or not? I mean, are we meeting the timelines?

Commissioner Levin, do you want to opine?

Ms. LEVIN. Is this on?

Mr. COSTA. Yes, it is on.

Ms. LEVIN. I think that the current processes are working, and by the end of this year we will have identified renewable energy zones where we can really accelerate permitting. We will also have a map that identifies important conservation areas. We will have—

Mr. COSTA. But are you talking about project-specific, or are you talking about the energy zones that Mr. Abbott addressed?

Ms. LEVIN. Well, I think in order to accelerate the permitting of the specific projects we need to have a better framework that allows us to accelerate permitting. But that requires first taking a good science-based public look at where do we accelerate renewable energy products, and where do we conserve resources.

Mr. COSTA. I would like to go back to that later on. But because my time is limited, let us move on here. The discussion of large powerplants or transmission lines and the debate—and this is maybe something both Commissioner Levin and Commissioner Chong I would like to get your thoughts on, versus the distributive model.

My sense is that you have to use all of the resources. What is your sense?

Ms. LEVIN. That is definitely California State policy, that we need it all. Rooftop solar, and other distributed generation is a very important part of our clean renewable energy future. It has a lot of advantages, but it is more expensive. And utility scale generation from solar or wind or geothermal is much cheaper, although it does have larger land use impact.

Mr. COSTA. Is the Commission looking at realistically—I mean, we had some numbers tossed out there, about 90,000 megawatts as a potential. It wasn't clear to me at what timeline that that was looking at, as to what the breakdown between the two.

Ms. LEVIN. I think that the breakdown will be heavily focused on utility scale generation, because you can do so much more so much more quickly and more cheaply.

Mr. COSTA. Yes. Commissioner Chong?

Ms. CHONG. Yes, I would agree with that. I think that it is critically important that we have utility scale projects in addition to the residential solar initiative programs.

Mr. COSTA. Very quickly, you know, you looked at lands that are the absolute best, and we have that great map over there that kind of indicates that. But in Germany we know that they are one of the leaders in the world of—they don't get 300 days of sunshine in Germany. I know, I have been there.

Are we leaving out a lot of degraded lands, brownfields and other lands, where there may be no land use conflicts, but they may be not among the best suited, but they would be good?

Ms. LEVIN. One of the priorities in RETI, and one of the screens, is previously disturbed lands, and that will be, you know, one of the criteria that we will look for in establishing renewable energy zones. In terms of Germany, they have been very successful because they have a feed-in tariff, and California—

Mr. COSTA. They have a feed-in tariff.

Ms. LEVIN. Yes. California is looking at a feed-in tariff for projects up to 20 megawatts.

Mr. COSTA. And I think, you know, notwithstanding my friends with the utility companies, and I understand their concerns, but I think nationwide we are going to have to have some level of providing some incentive for people to develop their own energy.

Quickly, my time is running out, Mr. Abbott, the BLM is planning to use right-of-way for solar projects, which seems odd given the size and the duration of those proposed projects. Do you think competitive leasing is a better way to provide both corridor and

availability? What are the factors, and what areas might be ripe for competitive leasing? Have you given that some thought?

Mr. ABBOTT. That issue has been raised to the Department and to the BLM, and it will be one of the issues addressed in the solar programmatic environmental impact statement, and so it is a suggestion we have heard and have committed to looking at.

Mr. COSTA. All right. I have some other questions. Mr. Abbott, I want to come back to you and to the other witnesses, but my time has expired. So, I will defer to the Ranking Member, the Congresswoman from Wyoming, Congresswoman Lummis.

Ms. LUMMIS. Thank you, Mr. Chairman.

My first question is about these solar energy zones or renewable energy zones. Several of you have addressed that topic. And may I ask you to just expand a little more on how you identify them, what consensus is used to identify them, what agencies are involved, and then how, once they are identified, you get the transmission lines that are needed to serve those areas. Could use some elaboration on those topics. Thank you.

Ms. LEVIN. I will start with RETI, which I think was the first process to try to identify renewable energy zones. It is a stakeholder process that involves all branches of government, environmental groups, renewable energy companies, utilities, the armed services, and it was a process of identifying existing projects or soon-to-be projects—where they are, where their concentrations of economically viable renewable energy projects are—and overlaying those with sensitive environmental areas, either areas already protected by law or areas that should be protected for a variety of reasons. And there were very specific science-based criteria for that. It also did look at degraded lands and where we could encourage development to occur.

We have completed the first phase of that, which is an initial identification of renewable energy zones. We are in the second phase, which is to refine those based on additional wildlife and other science criteria. And then, we will establish them, along with our Federal partners, as areas where we will accelerate renewable energy development.

The third phase of RETI is planning the transmission corridors needed to serve those areas. So, again, with the same factors of where is there already disturbed land or existing rights-of-way, what are the least environmental, lowest cost transmission lines to serve those renewable energy zones. And I will let Mr. Abbott speak to the solar energy zones.

Mr. ABBOTT. For California BLM, we have taken the work—the informative work that RETI has produced and looked at those proposed or tentative renewable energy zones that are largely encompassed by public land. And we now are going to address in the programmatic solar environmental impact statement that we are working on whether or not those are appropriate to be designated as Federal solar zones.

And through that EIS process we will be able to hopefully further engage the public in terms of talking about those Federal sites in terms of, will they be a counterpart to the work that RETI does for the private land zones that may be identified.

Ms. CHONG. Just the last thing I would add is that typically a transmission line takes about seven years to permit in California. That is average. So, we hope to finish the RETI process in a three-year timeframe, which is a very aggressive timeframe. And then, once we have these transmission zones established and the lines where we think are the most environmentally sensitive and the most sensible, then they can immediately apply for a specific project.

And because all of the stakeholders have been involved in establishing the zones through the RETI process, we anticipate that it will accelerate the permitting for those, so that it will be finished on a faster timeframe than the normal seven years.

Mr. COSTA. On that point, would the gentlewoman yield?

Ms. LUMMIS. Yes, Mr. Chairman.

Mr. COSTA. I will make sure you get the extra time.

On the corridors, because I think they are essential to making this all work, have we identified and prioritized which corridors need to take place to enhance these solar—whether they be solar voltaic or solar thermal—to concur with the other process that is taking place, or——

Ms. CHONG. We are all—yes.

Mr. COSTA. Because, as you know, under the stimulus package we have given the Energy Department a whole host of months to upgrade the existing corridor grades and to make them better.

Ms. CHONG. Yes. The whole idea is that we are all working together. Things are moving swiftly, obviously, because of the new focus on clean energy and the upgrade to the energy system. But, yes, we are all seeking to work together, and that is the kumbaya of today, I would say.

Mr. COSTA. But you have prioritized in this——

Ms. CHONG. Yes.

Mr. COSTA.—particular corridor with——

Ms. CHONG. Renewable energy is highly prioritized, yes.

Mr. COSTA. So, in terms of which corridors, I could go to you and you could tell them, one, two, three, in terms of which of the corridors are prioritized.

Ms. CHONG. Correct. One of the focuses of RETI has been prioritizing what is near term, truly. And one of the things we have done is we have shown which of the zones are the most promising for renewable energy. So, for example, Mojave, Imperial Valley, Tehachapi, those are the highest rank in California. And we are prioritizing those transmission lines to go first.

Mr. COSTA. I yield back to the gentlewoman. She has two minutes.

Ms. LUMMIS. Well, thank you, Mr. Chairman. A followup question for Commissioner Chong. How do you mitigate for the litigation that occurs in the permitting process for transmission lines that you can't control the extent to which that disrupts your desired three-year timeline?

Ms. CHONG. No. You can't control for that, but we have reached out in the RETI process to environmental groups, land use groups, tribes, to ensure that they are part of the process. And our hope is that by making them part of the process, we have considered their concerns, their needs, and try to work around those sensitive

areas, such that when we get down to an actual application for a specific project we will be avoiding those most sensitive areas.

Ms. LUMMIS. Thanks, Commissioner. That is a great approach.

For our two gentlemen, a question about water utilization and solar. How are you addressing those issues in your various capacities?

Mr. ABBOTT. Well, the BLM is asking applicants for projects to consider looking at low water use technologies and identifying that that will clearly be an issue that will be scrutinized through the environmental review process.

Mr. KRETZSCHMAR. I mean, at Fort Irwin and other projects that we are working around the country for the Army, water is a critical issue. At Fort Irwin, we happen to have a million gallons a day of treated effluent. Now, that is not guaranteed indefinitely.

They are sitting on a finite resource. We understand that. But for us, because ours is a competitive process, it gives our developers a foothold. They may not be able to develop 14,000 acres on day one, but from a competitive standpoint it allows them to create the utility scale project that can then over time perhaps enjoy better technologies, increased transmission, and make our projects larger and better overall.

Ms. LUMMIS. Thank you. Mr. Chairman, just a comment also. I was so pleased with Mr. Ferguson's testimony about the incentives that are provided here locally for people who engage in efficiencies and conservation efforts. And I want to applaud this community, and I look forward to visiting with Representative Bono Mack on the Floor of the House tomorrow between votes about how those incentives might be used effectively elsewhere in the nation.

Thank you.

Mr. COSTA. Good. Well, that is a nice segue. The colleague who has been so gracious in helping this hearing together, Congresswoman Mary Bono Mack, for five minutes.

Mrs. BONO MACK. I thank the Chairman. And I just want to say that the difference between an official hearing such as this is crowd involvement and feedback. And this really is to get experts on the record, and I think you have all done a remarkable job. But it is to hear from them and get it on the record. And it is our job as representatives, though, to work directly with our constituents to address their concerns. And for those of you here I plan to continue to do that.

And we hear a lot from the panelists today about transparency, but to me transparency, as long as that is not jamming stuff down on my constituents, and I hope what you mean is public involvement, and I have learned through the years that if you bring the public to the table and give them the problems, generally they come up with pretty great answers.

So, I encourage all of you to make sure that not only is it transparent but it is open to other ideas and to people expressing their concerns to you, because often when you draw lines in the sand you can't get beyond them. So, I am here to offer to all of you that I can get conduit for you to my constituents to make sure that their voices are heard as well.

But my first question is for Mr. Abbott. The Energy Policy Act of 2005 set a goal for the BLM to provide 10,000 megawatts of re-

newable energy on the public lands by 2015. Now, that time is flying by. So, given the state of the situation, do you think we will meet that goal? And how many megawatts have been approved thus far on newly approved non-solar projects?

Mr. ABBOTT. I am confident that the Department and the Bureau is going to continue to do everything possible to meet that goal. In addition to the programmatic solar environmental impact statement, we have completed a programmatic wind environmental impact statement and a programmatic geothermal environmental impact statement.

Those suite of three westwide studies will be of major assistance in terms of us identifying and prioritizing where those resources are most ripe for development, and also they will serve as the foundation to help us expedite application processes when they come forward.

Unfortunately, I don't have an answer to your question in terms of how much has been permitted since the passage of the Energy Policy Act. But if you would like, I can get that information and forward it to you and the Committee.

Mrs. BONO MACK. Thank you. That would be very helpful. So, you know, there are many concerns with how we provide transmission capability, as we have heard from all of the testimony. Will the Bureau be working more broadly with other agencies within the Department or with other cabinet agencies where existing transmission may need to be addressed near a military base, tribal lands, or other Federal lands?

Mr. ABBOTT. I believe you will see the Department of the Interior continue to cooperate with the Department of Energy, the Federal Energy Regulatory Commission, and a number of other cabinet agencies that are addressing the Administration's priority in terms of ensuring that we have transmission infrastructure that serves not only renewable energy but energy security for the nation.

Mrs. BONO MACK. All right. Thank you. And, you know, last, just sort of stream of conscious question up here, I wondered to Commissioner Levin, I guess because you have spoken most directly about the maps, have you all looked at the Salton Sea area specifically? You talk about disturbed land. We really have been trying to move forward, and I welcome the Army Corps to the discussion. I have been working with the L.A. office extensively to try to get you guys involved with the Army Corps.

But as you look at solutions for the Salton Sea, there seems to be absolutely no question that it would be prime land, yet I don't see it highlighted with a big asterisk and star as a place you guys are looking. Can you tell me how much you have looked at that area—especially given that the water will recede, that there is water that is there, and that there will be playa areas and exposed shoreline as well?

Ms. LEVIN. I have to tell you, before coming to the Energy Commission, I worked for National Audubon Society on restoration of the Salton Sea.

Mrs. BONO MACK. Thank you for your work on that.

Ms. LEVIN. Well, thank you especially. As Commissioner Chong said, one of the most important, one of the largest renewable energy zones that we have identified in the RETI process is in Im-

perial County, and the geothermal resource there is phenomenal as is the wind and solar resource in the larger area around the sea. I don't know that we have looked at the seabed itself as potential, but I think that as part of the restoration process, once it is determined where the sea will and won't be in the future, that will be an important question.

Representing Audubon, I always pushed for full utilization of the geothermal potential there as a really critical resource for California.

Mrs. BONO MACK. We are very proud of the geothermal on the south, which is actually not in this Congressional District, but through the Pass on to the windmills and this solar. This District really is willing to do its utmost to move renewables forward.

But I would ask if you guys could look at—you know, maybe talk to the resources people and DWR and see, as their plan evolves, or if you can bring a different eye to it, because the plan that came forward never had any discussion about renewable potential other than geothermal. And it seems that maybe some bright minds looking at this again, there is a lot of talk about exposed playa, and then fears about dust and airborne pollutants, and perhaps you guys looking at that one more time could help us move forward.

So, I know I have gone past my time. Thank you, Mr. Chairman. I yield back.

Mr. COSTA. Thank you very much, and we are in your home, so we are a little flexible.

Mrs. BONO MACK. I am just trying to give you——

Mr. COSTA. I have had this conversation with you on the Salton Sea before. It goes back to our water days. It is a big challenge, and I appreciate your bringing that up.

We have an opportunity here to do a second round, and I would like to do that. So, that means we each get another five minutes.

Commissioner Chong and Commissioner Levin, we talked about this whole collaborative effort, the transparency and all of that. I am trying to get a better understanding of how this renewable energy effort, the RETI process, differs from the Governors—Western Governors' renewable energy zone process, and the Section 368 process that the Bureau of Land Management I guess is the lead in. I mean, how are all of these coming together? Do they compliment each other, or are they working in conflict with one another?

Ms. CHONG. Well, the RETI process involves just California, of course, and it is quite far along. As I mentioned, we are in Phase 2, and we are pushing along to finish next year. The Western Governors' Association process——

Mr. COSTA. Next year when?

Ms. CHONG. End of next year.

Mr. COSTA. OK.

Ms. CHONG. And that is—we are on track, working very hard. The Western Governors' Association is on a different schedule, but it, of course, involves numerous states, all on the western side.

Mr. COSTA. We noticed in the past that some of these transmission issues, as you know, in the PUC have not worked out so well between states, where we have had our differences between Arizona and California.

Ms. CHONG. Yes, we have.

Mr. COSTA. So, having the Western Governors work together on this I think is important.

Ms. CHONG. It is, because the leadership on transmission certainly flows from the top. So, to have the dialogue occurring at the Governors' level has been very helpful.

So, for example, we would expect that they are going to be concluding with some renewable transmission zones at the end of their process, and we are collaborating with that process closely through our Governor's office here in California to ensure that their efforts and the maps that the RETI will produce hopefully will synch up. And I think overall to have that high level of leadership occurring at the Governor's level is very helpful.

Mr. COSTA. OK. On a segue to that, as it relates to the process that is California, is the BLM's efforts helpful as it relates to the 368 transmission corridors? Because, again, I am very concerned about these transmission corridors. Is it enough just to update existing corridors? Or does the process need to start over again? Should we have a bigger emphasis on renewables?

I mean, the approval that I think you cited in your testimony, or regarding the San Diego corridor, I want to make sure that there is enough capacity in these corridors to take in this robust renewable portfolio that we are trying to develop that will include solar.

Ms. CHONG. When we are looking at the transmission lines that we are permitting at the PUC, we certainly are looking at all of the renewable energy that we think will flow through that line, regardless of whether it is just for that utility or not. So, we do consider everything that might flow through it, including from other states. We do see renewable energy coming in from other states besides California to serve Southern California.

Mr. COSTA. Is BLM's process helpful?

Ms. CHONG. Yes, I would think it is going to be helpful. We are, obviously, pushing hard to get those permits through faster for BLM on behalf of our utilities, so that we can get faster to the end.

Mr. COSTA. Commissioner Levin, do you think a Federal renewable portfolio standard would be beneficial to California's efforts to meet our own renewable energy goals?

Ms. LEVIN. I don't know if it will be helpful to California to meet our own renewable energy goals. I hope that it doesn't actually impede our meeting our renewable energy goals, or preempt in any way California's very aggressive renewable electricity goal. But I do think it is very important for the country as a whole to have a renewable electricity goal.

Mr. COSTA. OK. Mr. Kretzschmar, at Fort Irwin, the Army's proposal there, I want to encourage you, want to be supportive, want to be helpful. I think it is what we need to do with all of our military facilities. What is the maximum electrical usage at Fort Irwin?

Mr. KRETZSCHMAR. Sir, right now Fort Irwin uses approximately 25 megawatts.

Mr. COSTA. OK.

Mr. KRETZSCHMAR. It is expected to grow over the next seven to——

Mr. COSTA. So, you would have the capacity to develop like they showed us yesterday at Twentynine Palms, more energy than you would consume.

Mr. KRETZSCHMAR. Yes, sir.

Mr. COSTA. And your intent is to sell that back to the grid?

Mr. KRETZSCHMAR. The private sector developer that is selected for this project will sell the majority of it back to the grid.

Mr. COSTA. Has the Army conducted throughout a department-wide review of all of its facilities for solar potential? And if you haven't, will you be doing that in the future?

Mr. KRETZSCHMAR. Sir, we have identified those installations, not just for solar but for wind, biomass, geothermal, and they are being evaluated. Enhanced use leasing is only one of the tools that the Army is using in its Army Security Council.

Mr. COSTA. And you are probably looking at—and, you know, actually it dawns on me I asked about the distributive model versus the utility larger scale project. And what we saw yesterday at Twentynine Palms was both. On their shade areas on base for their equipment they had the solar panels on top of them, as we have at my alma mater at Fresno State. We have done 10 acres of parking where we have solar that now provides over 20 percent of the energy for the Fresno State campus.

But they also have a solar farm. And you are doing both?

Mr. KRETZSCHMAR. Yes, sir, we are. In fact, there is a small wind project being competed right now at Fort Irwin, as well as a proposal for rooftop solar. And one of our proposals that came back through this solicitation includes electric-powered vehicles. And not only are they sort of self-sustaining, they also during downtimes generate electricity back to the installation. So, it is a moving rooftop, so to speak.

Mr. COSTA. My time has expired, and I don't want to get in a bad way here with my colleagues. So, I will defer to my colleague, the Congresswoman from Wyoming, for five minutes.

Ms. LUMMIS. Thank you, Mr. Chairman.

Again, for Commissioner Chong, in discussing transmission corridors, has there been an emphasis on trying to locate them on existing road rights-of-way? And how are those discussions going?

Ms. CHONG. It is not atypical for the utility to propose something in an existing right-of-way, because it is the easiest way to find a transmission line. However, many of these existing transmission lines need to be upgraded, and so that might mean, for example, a taller tower, more voltage going through them.

And so the residents that live alongside them object just as strongly to these upgraded transmission lines as a new one. So, they do make the efforts to go into current right-of-ways first, but it is not without problems.

Ms. LUMMIS. Commissioner Levin, you had mentioned in your testimony that you requested that agencies be given adequate resources to fulfill their needs. Can you elaborate on that a little bit? What do you see as constraining the ability of Federal agencies to assist with the goals of the State of California?

Ms. LEVIN. Well, probably Mr. Abbott and the gentleman from Fish and Wildlife Service can speak more specifically. But in general terms——

Mr. COSTA. A little closer into the mic.

Ms. LEVIN. I am sorry. I think that Mr. Abbott and the gentleman from Fish and Wildlife Service can probably provide more specifics. But in general, I would say it is a combination of increased staff. I mean, we are seeing tripling and quadrupling of permit applications, and we need to accelerate them faster.

I think particularly for Fish and Wildlife Service, like the State Department of Fish and Game, they haven't had the staff to look proactively, to participate in these long-term, you know, very labor-intensive planning efforts, as well as permitting the applications quickly. I think I will hand it over to Mr. Abbott and the gentleman from Fish and Wildlife Service.

Actually, the one other area I think that would be helpful is we have begun to identify some changes potentially in Federal law that would provide more flexibility and allow the agencies to streamline the process more. And I think over the coming months we hope to finalize those and perhaps come to Members of Congress. But I will let Mr. Abbott take over from there.

Mr. ABBOTT. Secretary Salazar has issued in his order——

Mr. COSTA. Raise the mic up, a little closer into the mic there. There you go.

Mr. ABBOTT. Secretary Salazar, in his renewable energy order, also reaffirmed the establishment of renewable energy coordination offices in five of the western states, and we are now being—received the funding necessary to staff those offices.

We have also had an ongoing dialogue with the staff at the California Energy Commission, California Department of Fish and Game, U.S. Fish and Wildlife Service, to talk about how the various entities who are involved in the permitting process can share resources most effectively. And we have started to make some progress, and we intend to continue to talk about all of the efficiencies that we can find between the various state and energy offices that are involved in reviewing the permit applications to achieve streamlining and effectiveness.

Ms. LUMMIS. And, Mr. Chairman, a general question. Wind or solar, if you had to choose one or the other?

Ms. LEVIN. Both. We absolutely need to do both.

[Laughter.]

No. I mean, if we are looking at an 80 to 90 percent reduction in global warming emissions, or even a 33 percent renewable portfolio standard in California, it is going to require a lot of everything, whether it is distributed, utility scale, all resource. They each have impacts, and they each have advantages. And so I don't think we want to take anything off the table now.

Ms. CHONG. I would like to go on record to say ditto. And the reason is we have extremely aggressive targets here in California. And for us to get there, we need everything. So, we are trying to rank them. However, having said that, we have to do it all. And I would include the California solar initiative, which is solar roofs on residential even in that category, because every little bit helps.

Mr. COSTA. Yes. And something my colleague is not aware of, but Mary and I—both Southern California, the Los Angeles Basin, and the San Joaquin Valley where I live and I represent, are both containment areas. And we are under sanction under the

Environmental Protection Agency, because we don't meet air quality standards. And so all of the management tools in our toolbox—and, of course, part of that bad air creeps here into the desert as well. So, all of this is critical to reach a separate goal, which is to clean up the air in California.

Ms. LUMMIS. Mr. Abbott, I might ask—thank you for that by the way. This is such a magnificent State. And when I stand in places where I can see air pollution that is caused by cars, or whatever, I know that we are missing part of its magnificence. So, thank you all for your efforts to clean up California so we can all enjoy your magnificent scenery.

Mr. Abbott, same question to you. With regard specifically to BLM lands, is one or the other less intrusive or difficult to deal with in regard to all of the multiple resources you are trying to manage, as between wind and solar?

Mr. ABBOTT. Wind, solar, and geothermal all clearly have different footprints and occupy the land differently. But I would agree with both of the members on the panel here that we need to consider all, as Mr. Ferguson indicated, as well as how conservation will also play into the role. And I think by considering all we can I think allocate and make those informed tradeoffs that we need to make in terms of where we are going to place renewable resource development versus where we will focus on conservation objectives.

Ms. LUMMIS. Thank you.

Mr. COSTA. Thank you. We are going to—because of time circumstances, even though I would like to go for a third round with the panel, go to the next panel. And Congresswoman Bono Mack has been gracious to save her five minutes for the next, because Congresswoman Lummis and one of our consultants have to catch a plane. So, we want to get into the next panel for the next hour before they have to depart.

So, thank you. Mr. Abbott, I have 21 pages of questions that I will submit to you.

[Laughter.]

Mr. ABBOTT. I would be delighted.

Mr. COSTA. Seriously, I do have some additional questions that I will submit to all five of the panelists, even Mr. Ferguson, and we would like within a timely manner, within 10 days, for you to respond back to those questions. And I suspect my colleagues probably have written questions that they may want to submit to you as well.

So, without further ado, let us have our second panel. And we will go from there.

Good job, Marcie. You are quick. You left one over here. Oh. Well, you only have four in this one. I forgot.

Mr. COSTA. In our first panel, ladies and gentlemen, we had the public agencies, both at the state and Federal level, as well as, in the case of Mr. Kretzschmar, the Army testify as to what the Department of Defense is doing to become much more energy aware and efficient.

The second panel is a reflection of the perspective from the private sector, and as well as from organizations like the Sierra Club

that give a different take as to the role of renewable energies. Of course, our focus here today is on solar.

So, our first witness is Mr. Steven Malnight. Did I pronounce that right? And he is the Vice President of the Renewable Energy for Pacific Gas and Electric.

Our next witness is Mr. Bill Corcoran, not Bob Corcoran—you can call me Bill, you can call me Bob. I get called a lot of things.

[Laughter.]

But he is very ably testifying in replacement of Carl Zichella, on behalf of the Sierra Club, who has the flu, and we told him not to come here, please.

[Laughter.]

But we appreciate, Bill, your willing to pinch hit for him on behalf of Carl.

Our third witness is Ms. Katherine Gensler, who represents Solar Energy Industries Association. It is an umbrella organization that represents solar energies, not only in California but around the country.

And our last, but certainly not least, witness is Michael Niggli. Did I pronounce that correctly? Who is the Chief Operating Officer for Sempra Utilities.

With that acknowledgement, let us—same rules for the second panel as the first panel. You have that little box there. It has three lights—green, yellow, and red. And you have kind of got a sense on how I do it.

So, anyway, without further ado, Mr. Steven Malnight, would you please begin your testimony? You have five minutes.

You need to speak a little—it is more of a direct mic. You need to——

[Laughter.]

There we go. That is much better. I know we have energy here.

STATEMENT OF STEVEN MALNIGHT, VICE PRESIDENT OF RENEWABLE ENERGY, PACIFIC GAS AND ELECTRIC COMPANY

Mr. MALNIGHT. Yes, I think so. I usually have a loud voice, too.

As PG&E's Vice President of Renewable Energy, I oversee our renewable energy business initiatives, and thank the leadership of this Subcommittee for holding this field hearing to examine the current state of solar energy development.

The Federal Government plays a vital role in expanding the development of solar energy, including policies related to Federal lands that can help or hinder renewable energy expansion. Important investments to support expanding renewable energy have been made, including financial and program support in the economic recovery package, but there is definitely an opportunity to do more.

Before going further, let me give you a quick overview of PG&E's support and development of solar and other renewable resources. We probably deliver some of the nation's cleanest energy to our customers. On average, approximately half of the electricity we deliver comes from sources that are either renewable or emit no greenhouse gases. But there are challenges to fully realizing the potential of these clean renewable domestic energy resources.

As a load serving entity subject to meeting California's RPS standard, which we have discussed, our perspective is primarily

driven by our role as one of the nation's largest purchasers of renewable energy through power purchase agreements. Since 2002, PG&E has signed more than 40 contracts with existing and new facilities that use or plan to use wind, geothermal, biogas, biomass, and solar as their fuel source. Solar is an especially attractive renewable——

Mr. COSTA. For a total of how many megawatts?

Mr. MALNIGHT. You know, actually I don't have that offhand. I can——

Mr. COSTA. Get that to us.

Mr. MALNIGHT. I can get that to you.

Solar is an especially attractive renewable power source, because it is available when the energy is needed most, in the middle of the day and peak times during the summer.

As many of these projects that we have contracted with face challenges, particularly with tight credit markets, and in order to help assure that we will have the renewable energy projects needed to meet our California RPS obligations, we have also recently been exploring development and ownership of a potential 750 megawatt solar site near Cadiz in San Bernardino County.

I want to highlight two significant challenges that we face in bringing renewable resources online quickly. The first is a lack of transmission lines, as we have discussed, where the renewable resources are located. Across the west, thousands of miles of transmission lines will be needed to significantly expand renewable energy production. And it would certainly be no exaggeration to say that without that increased transmission capability we will not get the full benefit of renewable resources.

One way to facilitate that added transmission would be through better coordination among agencies. In addition to better coordination, streamlining the reviews required by state and Federal agencies to remove unnecessary overlap and duplicative requirements can greatly enhance the development of transmission lines needed to link renewables to the grid.

Another set of challenges relates to the permitting of the renewable projects themselves. For the vast majority of current proposed projects, significant coordination is required between Federal and state agencies. We believe that it is possible to satisfy all requirements without duplicative efforts and without compromising environmental goals, if Federal and state agencies could rely on a jointly prepared environmental assessment.

To facilitate this coordination, one agency can be appointed as the lead agency for each environmental topic area, to play a coordinating role. At PG&E, we are working with policymakers, regulators, and relevant stakeholders to help address these challenges. We strongly support Secretary Salazar's recent announcement to open four renewable energy coordination offices, with small urban renewable energy teams in other western states, to expedite the application processing, reviews, and permitting of renewable energy projects.

In addition, California's utilities have been working closely with state and Federal agencies on the RETI initiative, which we have discussed earlier in the first panel.

Other activities are centered on streamlining agency permitting activities. Governor Schwarzenegger's Executive Order, which we discussed earlier, is a key transition there to help advance California's transition to a clean energy economy.

This coordinated approach is expected to significantly reduce the time and expense for delivering renewable energy on Federally owned land, including the priority Mojave and California Desert regions. We acknowledge the potential tensions between important environmental and conservation needs and state and national imperatives to decarbonize energy sources in light of climate change. But we remain confident that policymakers can reconcile these tensions and meet both of these very important objectives.

The Federal Government is very well positioned to help bring greater clarity to this process with sound policies.

We appreciate the Subcommittee's interest in these vital issues, and look forward to working with you and other policymakers and stakeholders on the journey to find this consensus.

On behalf of PG&E, I would like to thank you for the opportunity to appear here today, and look forward to answering your questions.

Thank you.

[The prepared statement of Mr. Malnight follows:]

Statement of Steven Malnight, Vice President, Renewable Energy, Pacific Gas & Electric Company

Chairman Costa, Ranking Member Lamborn, and Members of the Subcommittee, my name is Steve Malnight. I am very pleased to appear before you this morning on behalf of Pacific Gas and Electric Company to provide an overview of some of PG&E's activities relative to solar energy and to offer some thoughts on this important subject. As PG&E's Vice President of Renewable Energy, I oversee our renewable energy business initiatives and thank the leadership of this Subcommittee for holding this field hearing to examine the current state of solar energy development.

Investments in renewable resources, including solar resources, create jobs, reduce air pollution and greenhouse gas emissions, and move us toward a low-carbon economy in California and across the nation. Vitally important is the support and role of the federal government in expanding the development of solar energy, including policies related to federal lands that can help or hinder renewable energy expansion.

The American Recovery and Reinvestment Act of 2009 (ARRA or Economic Stimulus Package) has provided a foundation of support for the development of solar and other renewable energy resources in a time of economic uncertainty. The renewables industry has benefitted from the certainty provided by these longer-term, critical extensions and modifications of investment and production tax credits. The grants and loan guarantees are also expected to assist with financing of solar energy projects. Development of these projects can help invigorate our economy and support a new green energy paradigm.

We are also encouraged by the Department of Interior's (DOI) investment of $41 million from the economic recovery package to facilitate large-scale production of renewables on Bureau of Land Management (BLM) land. But more progress needs to be made to ensure that federal land management policies are respectful of the environment yet supportive of state and, ultimately federal, RPS programs. Development of such policies could result in streamlined siting procedures that promote solar development and lead to the delivery of more renewable energy to PG&E's customers.

Overview of PG&E Projects

Pacific Gas and Electric Company, headquartered in San Francisco, California, is one of the largest utility companies in the United States. The company provides natural gas and electric power to approximately 15 million people throughout a 70,000-square-mile service area in northern and central California. PG&E proudly delivers some of the nation's cleanest energy to our customers. On average, approximately half of the electricity we deliver to customers comes from sources that are either renewable and/or emit no greenhouse gases. In 2008, approximately 12% percent of

our electric delivery mix was from California-eligible renewable resources. As defined in California Senate Bill 1078, which created California's renewable portfolio standard, an eligible renewable resource includes geothermal facilities, hydroelectric facilities with a capacity rating of 30 MW or less, biomass, biogas, biodiesel, fuel cells using renewable fuel, selected municipal solid waste facilities, solar facilities, wind facilities, as well as ocean wave, ocean thermal, and tidal current technologies.

In 2009, PG&E has forecasted 15% of its energy deliveries to customers will come from eligible renewables, another 16% from large hydroelectric resources that are not eligible for the state's RPS, and 20% from nuclear energy, which has zero carbon emissions.

PG&E is actively pursuing renewable generation resources on behalf of our customers. Renewable energy is what our customers consistently tell us they want; it furthers our efforts to meet the California renewable portfolio standard, which requires that 20 percent of our electric power be derived from renewable energy sources by 2010, a policy goal that PG&E strongly supports, and it allows us to better manage our future cost risk, on behalf of customers and shareholders, by taking volatile fuel prices out of the cost equation for this portion of our generation.

Since 2002, PG&E has signed more than 40 contracts with existing and new facilities that use or plan to use wind, geothermal, biogas, biomass, and solar as their fuel source. Solar energy is an especially attractive renewable power source for because it is available when power is needed most in California—during the peak midday summer period. PG&E's portfolio includes both solar photovoltaic and solar thermal technologies. Since early 2008, PG&E has entered into five solar contracts, three using solar PV technology and two using solar thermal (or concentrated solar power) technologies. One of the PV facilities, Sempra's El Dorado facility in Boulder City, Colorado, has achieved commercial operation, while the other solar facilities are still being developed.

Technological innovation and incorporating "learning curve" benefits are expected to reduce the cost of solar technologies over the next few years, leading to higher levels of solar development. For example, a study prepared by the National Renewable Energy Laboratory (NREL) on the potential for concentrated solar power, or CSP, in California and the rest of the Southwest U.S. indicated that CSP in California could produce upwards of seven times the energy needed to serve the state. NREL also suggests that costs for CSP technologies could decline significantly, from approximately 16 cents per kilowatt-hour on average today, to approximately 8 cents per kilowatt-hour in 2015. The halving of the cost of this energy in seven years is premised on an assumption that at least 4,000 MW of CSP will be built by then—not just contracted for—to achieve "learning curve" benefits. In summary, getting the facilities built is a crucial element of reducing costs in the long run.

We are also impressed by the progress being made in reducing the cost of photovoltaic (PV) technology and look forward to a healthy competition between CSP and utility-scale photovoltaics to meet the peak electric needs of California customers. We expect the competition between the two solar technologies will help our customers over time by bringing the cost overall of solar energy down.

There are challenges to fully realizing the potential of these clean, renewable, domestic energy resources. As a load-serving entity subject to meeting California's RPS requirements, our perspective is primarily driven by our role as one of the nation's largest purchasers of renewable power through power purchase agreements. In light of the financial crisis and resulting credit freeze—and in order to help assure that we will have the renewable energy projects needed to meet our California RPS obligations—we have also recently been exploring development of a potential 750 MW solar site near Cadiz, in San Bernardino County.

We acknowledge the potential tension between important environmental and conservation needs and state and national imperatives to decarbonize energy sources in light of climate change, but we remain confident that, through hearings such as this, policy makers can reconcile those tensions and meet both important objectives.

Given the amount of overlap with federal lands and agencies for projects in the West, it remains critical that efforts continue to address the following areas:

A. Transmission

A significant challenge we face in bringing renewable energy resources online faster is the lack of transmission lines to the areas where the renewable resources are located. In California, for example, most large-scale concentrated solar power generating facilities are sited in remote desert locations, far away from the areas where the electricity is needed most. Across the West, thousands of miles of transmission lines will be needed to significantly expand renewable energy production, including paths on or around Federal lands. It would be no exaggeration to say that

only with increased transmission capability can the benefits of renewable resources be fully realized.

One way to facilitate added transmission would be through better coordination among agencies. In addition to better coordination, streamlining the reviews required by state and federal agencies to remove unnecessary overlap or duplicative requirements could greatly enhance the development of transmission lines needed to link renewable energy resources to the grid (and hence, consumers). Carefully-crafted streamlining would not have to come at the expense of protecting critical land, water, and wildlife resources.

B. Project Permitting

Another set of challenges relate to permitting the renewable energy projects themselves. It is helpful that the Subcommittee has asked a representative of the Solar Energy Industries Association (SEIA) to testify regarding those challenges. From our perspective as a renewable energy purchaser, it is worth noting that many of the applications for permits for renewable development are located within the California Desert Region and involve the use of federally managed land. Those that do not involve development on federally-managed land often include a transmission intertie that must cross federally managed land. Adding complexity, in many cases, development in the desert may involve lands that are home to federally listed species and/or habitat. For these reasons, in the vast majority of currently proposed projects, coordination is required between among federal agencies and between federal and state agencies.

We believe that it is possible to satisfy all requirements without duplicating efforts and without compromising environmental goals, if federal and state agencies could rely on a jointly prepared environmental assessment One of the relevant agencies could be appointed as the lead agency; for example, since BLM is most familiar with the land it manages, it would conduct the visual analysis. Other agencies with relevant expertise in other areas would be placed in a coordinating role.

PG&E strongly supports Secretary Salazar's recent announcement to open four Renewable Energy Coordination Offices with smaller renewable energy teams in other western states. The stated intent to "cut red tape by expediting applications, processing, reviews and permitting of renewable energy projects" is a positive step forward for the challenges solar development faces and builds off the ongoing work by BLM to develop a comprehensive approach to solar projects in the Mojave Desert region and the West.

C. Moving Forward

At PG&E, we are working with policymakers, regulators, and relevant stakeholders to help address these challenges. For example, California's utilities are working closely with state and federal agencies on the Renewable Energy Transmission Initiative, which is expected to identify a prioritized listing of Competitive Renewable Energy Zones (CREZ) and conceptual transmission plans to access these zones. Streamlining the permitting process for transmission lines to reach the CREZs is a critical path item to achieving California's expected 33% RPS goal.

Other activities are centered on streamlining agency permitting activities. Governor Schwarzenegger issued an Executive Order in November 2008 to advance California's transition to a clean energy economy and has directed state agencies to create comprehensive plans to prioritize regional renewable projects based on an area's renewable resource potential and the level of protection for plant and animal habitat. To implement and track the progress of the EO, the California Energy Commission (CEC) and the Department of Fish and Game (DFG) signed a Memorandum of Understanding formalizing a Renewable Energy Action Team (REAT).

To streamline the application process for renewable energy development, the CEC and DFG are to create a "one-stop" permitting process with the goal of reducing the application time for specific projects in half. This will be achieved through the creation of a special joint streamlining unit that will concurrently review permit applications filed at the state level.

To jump start Natural Communities Conservation Plans (NCCPs) under the EO, the REAT will initiate the Desert Renewable Energy Conservation Plan in the priority Mojave and Colorado Desert regions and identify other preferred areas that will benefit from a streamlined permitting and environmental review process. This is expected to dramatically reduce the time and uncertainty normally associated with building new renewable projects.

The CEC, DFG, U.S. Fish and Wildlife Service and the U.S. Bureau of Land Management signed a Memorandum of Understanding to establish a coordinated approach with our federal partners in the expedited permitting process. This coordinated approach is also expected to significantly reduce the time and expense for de-

veloping renewable energy on federally owned California land, including the priority Mojave and Colorado Desert regions.

It will take some time for us to see the results of these—and other—activities to increase the levels of renewable energy in California. As we work to achieve California and the U.S. goals on climate change and to decarbonize energy supply resources, as well as protect land, water, and wildlife resources, the federal government is well positioned to help bring greater clarity through sound policies. We appreciate this Subcommittee's interest in these vital issues, and look forward to working with you, other policy makers, and stakeholders on this journey on the road to consensus. On behalf of PG&E, I want to thank you for the opportunity to appear before you today and I look forward to answering your questions.

Thank you.

Response to questions submitted for the record by Steven E. Malnight

1. Mr. Malnight, please provide your opinions on how the various interagency Memorandum of Understandings that have been signed between the federal agencies and the state agencies have been working. Has there been an improvement in planning and permit processing, or does more need to be done to improve coordination?

While the Memoranda of Understandings (MOUs) are a step in the right direction, it has taken some time for the agencies to develop an efficient working relationship. To that end, the MOUs should be updated to reflect the "lessons learned." One solution we have proposed in California is for the agencies to delegate responsibilities to each other based on expertise rather than "joint" writing of each aspect of the environmental document. This would relieve pressure on resources without jeopardizing protection of the environment in any way. For example, the wildlife agency can take the lead on performing the analysis concerning biological resources consistent with its expertise, instead of all agencies participating and attempting to jointly analyze and write that section of the Environmental Impact Statement (EIS).

We have also noticed a desire by each agency to coordinate the review process and we applaud that commitment. However, this sentiment has not resulted in much streamlining, as each agency's staff continues to be bound by that agency's internal review times and internal processes. According to independent power producers who have contracts to deliver power to us, they have not yet experienced expedited internal reviews by field staff and the supervisorial chain. These internal procedures should be revisited and revised to reflect the intent with which the MOUs were drafted. Specifically, the MOUs could be revised to develop tighter internal review timelines to produce the requisite environmental documents.

In addition, there has been some reluctance on the part of agencies to release a Draft Environmental Impact Statement (DEIS) if it has not addressed and resolved each and every issue. The DEIS is intended to be a draft document and while we do not support its release unless it is complete, it would be helpful if the agencies did not wait until every issue is completely resolved before releasing the DEIS. Addressing issues in stages could help speed the issuance of the final EIS.

Another example of areas that cause delay is the Bureau of Land Management's (BLM) request for very detailed information prior to commencing the processing of Right of Way Grants for solar applications. BLM recently developed very stringent criteria for Plans of Development (PODs) that must be submitted before the BLM will begin the National Environmental Policy Act (NEPA) process. We understand that these detailed criteria were developed, in large part, to "weed out" those solar developers that were land speculators, from those that intend to actually develop solar facilities. The unintended consequence of that action, however, has been to delay commencement of the NEPA process because this level of detail is not usually developed until later in the design process. While we understand BLM's desire to focus its work on projects that are "real" versus those that are speculative, we suggest a revision to the MOU that would grant fast track, expedited status, to all those project developers that meet the stringent POD requirements. The NEPA process should be conducted within one year of a completed POD. To accomplish this expedited goal, the agencies will need to shorten internal review times.

2. Mr. Malnight, do you believe it is a better strategy to pursue a smaller number of very large solar plants, or a larger number of smaller projects, in order to meet a certain renewable energy goal?

PG&E believes the best strategy is to develop a diverse portfolio of technologies and project sizes. This diverse strategy can foster a robust competitive market, mitigate the impacts to the environment, and deliver, in the most cost-effective manner,

renewable energy to our customers. Relying solely on large solar projects, or smaller solar projects, to meet a renewable energy goal, could have the unfortunate consequence that, if those projects fail to materialize for any reason, achievement of the renewable energy goal is dramatically impaired.

3. Mr. Malnight, please provide additional detail on what sort of timelines your company would like to see imposed on the BLM review process for solar rights-of-way.

BLM has several opportunities to expedite the review process:

- BLM should review an initial POD and give notice of any deficiencies within 30 days of filing of the POD.
- BLM should review any supplemental information provided in response to a notice of deficiency within 30 days of receipt of that supplemental information.
- Once a POD is deemed complete, BLM should immediately begin the NEPA process.
- The Notice of Intent (NOI) should be published within 30 days of the completion of the POD and BLM should select a third-party independent contractor within 30 days of issuance of the NOI.
- For projects within California, the BLM should follow the California Energy Commission (CEC) process and coordinate all public meetings, workshops and hearings with the CEC's standard schedule to reduce duplication.
- The NEPA process should be concluded within 12 months of deeming the POD complete.

Mr. COSTA. Thank you very much, Mr. Malnight, and I appreciate your focus. There are some thoughts that I have with regards to questions based on your testimony. We will get back to that.

Mr. Bill Corcoran from the Sierra Club.

STATEMENT OF BILL CORCORAN, SENIOR REGIONAL REPRESENTATIVE, SIERRA CLUB

Mr. CORCORAN. Mr. Chairman, I will ask your indulgence in advance, as your sole environmental representative, if I run a minute over.

Mr. COSTA. Oh.

Mr. CORCORAN. May I have that indulgence?

Mr. COSTA. OK.

Mrs. BONO MACK. Mr. Chairman, I will give him a minute of my time if that helps.

Mr. COSTA. But not a minute more. No.

[Laughter.]

If it is interesting, I will be very considerate.

Mr. CORCORAN. I think that is a legitimate——

Mr. COSTA. If you see my eyes glazing over——

Mr. CORCORAN. I will edit appropriately.

Mr. COSTA. OK. Go ahead.

Mr. CORCORAN. Mr. Chairman, members of the Subcommittee, my name is Bill Corcoran. I work with Carl Zichella and Sierra Club representatives to facilitate environmentally responsible renewable energy and related transmission siting in the western United States. I am testifying today on behalf of the Sierra Club's 1.3 million members and supporters in the United States and Canada.

To prevent the calamity of extreme global warming, all nations heavily dependent on fossil fuels will have to rapidly shift to renewable energy resources, including solar energy. We need to bring renewable energy up to scale, and we need to do so as rapidly as

we can responsibly manage. That does not mean we need to bypass environmental protections.

On the contrary, we need to take great care while developing what we need. To move quickly, we must have the public's trust that environmental values will be upheld. Failing this, our efforts will be controversial and our progress slow.

There are several principles that can guide our efforts. One, land that has already been disturbed should be preferred for development. Whether in private or public ownership, land that has already been developed for industrial, agricultural, or other intensive human uses is generally superior to greenfield sites to minimize environmental harm.

This is the second one: identify and establish incentives for parcelized private lands in good resource areas. Some areas of disturbed lands are already large enough to accommodate solar development, such as farms, mining sites, etcetera. But many of the very best areas for solar development are presently very difficult to develop. These are areas typically near desert communities which were subdivided and sold a vacation or second home developments decades ago. They have excellent solar values and are closer to consumer load than more remote and less degraded sites on public lands.

Currently, the large number of owners, sometimes hundreds or more in an area, make aggregating these parcels difficult to impossible for developers. The Sierra Club believes that with proper incentives these sites can be unlocked. Four types of incentives for private lands are needed. These incentives should be applied to aggregating properties within recognized areas of high potential that could be within designated solar energy development or enterprise zones. These zones could be adopted by state action, and, once designated, be eligible for Federal incentives.

Hear are the four. Incentives for landowners to sell. Many landowners in these areas are unable to develop their parcels. A combination of Federal and state tax breaks would help, as would a subsidy for closing costs.

Incentives for aggregators. As developers find aggregating parcels daunting, it would be necessary to incentivize private parties to take this on. Tax breaks similar to those provided for landowners might suffice.

Incentives for generators to locate. Generators who may have invested significant resources to initiate projects elsewhere might instead locate in these areas if they knew their projects could proceed more swiftly. By providing expedited state reviews and licenses, combining mitigation and habitat conservation planning in these areas, generators would be more able to break ground quickly, take advantage of tax incentives, and meet contractual obligations to utilities striving to meet the State's renewable portfolio standard goals.

This idea closely parallels the Governor's Executive Order in California and will require close cooperation with Federal and state wildlife management agencies.

Incentives for counties to zone for solar. Because solar developers enjoy a lower property tax rate in California, counties can hold land for other forms of development other than solar. Only one

county in California has an energy element to its general plan, Imperial County. The State should require such elements and work with Congress to tie eligibility for Federal or state payment in lieu of taxes that apply to counties that zone for solar, and work to aggregate parcelized lands of high renewable energy resource value into usable sites.

Third principle, and I will start editing here. Bureau of Land Management should not accept right-of-way applications on lands that cannot be developed for environmental reasons. Requiring plans of development for all wastes money and staff time.

BLM is considering designating areas suitable for development on their most disturbed sites and then beginning to reject and discourage right-of-way applications in sensitive areas. If implemented, this would help enormously.

We must, of course, do both our long-term and short-term planning. We need a more circumspect approach for future solar siting. We need to establish incentives for generators to locate on disturbed sites on public lands.

Generators who may be displaced on less disturbed sites would be more likely to locate on disturbed lands if they knew they would have a clear path through the environmental review and licensing processes. Accomplishing this requires joint state and Federal habitat conservation planning and mitigation work, combined with programmatic environmental review that allows for environmental assessments as opposed to EISs.

Six, be willing to innovate in transmission infrastructure. Many resource areas on public lands have stunning views that enhance fragile local economies. We have a number of communities here that are gateways to fantastic public land resources. It is in both our short- and long-term interest to be open to using technologies that are less intrusive, such as undergrounding of lines with superconducting materials and technologies, despite the fact that they may be somewhat more expensive. This is an investment in the future of these communities.

Require and fund agency cooperation to shorten environmental reviews and increase review quality. And I want to emphasize the need for increased staffing in agencies that are saddled with a huge challenge.

Trans-agency cooperation is essential to accomplishing a successful solar energy buildout. Without it, projects will struggle as sequential reviews lengthen consideration timelines and delay needed projects. We will need agencies such as the Department of Defense to be part of the plan in terms of both making areas available for development as they are beginning to do, and participating in remediation and mitigation efforts.

Other agencies needed to play a central role include the Federal Energy Regulatory Commission and the land management and research agencies of the Departments of Energy, Agriculture, and Interior.

In summary, by siting projects on the most disturbed lands, we can identify both public and private lands by providing strategically crafted incentives to open up lands suitable for development but constrained by parcelization, by encouraging innovation both in terms of technology and cost recovery. And by careful coordination

with the states, and mandatory coordination between and among Federal agencies, we can realize the vast potential of the Southwest solar energy potential.

Thank you for your consideration of this testimony, and your indulgence.

[The prepared statement of Carl A. Zichella follows:]

Statement of The Honorable Carl A. Zichella, Director, Western Renewable Programs, Sierra Club

Mr., Chairman, members of the committee, my name is Carl Zichella. I am the Sierra Club's director of western renewable programs. My responsibilities include working to facilitate environmentally responsible renewable energy and related transmission siting in the western United States. I am an environmental stakeholder in the State of California's Renewable Energy Transmission Initiative (RETI) and the Western Governor's Association's Western Renewable Energy Zone (WREZ) processes. I am also a steering committee member for the Energy Future Coalition's renewable energy transmission project. I have worked for the Sierra Club for nearly 22 years and have worked on energy issues throughout my 25 year career in environmental advocacy. I am testifying today on behalf of the Sierra Club's 1.3 million members and supporters in the United States and Canada.

Global Warming threatens our people and natural environment in ways we have never before experienced. According to the Intergovernmental Panel on Climate Change (IPCC) the next century could see increases in temperature—four degrees Celsius—equivalent to the total increase experienced on Earth since the end of the last Ice Age 10,000 years ago. The effects on human life and the natural world will be enormous.

To prevent this calamity all nations heavily dependent on fossil fuels will have to dramatically shift the way they fuel their economies to renewable energy sources, including solar energy. We need to bring renewable energy up to scale and we need to do so as rapidly as we can responsibly manage.

That does not mean we need to do it by short-circuiting environmental protections. On the contrary, we need to take great care to undertake the development we need with circumspection because if we are to move quickly we need to gain the public's support and trust that environmental values will not be unnecessarily trampled. If we fail to do this our efforts will be controversial and our progress will be slow.

It is to our great advantage that our solar energy resources are arguably the best in the world in terms of quality and location. Not only do we have some of the very highest quality solar resource on the planet in California and neighboring states, that resource is closer to load than any other comparable resource area in the world, 200 miles or less generally from the major load centers. This means that we can be selective about siting. We do not have to trample protected areas and threaten already-imperiled wildlife.

Solar energy, like all energy sources regardless of fuel type, has impacts. We need to make sure that we are taking appropriate precautions to address and mitigate these as we move forward to develop large-scale projects. Most of the solar energy companies I am aware of are responsible developers who are making every honest effort to identify the environmental impacts of their proposed projects and are willing to do appropriate mitigation for their anticipated effects. There are some honest disagreements about this, as we would expect, but I believe we can, by working together with federal and state regulators and with the generators as partners, unlock the vast potential of this resource in a time frame to help meet President Obama's goals of reducing greenhouse gas emissions nationally by 80% by the middle of this century, and increasing the use of renewable sources of electricity nationally by 25% by 2025.

What do we need to do to accomplish our solar energy goals and greenhouse gas reduction needs? There are a number of principles we can follow that can help guide our efforts in the most expeditious manner. Some of these are contemplated in federal legislation. Others are being implemented by federal agencies under the direction of the Executive branch. Still others could be implemented administratively under existing authorities should the agencies be so directed by the President.

Some will take state action, and indeed a critical element of success will be coordination with state agencies and governments. For example, transmission line development, perhaps the largest obstacle for large-scale renewable energy development, will require close cooperation and perhaps new planning and siting relationships with the states to accomplish. Efforts to simply preempt states would likely face bit-

ter and entrenched "as well as unnecessary—opposition and would be in my judgment likely to fail. There is a balance here that threads this needle of respective authorities and we will need to find it. Suggestions made by Senators Reid and Bingaman to share authorities with the states provide two pathways to solving this problem.

Principles for a "road to consensus" for solar energy development

1. Land that has already been disturbed should be preferred for development. Whether in private or public ownership, land that has already been developed for industrial, agricultural, or other intensive human uses is generally superior to "greenfield" sites in terms of minimizing environmental degradation. Redevelopment of disturbed sites offers opportunities to improve lands that may not otherwise be reclaimed, but it is imperative to consider and address the effects of renewable energy development, both positive and negative, on minority and low income populations. In the California, Nevada and Arizona deserts we need to intensively focus on identifying these sites and making them available for renewable energy development.
2. Identify and establish incentives for parcelized private lands in good resource areas. Some areas of disturbed lands are already large enough to accommodate solar development. These include abandoned farmlands, unofficial OHV recreational areas, and abandoned mine sites to name a few. But many of the very best areas for solar development are presently very difficult to develop. These are areas typically near desert communities which were subdivided and sold as vacation or second home developments 50-60 years ago. They have excellent solar values and are closer to consumer load than more remote and less degraded sites on public lands. Some of these areas were badly damaged as developers bladed roads for subdivisions across them. The large number of owners (sometimes in the hundreds or more) makes aggregating these parcels difficult to impossible for developers who believe negotiating with more than 20 owners per each two square mile project area is not feasible. It is too difficult and takes too long. But abandoning these sites is an affront to desert conservationists who correctly insist that we need to make the best use of disturbed sites before using sites that are undisturbed, especially on the public lands. The Sierra Club believes that with the proper incentives, these sites can be unlocked.

Four types of incentives are needed. Some are federal, some are state, and some are local. These incentives should be applied to aggregating properties within recognized areas of high potential that could be within designated solar energy development or "enterprise" zones to ensure that the resources have best and fastest effect. These zones could be adopted by state action and once designated be eligible for federal incentives.

a. Incentives for landowners to sell—Many landowners in these areas are unable to develop their parcels for residential development due to insufficient water resources. A combination of federal and state tax breaks—such as capital gains tax exemptions and tax credits—would help, as would a subsidy for closing costs.
b. Incentives for "Aggregators"—As developers find aggregating parcels daunting, it would be necessary to incentivize private parties to take this on. Tax breaks similar to those provided for landowners might suffice.
c. Incentives for generators to locate—Generators who may have invested significant resources to investigate projects elsewhere would be persuaded to instead locate in these areas instead if they knew that their projects could proceed more expeditiously. By providing expedited state reviews and licenses "combining mitigation and habitat conservation planning in these areas, not cutting corners on normal review but recognizing that these disturbed sites will have fewer conflicts—generators would be more able to quickly break ground, take advantage of tax incentives and meet contractual obligations to California utilities striving to meet the state's renewable portfolio standard goals. This idea closely parallels the Governor's executive order in California. This will require close cooperation with federal and state wildlife management agencies.
d. Incentives for Counties to zone for solar—Because solar developers enjoy a lower property tax rate in California there is more incentive for counties to hold land for other forms of development rather than zone land for solar. Only one county in California has an energy element to its general plan: Imperial County. The state should require such elements and work with the Congress to tie eligibility for federal or state payment in lieu of taxes that could apply to Counties that zone for solar and work to aggregate parcelized lands of high

renewable energy resource value into usable sites. Decertification of expired subdivisions might be one qualifying activity Counties could use.

3. Bureau of Land Management should not accept Right of Way (ROW) Applications on lands that cannot be developed for environmental reasons—The BLM is considering changing the way ROW applications are handled away from accepting every ROW application and only rejecting proposed projects after plans of development are completed. This is a very positive step that should be encouraged. Some of the areas applied for are not developable due to wildlife and land conservation conflicts, and requiring plans of development for all is wasteful both financially and in terms of agency staffing. BLM is considering designating areas suitable for development (on their most disturbed sites) and then beginning to reject and discourage ROW applications in sensitive areas. If implemented this will help enormously. They could begin by rejecting ROW applications in sensitive lands immediately.
4. Do both long and short term renewable energy planning on public lands—We need to both get as much development started in the right places we can manage as expeditiously as possible and plan for the longer term. The approach mentioned above is fine for the short term. But we also need a more circumspect approach for future solar siting that can unfold over a longer time frame. The resource is rich enough that we have the ability to site solar projects more carefully once the first rank of disturbed lands has been identified and put into use.
5. Establish incentives for generators to locate on disturbed sites on public lands—As with the private lands case already presented, generators who may be displaced on other less-disturbed sites would be more likely to locate on disturbed lands if they knew they would have a clearer path through the environmental review and licensing processes. Accomplishing this would mean joint state and federal habitat conservation planning and mitigation work, combined with programmatic environmental review that would allow for Environmental Assessments as opposed to EIRs. BLM is currently exploring ways to do this with the States of California, Nevada and Arizona and perhaps others.
6. Be willing to innovate in transmission infrastructure—Infrastructure installed to facilitate solar development will be with us for a half century or more. Many local objections to transmission needed for solar development stem from degraded viewsheds for local residents. Many resource areas on public lands have stunning views that enhance fragile local economies. It is in both our short term and long term interest to be open to using technologies that are less intrusive, such as undergrounding of lines with superconducting materials and technologies, despite the fact that they may be somewhat more expensive. This may require a new rule from FERC, and Executive Order from the President or congressional action to approve higher levels of cost recovery, perhaps applied across parts of the entire interconnection, to enable transmission line sponsors, whether independent or load serving entities, to consider employing them as a part of their projects in uninhabited areas.
7. Require and fund agency cooperation to shorten environmental reviews, increase review quality—Trans-agency cooperation is essential to accomplishing a successful solar energy build-out. Without it, projects will struggle as sequential reviews lengthen consideration timelines and delay needed projects. We will need agencies such as DOD to be part of the plan in terms of both making areas available for development as they are beginning to do, and participating in remediation and mitigation efforts. Other agencies needed to play a central role include the Federal Energy Regulatory Commission and the land management and research agencies of the Departments of Energy, Agriculture and Interior.

In summary, by siting projects on the most disturbed lands we can identify on both public and private lands; by providing strategically crafted incentives to open up lands suitable for development but constrained by parcelization; by encouraging innovation both in terms of technology and cost recovery; and by careful coordination with the states and mandatory coordination between and among federal agencies we can expeditiously unlock the vast potential of the southwest's solar energy potential.

Thank you for your consideration of this testimony.

Response to questions submitted for the record by Carl Zichella

Question 1: Effectiveness of Interagency Memoranda of Understanding: Memoranda of Understanding are important tools for interagency cooperation. But

it has been our experience that they often fail to meet their intended level of effectiveness because there is no single "driver" to keep the respective signatories on track and to hold agencies and their staffs accountable. Existing MOUs on transmission for example have accomplished little. There needs to be a senior official from the federal and state governments in charge of their respective signatories to ensure that the goals of the agreement are accomplished and milestones met.

Another shortcoming has related to capacity. Some federal and state agencies, such as USFWS are drastically understaffed and lack the ability to contribute to the goals of MOUs in a timely way. This desperately needs to be addresses. This is even truer at the state level. Some means of federal support for MOUs in terms of dedicated staffing at the agencies, dedicated resources to permit the completion of the goals of the MOU and support for equivalent state participation are needed to make these instruments live up to their expectations.

Question 2: Small number of large v. large number of small projects: We believe that the magnitude of the carbon reductions we must make to gain control of global warming and to meet RPS standards requires that we do many things simultaneously. This includes improving our very slow progress with distributed generation and increasing our energy efficiency and conservation efforts as well as siting large-scale solar energy projects. Large scale projects properly located afford us our best chance of meeting renewable energy goals in the short term. Because they produce larger amounts of energy from a smaller number of sites, they can reduce the environmental impact related to scattering smaller projects across the landscape. Siting these projects properly takes great care because of their very large land disturbance impacts. There is a welcome trend under way currently that seeks to site smaller but still significantly-sized projects (20-100 MW nameplate capacity) on disturbed and less environmentally significant private lands closer to load. Because these may be relatively easier to site and may need only minimal transmission improvements to begin adding power to the grid, they can cumulatively help us make progress on RPS goals as we approve, develop and bring on line larger scale projects. They do not replace the need for large scale projects

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Mr. COSTA. Not a problem. And tell Carl that we wished he could have been here. But you did an able job, and his testimony—I like the seven principles that you put together. I think they give a framework under which we can work. We may have differences on how we achieve those goals, but I think it is important for environmental organizations to provide principles that are workable. More to that later on.

Mr. CORCORAN. Thank you.

Mr. COSTA. Our next witness, Ms. Katherine Gensler, Solar Energy Industries Association. Katherine, you have five minutes.

STATEMENT OF KATHERINE GENSLER, MANAGER OF REGULATORY AND LEGISLATIVE AFFAIRS, SOLAR ENERGY INDUSTRIES ASSOCIATION

Ms. GENSLER. Thank you. Good morning, Mr. Chairman——

Mr. COSTA. Good morning.

Ms. GENSLER.—members of the Subcommittee, thank you for inviting me to offer testimony on the very timely issue of solar energy development on Federal lands.

My name is Katherine Gensler, and I am the Manager of Regulatory and Legislative Affairs for the Solar Energy Industries Association. SEIA is the national trade association for the solar energy industry and represents nearly 900 members at all points of the value chain, from financiers to project developers, component manufacturers, to solar installers. With me today is also Peter Weiner of Paul Hastings to help answer any questions you may have.

Mr. COSTA. A little more directly into the mic. No, just change the—raise it up a little bit. There you go.

Ms. GENSLER. In the five minutes I will be speaking to you today, enough sunlight will shine upon the United States to satisfy America's energy demands for an entire month. The solar industry is working to harness this carbon-free energy and create domestic jobs to move our country to a new clean energy future.

Solar energy will create more than 60,000 jobs, install a gigawatt of solar capacity, and avoid more than one million tons of carbon emissions in 2009 alone. These figures will more than double in 2010.

There is a broad consensus that developing the enormous potential of solar power on BLM managed lands should be a priority for the Bureau. Currently, there are 199 solar projects waiting for permits from BLM with some applications pending since 2005. Together, those proposed projects could power 20 million homes and could create 37,000 jobs in the region, yet not a single permit for solar energy development has been issued by BLM. In comparison, there were approximately 7,100 oil and gas permits issued in 2007 alone.

One of the most important provisions in the American Recovery and Reinvestment Act enables a solar project developer to receive a grant directly from the Treasury Department rather than having to monetize the solar investment tax credit through a financial backer. This program requires applicants to begin construction of their project by December 31, 2010.

A lot of what you have heard today focuses on the three- to five- to ten-year planning cycle. I want to call your attention to the immediate future. Despite the diligent efforts of solar project developers, the Department of the Interior, and states to meet this deadline, we run the risk of having no projects that will satisfy it. The following obstacles must be overcome.

Mr. COSTA. No projects by when?

Ms. GENSLER. By December 31, 2010—obstacles to overcome quickly. First and foremost, the BLM offices that process solar applications here in Southern California and across the west do not have adequate resources to efficiently process pending applications. Secretary Salazar's announcement last week that $41 million of Recovery Act funds would be dedicated to processing renewable energy applications.

BLM must expeditiously use those funds to organize and staff the renewable energy coordination offices. To ensure the future funding of those offices, the rent paid by solar and wind developers should be recycled back into those BLM offices that process these permits.

Second, BLM, the Fish and Wildlife Service, and state agencies must have a clear process for early and regular coordination, and commit to clear timeframes for making decisions. At this point, we are only 18 months away from that commenced construction deadline. Timely interagency coordination is crucial.

Finally, BLM must adopt, and Congress should support, ways to expedite environmental review of projects that are capable of beginning construction by the end of next year. This does not mean cutting corners. It means finding ways to proceed faster down the same path.

Mr. Chairman, by taking these actions, Congress can turn the broad consensus on the desire for solar energy into real on-the-ground projects. We can improve our energy independence. We can tackle global warming. We can help California meet its RPS goals. We can create jobs and grow the local economy. And we can make solar energy a significant and lasting contributor to our nation's energy supply.

Thank you for your time. I look forward to your questions.

[The prepared statement of Ms. Gensler follows:]

Statement of Katherine A. Gensler, Solar Energy Industries Association

Good morning, Mr. Chairman, members of the Subcommittee. Thank you for inviting me to offer testimony on the very timely issue of solar energy development on federal lands.

My name is Katherine Gensler and I am the Manager of Regulatory and Legislative Affairs for the Solar Energy Industries Association (SEIA). SEIA is the national trade association for the solar energy industry and represents nearly 900 members at all points of the value chain—from financiers to project developers, component manufacturers to solar installers. Established in 1974, SEIA works to make solar energy a mainstream and significant energy source in the United States by expanding markets, strengthening the industry, and educating the public on the benefits of solar energy.

In the five minutes I'll be speaking to you today, enough sunlight will shine upon the United States to satisfy America's energy demands for an entire month. The solar industry is working to harness this carbon-free energy and create domestic jobs to move our country to a new, clean energy future. Solar energy will create more than 60,000 jobs, install a gigawatt of solar capacity, and avoid more than 1 million tons of carbon emissions in 2009 alone. These figures will more than double in 2010.

In recent years, broad consensus has emerged around the need for clean renewable energy and the role that solar energy can and must play in meeting that need. For example, in the Energy Policy Act of 2005 (EPAct), Congress directed the Secretary of the Interior to aid the development of 10,000 MW of renewable energy projects on public lands within a decade. More recently, President Obama has set out a goal of doubling the nation's renewable energy production in the next three years. And a majority of states have adopted ambitious Renewable Portfolio Standards.

To further these clean energy goals, former Secretary Kempthorne authorized the Bureau of Land Management to establish renewable energy coordination offices that will expedite the permitting of wind, solar, biomass, and geothermal, and transmission projects on BLM-managed lands. Secretary Salazar has reinforced these policies with his formation of a task force on energy and climate change. We commend the Secretary for his recent announcement that $41 million of funding from the American Recovery and Reinvestment Act of 2009 (ARRA) will be used to expedite the processing of renewable energy permits.

Despite this broad consensus, the enormous potential of solar power remains untapped. Currently there are 199 solar projects waiting for permits from BLM, with some applications pending since 2005. Yet not a single permit for solar energy development has been issued by BLM. Together, these proposed projects could power 20 million homes and could create 37,000 jobs in the region.

This Congress, recognizing both the need for renewable energy and the financial challenges faced by project developers, established a grant program in lieu of the solar investment tax credit (ITC). This program enables a solar project developer to receive a grant directly from the Treasury Department, rather than having to monetize the ITC through a financial backer. The grant program requires applicants to begin project construction by December 31, 2010.

Despite the diligent efforts of solar project developers, the Department of the Interior, and the States to meet this deadline, we run the risk of having no projects that can satisfy it. The following obstacles must be overcome, and quickly:

- First and foremost, the BLM offices that process solar applications here in Southern California and across the West do not have adequate resources to efficiently process pending applications, particularly for those projects that can meet the Recovery Act deadline of December 31, 2010. As noted earlier, ARRA provided additional resources; now BLM must expeditiously use those funds to organize and staff the renewable energy coordination offices.

- Additional resources also must be provided to the Fish & Wildlife Service, which is charged with assessing the impacts of solar projects on sensitive species and devising mitigation measures to offset these impacts.
- BLM, FWS, and state agencies must have a clear process for early and regular coordination, and commit to clear timeframes for making decisions. At this point we are only 18 months away from the deadline to commence construction; timely interagency coordination is crucial.
- BLM must adopt, and Congress should support, ways to expedite environmental review of projects that are capable of beginning construction by the end of 2010. This does not mean cutting corners; it means finding ways to proceed faster down the same path. Examples include processing projects according to readiness, not the date of filing of a permit application; ordering the immediate publication of Notices of Intent under the National Environmental Policy Act for projects that have an adequate Plan of Development and have completed or are conducting spring studies; using existing studies where possible; and relying on mitigation measures to address uncertainties.

In addition to these immediate changes, there must be long-term fixes if solar energy is to become a significant and lasting contributor to our nation's energy supply. We have had the opportunity to meet with BLM and FWS on several occasions and both agencies have been very open and responsive. Nonetheless, some issues will require assistance from Congress.

- To ease BLM and FWS resource constraints, the solar and wind industries propose to recycle the rents paid by renewable energy developers back to the state offices or Renewable Energy Coordination Offices that process the ROW permits. The funding provided by ARRA jump-starts these offices; this proposal would provide the agencies with an on-going revenue stream and the certainty that they will have trained staff available for process future solar applications. (See Attachment 1 for background information.)
- In addition, the solar industry has proposed an application processing fee that would be collected through BLM's cost recovery authority. BLM requires legislation from Congress to make this fee nonrefundable.
- Solar permit applications should be accepted in a noncompetitive bidding process. While competitive bidding works for established industries like oil and gas or mining, it is not appropriate for new market entrants like solar. Instead, BLM should grant permits to companies with the financial and technical expertise to bring solar projects to fruition.
- Solar and other renewable energy projects require wholesale improvement and expansion of our nation's ailing transmission system on a timeframe that is meaningful. To the extent that the Department of the Interior is charged with performing the environmental review of transmission lines on public lands, we urge the department to act expediently and, to the extent practicable, rely on analysis that has already been conducted.
- For those projects that do not have ready access to transmission, stakeholders have focused on the identification of resource "zones," or areas within which solar development could take place (i.e., enough sunlight and relatively flat terrain) while effectively addressing environmental issues such as species protection. BLM is considering these "zones;" the Western Governors' Association is conducting its Western Renewable Energy Zones ("WREZ" process); and California has its Renewable Energy Transmission Initiative ("RETI") process. All of these are multi-stakeholder processes which provide diverse parties a road to consensus. The multi-stakeholder and scientific approach followed in each of these initiatives is key to their success.
- The federal government can facilitate the deployment of solar by providing clear guidance on which federal lands will be open to solar energy development, so project developers do not waste time and money pursuing projects in areas that may ultimately be deemed inappropriate for development.
- If Congress sets aside land for strict preservation, solar developers should receive mitigation credit for those lands.
- Congress should support the use of suitable BLM lands for mitigation easements, an idea introduced by the Nature Conservancy and called "non-acquisition mitigation."
- The Department of Defense manages large swaths of land in the Southwest, many of which are suitable for solar energy development. Congress should assist the Defense Department in making these lands available for solar power plants.

Solar energy development is among the many possible uses of federal lands in the Southwest. The industry recognizes and supports the need for a balanced approach to preservation, development, recreation, and other uses. By taking the actions out-

lined above, Congress can turn the broad consensus on the desire for solar energy into real, on-the-ground projects that tap clean, domestic energy resources while providing jobs to grow the local economy.

Thank you for your time. I am happy to answer any questions you may have.

ATTACHMENT 1

AMERICAN WIND ENERGY ASSOCIATION

SOLAR ENERGY INDUSTRIES ASSOCIATION

Ensuring adequate resources for BLM to process wind and solar energy applications

Background

Congress has gone on record in support of expediting the processing of applications for renewable energy production on federal lands. [1]

However, as of November 2008, there were more than 215 applications pending with the Bureau of Land Management (BLM) for wind energy permits, including both applications for site testing (to set up temporary poles to test wind speed) and to construct actual wind farms. This is up from 150 pending in January 2008. Due to limited staffing, site testing permits for wind energy are taking 18 months or longer. Given the time-limited incentives for renewable energy included in the American Recovery and Reinvestment Act (P.L. 111-5), delays of this magnitude can make or break the economic viability of a project. By contrast, application for development permits for oil and gas drilling generally take 6-7 months.

To date, BLM has approved 192 right-of-way grant authorizations for wind energy projects, 28 for development and 164 for site testing only.

Similarly, there are nearly 200 pending applications for solar energy projects on BLM lands, up from 135 in January 2008. None have yet been approved. Solar projects do not engage in a site testing phase like wind. Instead, they go directly to applying for a full scale development permit, which requires a site specific environmental impact statement (EIS), a process that typically takes two to three years to complete.

In January 2009, the Department of the Interior announced the creation of Renewable Energy Coordination Offices in four western states—Arizona, California, Nevada and Wyoming—where the Department has received the most interest in development. While this approach holds promise, steady funding will be important to fully realize the potential benefits these offices may provide. The AWEA/SEIA proposal discussed below would provide such funding.

Treatment of other major activities on BLM lands

Oil and Gas

Section 365 of the Energy Policy Act of 2005 provides that a portion—around $25 million per year—of the revenues the federal government receives from oil and gas rental payments from BLM lands be recycled back into the BLM for the purpose of expediting the processing of additional oil and gas permit applications by the BLM. This provision is funding seven oil and gas pilot offices and has led to the hiring of 150 BLM staff and is funding 30 staff from agencies like the Forest Service and the Fish and Wildlife Service in order to create "one-stop" locations for oil and gas producers.

Geothermal

Section 234 of the Energy Policy Act of 2005 provides that rentals, royalties and other payments, excluding those paid to state and county governments, made by geothermal developers be used to expedite the processing of additional geothermal permits. This provision is providing $10 to $15 million per year to process geothermal permit applications.

Commercial Filming

Public Law 106-206 established a fee system for commercial filming activities on public lands. The law allows the Secretary to direct these fees to improve the processing of additional permit request. This law provides around $250,000 a year for this purpose.

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[1] Energy Policy Act of 2005 (Public Law 109-58)

Communications Towers

The Department of the Interior Appropriations bill beginning in Fiscal Year 2006 and repeated in each subsequent year has dedicated $2 million out of the rental fees paid by communications tower owners to administering the permit program for communications towers.

Request of wind and solar industries

Currently, the wind industry pays nearly $1 million in rental fees to the BLM every year. There are currently no rental fees for solar projects, but fees will ramp up to $1 million or more quickly as projects get completed and go operational in the next few years.

Similar to the authorities described above for other activities on BLM land, the wind and solar industries would like legislation approved that would recycle up to $5 million of the rental payments paid by wind and solar developers for projects on BLM lands back into the Department of the Interior for the purpose of expediting the processing of additional wind and solar permits. This revenue would partially fund approximately 70 positions related to processing renewable energy applications.

Response to questions submitted for the record by Katherine A. Gensler

Questions from Chairman Jim Costa, from the State of California

1. Ms. Gensler, please provide your opinions on how the various interagency Memorandum of Understandings that have been signed between the federal agencies and the state agencies have been working. Has there been an improvement in planning and permit processing, or does more need to be done to improve coordination?

Coordination between the various state and federal agencies involved in the permitting of solar power plants is crucial, and should be done with an eye toward streamlining the process and reducing permit processing time. The Memorandum of Understanding (MOU) between the Bureau of Land Management of and California Energy Commission (CEC) has been helpful, but the collaboration is still new and further coordination is needed.

The experience of solar developers in California has varied. In some cases, the process has worked well. In other cases, the BLM and CEC processes have not aligned, despite the MOU. Remedies for this situation include (1) coordination at all levels, from upper management to field staff, (2) developing a schedule of milestones with the project applicant and then designating one staff member to be responsible for managing the application process, (3) identifying which agency has the regulatory responsibility for certain processes, and (4) greater resources to devote to application processing. Development of solar power will bring thousands of jobs to the region; delays in the permitting process impede job creation.

2. Ms. Gensler, your organization proposes taking some of the rents your industry would pay and using that money to help fund rights-of-way processing. Would that still be necessary under the new budget released by the President? Would you support increases in rents, application fees, or royalties in order to help fund additional processing?

We are very pleased to see that the Administration's FY 2010 budget request included $16.1 million for BLM to permit and lease renewable energy resources and develop transmission facilities. We anticipate that the new renewable Energy Coordination offices will increase BLM's permitting processing capacity and accelerate the development renewable energy. The advantage to having some of the rents paid by renewable energy developers go back to the BLM offices that process such permits is that it ensures long-term funding for these offices and the staff who process permit applications. The nation is transitioning to a low-carbon energy future, and the solar industry is poised to meet that demand. Having a dedicated revenue stream will help BLM maintain the staff and resources it needs to process applications for renewable energy development into the future.

Any change in the fee structure for solar development must be carefully considered. We must avoid inadvertently increasing the cost of clean, domestically-produced renewable energy. An additional royalty charged on the output from a solar power plant could increase the cost of providing that power to consumers. However, the solar industry is open to a one-time, non-refundable application processing fee. This would be paid to BLM under its cost recovery authority and enable BLM to dedicate more staff resources to processing of solar energy permits. For the fee to be non-refundable, Congressional action would be required.

3. Ms. Gensler, in your testimony, you mention the industry's opposition to competitive leasing for solar. Does your organization have a position on the use of non-competitive leases as an alternative to issuing rights of way, and, if so, what is that position? Also, considering your organization is also concerned about speculators or unserious developers, wouldn't competitive leasing help weed out people who are not serious?

We have not yet developed an industry position on non-competitive leases. As an industry, our goal is to harness the incredible solar resource available in the Southwest United States and bring that power to consumers. Land speculation does nothing to further that goal. The current system of "first in line" processing enables BLM to grant permits to companies with both the financial and technical expertise to bring solar projects into operation. Competitive leasing merely rewards those who submit the highest bid, without the promise of a viable solar project. Such a system will not speed the growth of the industry, nor will it necessarily deploy the solar generation needed to meet BLM's renewable energy goals.

4. Ms. Gensler, please describe the difference between water cooling and dry cooling at solar thermal power plants. How much more expensive is one technology over the other, and is one inherently more efficient than the other?

Solar thermal power plants, like any other thermal power plant (coal, nuclear, etc.), use a steam turbine to generate electricity. The steam turbine uses a closed-loop process, changing water to steam and then back to water. The condenser brings down the temperature of the exhaust steam as it exits the turbine and is recirculated back to the boiler. A "water cooling" system condenses the steam through indirect contact with water that is withdrawn from its source and returned at an elevated temperature. A "dry cooling" (or "air cooling") system uses fans or ambient air to condense the steam. In general, water cooling offers lower capital costs, higher thermal efficiencies, and overall more consistent performance. Dry cooling can reduce water usage by up to 80%, but at a penalty of about a 10% increase in electricity prices.

In addition to water and dry cooling systems, some projects are being developed with hybrid cooling systems. Such systems allow for significantly less water usage on a regular basis. The power plant then shifts to the water cooling mode when ambient air temperatures are high, thus preserving the overall efficiency and electrical output of the solar plant. [1]

5. Ms. Gensler, do you believe it is a better strategy to pursue a smaller number of very large solar plants, or a larger number of smaller projects, in order to meet a certain renewable energy goal?

There are many factors that go into determining the "right" size of a power plant, solar or otherwise. The electricity needs of the utility and its customers are key; access to transmission capacity and a suitable parcel of land are also very important. The optimal size of a solar plant is also driven by economies of scale, both in terms of the prices of component parts and also the physics behind the technology. Project developers, in concert with their customer, are best positioned to determine what size project is most suitable. Input from local, state, and federal officials, as well as other stakeholders, in the planning and permitting phases can—and should—shape the ultimate development of a solar power plant. However, care should be taken to not impose more rigorous standards on one type of power plant vis-à-vis another. Solar energy is an important contributor to meeting the nation's economic, environmental, and energy security goals. Let us not miss the opportunity to tap into this clean, renewable energy resource.

Mr. COSTA. Thank you. And you have 18 seconds left on your time. You have obviously well prepared. Thank you.

Our last witness in this panel is Mr. Michael Niggli, that will give a perspective on solar from Sempra Energy. Mr. Niggli.

STATEMENT OF MICHAEL NIGGLI, CHIEF OPERATING OFFICER, SEMPRA ENERGY UTILITIES

Mr. NIGGLI. Thank you, Mr. Chairman.

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[1] Reducing Water Consumption of Concentrating Solar Power Electricity Generation." 2009. U.S. Department of Energy. http://www1.eere.energy.gov/solar/pdfs/csp__water__study.pdf

Mr. COSTA. Five minutes.

Mr. NIGGLI. Thank you, Mr. Chairman, members of the Subcommittee. Welcome to Palm Desert. Glad to have you here. I am Mike Niggli. I am COO of the Sempra Energy Utilities. I am also Chairman of the Great Basin National Park Foundation, and I am a member of the Western Electric Industry Leaders Group, which is a group of executives in the electric industry that is trying to connect the dots, essentially trying to figure out, how can we bring renewable energy to those who are consuming it and want to consume it.

We found that the best resources for solar and geothermal are right here in California, and we found that the best wind resource in the world possibly is in Wyoming. They have at least six times as much wind capability as we have here in California. The whole point of looking across the western 11 states is to find the lowest cost resources that we can to deliver those to our customers so that renewable energy makes sense for all involved.

Over the last few years, the world has really flipped over. It used to be that it would take time, more time, to actually permit the generating facility than it would the transmission line. That is no longer the case. With the distributed nature of the renewable resources and the fact that they have attributes of zonal attributes, it is actually faster and easier to get those permitted, we think, than it is the transmission lines. So generation is not necessarily the problem. I think it is the transmission area.

We have been working for the last four to five years on permitting a renewable energy delivery system of about 1,000 megawatts here in California. The PUC has acted on that in December of last year, and BLM acted in January, one month later. We are now awaiting the U.S. Forest Service to issue their record of decision, and hopefully that will come very soon.

Our company actually—one of our affiliates has developed the world's largest thin film solar plant, and that thin film requires no water as well, and they are looking to expand it by five times. You can impact our processes in three separate areas. One is in the planning process, two is in the environmental review process, and three is in the post-decision process.

Earlier today you heard about a number of great attributes and initiatives, the western renewable energy zone project and the RETI project here in California. All of these are the right things looking at, how do you connect the dots with the BLM's corridor planning. But what you need to do is to make this real.

Actually, the coordinating and planning must mean something, and it must mean something in the decision process where you get the licenses to build transmission and to build generation. And so you have coordinated planning, but the coordinated planning doesn't mean anything unless we go ahead and work that down into the decision process.

Second, we need you to look at renewable energy credits. We need to have renewable energy credits that are tradeable throughout the western United States, so that we can ensure that we have the opportunity to trade renewable energy and develop the best sites throughout the west to get the lowest cost renewables to our customers.

We also need to look at supersizing transmission lines. We are not going to get that many transmission lines between the regions. There are just too many constraints. When you look at the maps that identify all of the constraints in the western United States, there will be few and far between the major bulk powerlines. So, we should always consider maximizing the voltage level, so we maximize the delivery capability and also, frankly, minimize the environmental impact that is associated with those kinds of lines.

Second, you can also impact the environmental review process by ensuring that everyone is using the same data, has the same timelines, and is coming to a decision at about the same time. That helps everybody in terms of certainty in the process, and it certainly helps the renewable developers to know when a decision will be made on transmission that will allow them to commit significant funds to their projects.

They are ready to commit. They are ready to go. But they need to know that the capability to deliver is there.

And then, on the last part of this, when we finish the permitting, there are post-decision issues that come up, and they come up in terms of the opportunities for additional lawsuits and litigation against all of the projects. It is very interesting, but in our area of the business anybody who deals with the BLM or the Forest Service or some of the other Federal agencies on transmission has multiple bites at the apple.

They can go to the IBLA, they can go to the District Courts, they can go to the Court of Appeals. But if you want to license a gas pipeline in front of FERC, you want to license a hydro project, or you want to license a nuclear plant, they generally have one opportunity and that is at the Court of Appeals. And I think by looking at doing the same thing here we can probably reduce the amount of uncertainty there is in developing renewable resources.

I have a number of other comments, but in terms of the time, Mr. Chairman, I would like to hold those until later until any of your questions.

Thank you.

[The prepared statement of Mr. Niggli follows:]

Statement of Michael R. Niggli, Chief Operating Officer, Sempra Energy Utilities—San Diego Gas & Electric Company and Southern California Gas Company

Executive Summary

SDG&E's recent experience with the siting process for a 500 kV transmission line (the "Sunrise Powerlink" or "Sunrise") that would connect the vast renewable generation potential of the Imperial Valley region to the rest of the grid suggests the following:

A transmission grid is crucial to development of renewable generation: Many renewable resources are "intermittent" in nature. This fact requires a strong regional grid to facilitate bulk power transfers, to absorb energy supply deviations, and to enhance renewable development. It also establishes development of energy storage capabilities as a priority. We have observed robust and concrete developer interest appearing in the region to be served by Sunrise after SDG&E announced the project.

Transmission siting is needlessly duplicative: Transmission siting in the West typically requires several separate state and federal administrative siting processes, each subject to separate judicial appeals. All agencies, state and federal, must work cooperatively to streamline the overall process, agree on project scoping, utilize consistent data, and make timely decisions. Judicial appeals of many federal agency decisions, such as those of BLM and the U.S. Forest Service, begin at the

federal district court level, giving opponents rights to two layers of judicial appeals, and adding years of uncertainty to a multi-year administrative permitting process.

Existing planning is balkanized: Today in the West, regional planning for transmission and renewables takes place in the context of Regional Transmission Organizations, regional reliability councils (such as the Western Electricity Coordinating Council, integrated resource planning processes supervised by state commissions, and certain ad hoc efforts to address siting issues associated with renewable development.

Congress can simplify and coordinate transmission siting: The federal government can facilitate regional planning and siting by vesting principal responsibility in regional planning organizations, working to ensure that other state and federal agencies give deference to these regional organizations, identifying federal lands that should be open to renewables development and transmission corridors, developing common siting principles for these lands, providing a single administrative forum for federal transmission line siting, including the right of affected federal agencies to participate, with appeals to the circuit courts of appeal; and mandating adherence to strict permitting deadlines. Such actions would vastly simplify the siting process, and provide a focus for all stakeholders, without compromising environmental regulation.

I. Introduction

Thank you for the opportunity to testify before the subcommittee. My name is Michael R. Niggli and I am the Chief Operating Officer for the utilities of Sempra Energy. The Sempra Energy companies develop energy infrastructure, operate utilities, and provide related products and services to more than 29 million consumers worldwide.

Our utilities are San Diego Gas & Electric Company ("SDG&E") and Southern California Gas Company. SDG&E is a regulated public utility that serves 3.4 million consumers through 1.4 million electric meters and more than 840,000 natural gas meters in San Diego and southern Orange counties in California. The utility's area spans 4,100 square miles. Southern California Gas Company is the nation's largest natural gas distribution utility, providing safe and reliable energy to 20.5 million consumers through 5.7 million meters in more than 500 communities. The company's service territory encompasses approximately 20,000 square miles in diverse terrain throughout Central and Southern California, from Visalia to the Mexican border.

The Sempra Energy utilities are strongly interested in the development of a diverse supply of resources. We have already voluntarily committed to achieving 33% of our energy supply from renewables sources by 2020, and have achieved commitments and contracts to reach over 20% renewables within the next 2-3 years. Accordingly, the topic today—solar development on federal lands—is of considerable importance to us in meeting our goals, goals we believe are in common with the interests of our state, and our nation.

Achieving significant levels of renewables is a challenge because many of the best renewable energy resources depend heavily on location—wind energy must be sited where the wind blows; solar is best sited where solar insolation is at its greatest; geothermal can only be located where there are rich geothermal resources. Some of these technologies require significant amounts of land, and most of the optimal locations for renewables are in relatively remote areas, which require the availability of electric transmission to bring the energy to load centers.

My testimony today will discuss the issues we confront in siting new renewables and needed transmission, how we have dealt with those issues so far in the West, and some suggested approaches to consider.

II. Resources in the West and How To Access Them

The Western U.S. has enormous renewable potential and much federal land

There is considerable demand in the Western states for renewables. Almost every one of the Western States has codified renewable portfolio standards (RPS). Some states, such as California, are looking to expand their RPS. And, of course, Congress is now exploring a national RPS.

Fortunately, the Western United States has significant levels of renewable opportunities. The attached table (Attachment 1) shows that the Western states have the potential for massive amounts of renewables, especially from wind and solar resources. As illustrated, the West holds the potential for over a million megawatts of renewables, with over half of that contained in just the states of Arizona, Nevada, and Wyoming. This table does not include the substantial renewable potential in Mexico, if it can be integrated into the grid.

The challenge of developing and integrating renewable resources

The challenge we face in the West is how to identify the lowest cost opportunities, facilitate their development, and integrate those resources within the western grid. These are complex topics and they cannot be looked at in isolation.

Ideally, from a commercial standpoint, to optimize the use of these resources necessitates a free flow of commercial transactions among the states. To some degree, this will need to be facilitated by physical infrastructure—most notably, added transmission. But, it also can be enhanced by the development of commercial/regulatory structures such as regionally traded renewable energy credits. Through these combined structures, buyers of renewable energy can enhance their ability to obtain the lowest cost supplies of renewables from the vast resource potential in the West. To date, such commercial structures remain embryonic.

But, purchasers of renewable power cannot simply solicit bids from sellers and expect the power to be developed. Renewable resources must find land on which to develop. They require transmission facilities to connect to the regional grid, to bring the energy to load centers. And, where the resources generate intermittently, such as wind and solar, the largest potential sources of renewables, other resources must be available to firm the power and to allow the grid to continue to operate reliably.

Energy leaders in the Western United States have recognized this challenging task and have begun to work together to identify solutions. For example, the Western Electric Industry Leaders (WEIL) Group is comprised of Chief Executive Officers and executive leaders from investor owned utilities, municipalities, government agencies, and regional transmission operators, among others. This group has undertaken numerous studies to advise policymakers, such as the Western Governors' Association, of the issues and challenges facing the development of renewable resources, particularly the technical issues associated with transmission planning and integration of renewable resources.

One element of these analyses has been to identify potential areas where renewables are most likely to develop, and consider "corridors" for the development of electric transmission to connect those renewable sources to the grid. The programmatic EIR provisions of the 2005 Energy Policy Act are a positive step in this direction for federal lands but do not go far enough. Moreover, this attempt to streamline the process was based on then-current uses for federal lands and not on potential renewable resource areas. The establishment of transmission corridors would facilitate regional transmission planning, which is a vital element to the development of widespread renewable supplies. This same kind of activity has proceeded in several other joint planning processes. The Western Governors' Association and the United States Department of Energy launched the Western Renewable Energy Zones (WREZ) initiative in May, 2008. The WREZ seeks to identify those areas in the West with vast renewable resources to expedite the development and delivery of renewable energy to where it is needed. Renewable energy resources are being analyzed within 11 states, two Canadian provinces, and areas in Mexico that are part of the Western Interconnection. Likewise, in California, various public agencies are supervising the Renewable Energy Transmission Initiative (RETI) to assess competitive renewable energy zones in California, and possibly also in neighboring states, that can provide significant electricity to California consumers by the year 2020. RETI is also intended to prepare detailed transmission plans for those zones identified for development.

Problems with existing planning and development processes

But these planning processes suffer from three significant problems: First, they are duplicative, and balkanized.

Second, their objectives are somewhat vague. For example, they do not have, as part of their design, any mechanism for improving the process that has become an impediment to adding new transmission. The region does not necessarily need more planning processes; it needs a well-coordinated one with clear objectives that will advance efforts in the region of adding new renewables and transmission.

Third, from a planning perspective, there is a "chicken-and-egg" issue—will transmission planning drive where renewables are developed, or will optimal renewable resources drive the location of transmission resources. SDG&E's Sunrise experience shows that a public commitment to build transmission to an area identified with the potential for substantial and diverse renewable generation will inspire a robust quantity of concrete development proposals. After the Sunrise CPCN application before the CPUC, projects representing over 8800 MW of renewable generation applied to the California Independent System Operator Corporation ("CAISO") and Imperial Irrigation District interconnection queues for projects to be located in the Imperial Valley and vicinity. And, to date, SDG&E and other utilities have executed purchased power agreements, including options, for over 1000 MW of renewable

projects in the same region. Finally, renewable generation developers have told us that purchase power contracts and an assured transmission path for a project's output are requirements for a project to obtain financing.

Ideally, we want renewables located where the total cost of the renewable plus any needed additional facilities is lowest. The only way we can move close to this ideal is by ensuring that lands for transmission and renewables are readily available. These planning processes do not address this problem. While these issues prevent the many planning processes from achieving all that they ought to, there are additional roadblocks to renewables development, which I discuss below.

III. Roadblocks to Renewables Development:

The planning and siting process is duplicative and balkanized:

The interest in developing renewable supplies is a regional interest in support of national objectives. However, one of the main roadblocks to the development of renewable energy in the West is achieving local or state siting approvals for renewable generation and needed transmission. Parochial local interests sometimes use current processes to delay, and, in some cases, prevent altogether the development of generation or transmission. California has seen this arise repeatedly. When a California utility sought to site a transmission line through Arizona, the State of Arizona rejected the request because the proposed facility did not meet the needs of Arizona and Arizona ratepayers. Recently, in California, we engaged in a lengthy process to site new transmission in Southern California to facilitate access to new renewables. Again, local interests opposed this effort mainly because they did not want transmission sited near them.

In addition to parochialism, conflicting jurisdictions and the resultant overlapping planning processes lead to the identification of duplicative or competing projects. Potential transmission developers include investor-owned utilities, government-owned utilities, and independent transmission providers. But responsibility for planning varies depending on the location of the project (i.e., what state(s), and whether it is on federal land), and whether the developer is a private or a government-owned entity. And, for a given project, there is nothing to require one entity (e.g., a state commission) to honor or defer to the planning determination of another entity (e.g., a regional transmission organization).

In addition to planning duplication and overlap, siting approval for transmission in the west is typically subject to the approval of each state touched by the project, in addition to one or more federal agencies if the project touches federal land.

We illustrate these process problems in the next section in the context of SDG&E's Sunrise Powerlink transmission project.

SDG&E's Sunrise project illustrates the planning and siting problems

SDG&E's Sunrise project is a 123 mile 500 kV transmission line to connect the San Diego load center with the Imperial Valley substation. Originally proposed for operation in 2010, SDG&E now anticipates that the line will be completed in June, 2012.

We expect that much transmission siting in the West will face a process similar to that applied to Sunrise. The Sunrise project requires separate state and federal administrative siting processes, each subject to separate judicial appeals. For Sunrise, state approval is required from the CPUC, which approval is subject to administrative rehearing and appeals before the state courts of appeal and the California Supreme Court. SDG&E first applied to the CPUC for Sunrise approval in December, 2005. The CPUC granted the Sunrise CPCN in December 2008, and a CPUC decision on rehearing is expected this month. The state judicial appeals could take until mid-2010 to resolve.

On the federal side, required discretionary approvals include the U.S. Department of Interior, Bureau of Land Management ("BLM") and the U.S. Forest Service (USFS) under the U.S. Department of Agriculture. The Sunrise application for BLM approval was filed August 4, 2006. We acknowledge and appreciate the efforts of both agencies to process the Sunrise application. BLM, for example, completed a thorough and detailed environmental review in close coordination with the state that has helped advance the project. But the fact remains that the law provides parties with separate administrative appeal rights for each agency. All signs are that project opponents will avail themselves of all appeal rights. And, after the administrative appeals process, any judicial appeals of BLM and the USFS decisions begin at the federal district court level, giving opponents rights to two layers of judicial appeals (the second layer is to the circuit courts of appeal), adding years of uncertainty to a multi-year administrative permitting process. We expect any appeals of the two federal agency decisions to be resolved no earlier than March, 2013. In con-

trast, FERC decisions licensing natural gas transmission are subject to only one level of judicial appeal rights—to the circuit courts of appeal.

Other projects in the West will endure planning conflicts similar to that faced by Sunrise. The CPUC had identified a need for a project like Sunrise in a December 16, 2004 decision on resource planning. After an extensive study with substantial stakeholder input, the CAISO, California's FERC-regulated regional transmission organization, formally found a need for Sunrise in August, 2006. But no weight or deference was given to these prior determinations in either the state or federal environmental reviews of Sunrise that followed, even though both earlier need findings included robust consideration of alternatives. This forced SDG&E and regulators to commit substantial time and resources to re-visit (and indeed, re-litigate) need several times.

In the end, renewables development will not occur to any significant degree if strictly parochial interests are allowed to govern siting decisions.

The siting process has become cumbersome and balkanized, leaving open the potential for considering the same issues multiple times. Deadlines for prompt resolution either do not exist, or are generally ignored. In the Sunrise process, in spite of what may be recited in regulations, we found no enforceable deadlines that appeared to constrain the timing of agency disposition of the several Sunrise applications. Congress could help here by mandating adherence to strict permitting guidelines, with common deadlines for final project decisions.

Environmental impact reports can be immense, and could benefit from deference and/or incorporation by reference of determinations of other agencies. As it is, duplicative siting and relitigation of previously decided issues further drag out the time and cost to complete a siting process. For instance, the official Sunrise record (Environmental Impact Report/Environmental Impact Statement, evidence, hearing transcripts, etc., stretched to over 25,000 pages). Indeed, it is well known that some use the siting process not to engage in a fair consideration of the issues, but to drag things out long enough to force project proponents to abandon their projects or to pursue inferior alternatives. The prospect of such impediments and the risk of losing millions of dollars on an abandoned a project, manifestly chills the development of renewables.

Finding Development Sites is difficult

We do understand the concerns about siting facilities in sensitive environmental areas, and we, of course, recognize the interest of minimizing the environmental impact of renewables and transmission. But, it is important to understand the difficulty of finding any land at all to develop renewables and transmission. The attached map (Attachment 2) illustrates the types of potential constraints to developing renewables and transmission in Southern California, including the area traversed by Sunrise. This map shows a broad range of environmentally sensitive areas. On top of these, potential transmission or renewables developers must also consider state parks and forests, military lands, and tribal lands, which could include sensitive archaeological sites) as further potential areas where development may be limited or proscribed. With all of the areas that are off limits, we must understand in assessing the potential that many of the options for renewable production are in fact already off the table. So, it is even more important that we plan in a manner to facilitate the development of the sites that remain. This map also demonstrates the extent of the jurisdictional balkanization that adds extra administrative hurdles in developing linear facilities like transmission lines.

IV. How Congress Can Help

These are not simple issues and the solutions to them are not going to be without controversy. The suggestions I offer today are likely not to be the universe of good actions, but they offer some additional perspective on the areas we believe need to be addressed.

We suggest that Congress look to the following actions to improve the development of renewables and supporting transmission:

1. Encourage and incentivize States to coordinate on regional transmission plans that access areas of potential renewables development, but avoid duplicative processes. Planning processes that are too narrow encourage parochialism.
2. Identify federal lands that may be open to renewables development and encourage use of specific and clearly identified federal lands for transmission corridors, congruent with or adjacent to areas where renewables may develop.
3. Encourage the trading of verified renewable energy credits.
4. Entrust regional transmission organizations with the primary responsibility for regional planning, and provide that such determinations must be given deference by other state and federal agencies.

5. Develop common siting principles that must be honored, such as those that follow existing corridors and other linear features such as roads, and that otherwise focus on previously disturbed areas. Where existing corridors are too small, it is likely that expansion of those corridors will be the least impacting option, and should be considered among these common siting principles.
6.. A single federal administrative forum for federal transmission line siting applications, including the right of affected federal agencies to participate, would vastly simplify the siting process, and provide a focus for all stakeholders, without compromising environmental regulations. Provide for judicial review of this forum's decisions at the circuit courts of appeal.
7. Streamline and facilitate siting of transmission by mandating adherence to strict permitting guidelines, with common deadlines for final project decisions.
8. Encourage the "supersizing" of new transmission facilities to maximize efficient energy delivery, minimize environmental impacts, optimize corridor utilization, and to strengthen the grid to permit regional bulk power transfers of renewable energy.

The Sempra Energy utilities appreciate the opportunity to participate in this proceeding and we stand ready to assist in the deliberation of these issues and the development of effective solutions.

Attachment 1

Renewable Capacity Available to Western United States

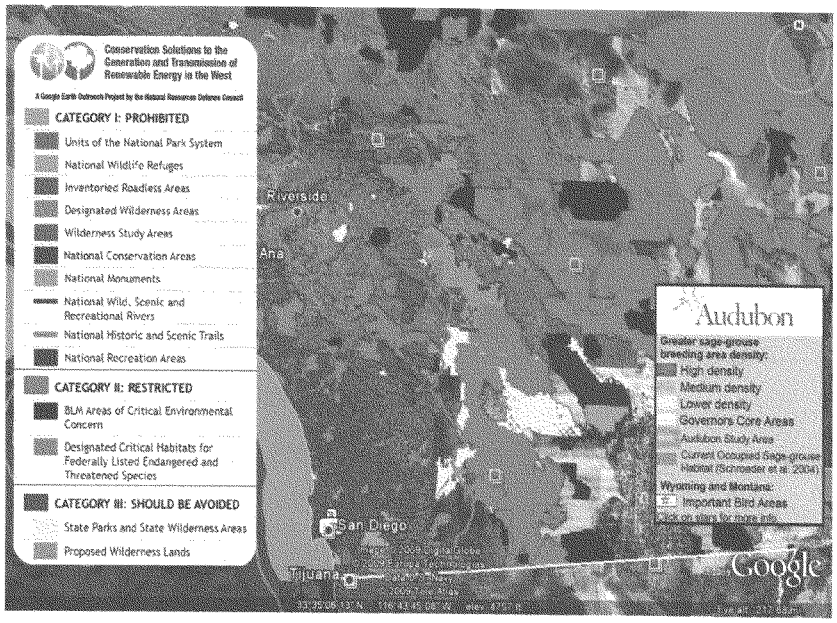
Total Renewable Resource Availability by Region (MW)

	Biogas	Biomass	Geo-thermal	Small Hydro	Solar Thermal	Wind	*Total*
Alberta	-	-	-	100	-	11,999	*12,099*
Arizona-Southern Nevada	33	43	-	-	141,243	1,809	*143,129*
British Columbia	50	208	185	1,521	-	4,601	*6,565*
California	300	600	3,063	221	310,133	23,762	*338,080*
Colorado	59	44	20	-	18,050	5,138	*23,310*
Montana	5	162	-	37	-	54,542	*54,745*
New Mexico	18	26	80	-	66,897	11,066	*78,087*
Northern Nevada	15	15	1,281	10	150,062	5,523	*156,906*
Northwest	88	1,060	335	230	-	17,039	*18,753*
Utah-Southern Idaho	21	181	1,040	221	43,153	2,805	*47,421*
Wyoming	2	22	-	17	-	138,721	*138,762*
WECC Total	*592*	*2,361*	*6,004*	*2,356*	*729,538*	*277,005*	*1,017,856*

Source: *Energy and Environmental Economics, Inc. on behalf of the* Western Electric Industry Leaders (WEIL) Group, from page 22. Available on the internet at -- http://www.weilgroup.org/E3_WEIL_Complete_Study_2008_082508.pdf

Attachment 2

Map of Areas Potentially Restricted to Renewables and Transmission Development



Source: "Toward 2020", Committee on Regional Electric Power Cooperation April 8 – 9, 2009, page 10, Western Electric Industry Leaders Group - Strategic Thoughts

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Response to questions submitted for the record by Michael R. Niggli

Question No. 1: Mr. Niggli, please provide your opinions on how the various interagency Memorandum of Understandings that have been signed between the federal agencies and the state agencies have been working. Has there been an improvement in planning and permit processing, or does more need to be done to improve coordination?

Response: State and federal efforts to identify renewable energy sites and transmission corridors have made progress at developing long range frameworks. Groups like the Renewable Energy Action Team (REAT), Renewable Energy Transmission Initiative (RETI), and the Western Renewable Energy Zone (WREZ) work conducted by the Western Governors' Association have all collected significant data about energy zones and ways to inter-connect them. Their recommendations will be valuable. The challenge will be to transition from the planning stage of siting transmission lines, to obtaining permits, and, then to begin construction in a reasonable amount of time.

In anticipation of meeting this challenge, I offer four key thoughts:

Reduce Jurisdictional Overlap—Generally, several state/ federal agencies are involved in regulating renewable energy projects. Due to individual agency mandates, renewable project developers face significant time hurdles and uncertainty.

A key improvement would be to reduce the number of agencies involved by consolidating responsibilities to fewer agencies. This might be carried out by transferring permitting responsibility to a new agency solely responsible for renewable projects. Or, place more responsibility in the hands of an authoritative state agency and the Department of Energy (DOE). In turn, these agencies would jointly dictate goals, administrative processes, and schedules, to staff dedicated to renewables.

One Stop Shop—Renewable projects would benefit by having key representatives of state and federal agencies working collectively toward joint goals, possibly located all under one roof. This would improve communication and efficiency.

Dedicated Staff for Renewables—State and federal staff frequently carry multiple project workloads. Having dedicated staff to renewables will allow focus and time dedication to renewable projects.

Shift from traditional Regulator arrangement to Project Manager—The permit process is typically constrained by multiple processes controlled by many people. An improvement would be to grant overall authority and responsibility to one project manager assigned by a state or federal agency for each renewable project. Ideally, the project manager could set goals and expectations for all supporting staff. This arrangement would reduce time delays and increase overall efficiency.

Background Information

Examples of groups or regulations attempting to streamline renewable efforts—Well intended efforts are being made, but these visionary goals slow down due to regulatory details.

- Governor Executive order S-14-08—State agencies to work with federal agencies to streamline.
- Renewable Energy Action Team (REAT)—Blend of state and federal agencies to streamline core areas for large scale renewable generation.
- Renewable Energy Transmission Initiative (RETI)—Blend of state and federal agencies with mission to streamline approval of transmission corridors.
- Federal Energy Policy 2005, Section 368—Federal energy policy to identify western transmission corridors and then promote amendments to land use plans of various federal agencies. Private & Indian lands not included, federal lands only.
- Federal National Energy Policy 2005, Section 1221—Federal mandate for the Department of Energy to designate National Interest Electrical Transmission Corridors. An application can be made to the FERC to license projects in such corridors if all else fails. Indian lands not included.
- State AB 1059—State mandate to CEC to designate transmission corridors

Sample list of agencies/authorities that must be addressed with existing regulations.

- Federal Land Management Policy Act (FLMPA)
- Federal Section 106 (protection of cultural resources)
- Clean Water Act and connection to ACOE 404 program, Regional Water Quality Board certification, etc.
- Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- National Environmental Policy Act (NEPA)
- California Environmental Quality Act (CEQA)
- National Historical Preservation Act (NHPA)

Below is a list of multiple agencies. Fewer agencies with more authority may be the right answer for streamlining approvals.

- Bureau of Land Management
- United States Fish & Wildlife
- Various national Forests
- Individual military bases
- Individual Indian tribes
- California Energy Commission
- California Public Utilities Commission
- California Department of Fish & Game
- State Regional Water Quality Boards

Question No. 2: Mr. Niggli, one of the concerns raised about the Sunrise Powerlink project is that it could be used to transmit non-renewable energy from Mexico into San Diego. Are there any guarantees that it will be used only for renewable energy?

Response: The Sunrise Powerlink will become part of the integrated electrical grid in California that will be operated by the California Independent System Operator Corp. ("CAISO"). The CAISO is obligated by its FERC tariff and by FERC rules to provide open and non-discriminatory access to all transmission customers and sellers. With the decision ultimately resting with the CAISO, SDG&E cannot guarantee what types of power will flow over Sunrise. However, SDG&E has made the following substantial commitments to ensure that Sunrise Powerlink will be used to transmit renewable energy:

1. SDG&E committed to not contract with coal generators for the delivery of energy across the Sunrise Powerlink.
2. SDG&E committed that in the event that a current contract for a renewable resource deliverable by Sunrise fails, we will seek to replace energy with another renewable resource from that same region.
3. SDG&E voluntarily committed to raise the Renewable Portfolio Standard (RPS) target to 33 percent by year 2020.

SDG&E made these commitments on the record in the final oral argument before the CPUC in hearings for the Sunrise Powerlink on November 7, 2008, and SDG&E submitted the commitments to the CPUC in writing in comments on an alternate proposed Sunrise CPCN decision (COMMENTS OF SAN DIEGO GAS & ELECTRIC COMPANY ON ALTERNATE PROPOSED DECISION OF COMMISSIONER GRUENEICH, Nov. 20, 2008, pages 15-17). The CPUC Decision approving Sunrise (at pages 173 and 265) states that SDG&E will be held to these commitments.

Further, these commitments are made in a context reinforcing that Sunrise will be used to transmit substantial amounts of renewable energy. With respect to SDG&E's commitment to replace any failed renewable contracts, the CPUC decision noted that SDG&E already had contracts with several such renewable energy resources totaling 2,253 gigawatt-hours per year. Id. at 265, fn. 680. And, under the CAISO's non-discriminatory operation, renewable generation is likely to get dispatched first because of its very low operating costs.

Question No. 3: Mr. Niggli, do you believe it is a better strategy to pursue a smaller number of very large solar plants, or a larger number of smaller projects, in order to meet a certain renewable energy goal?

Response: SDG&E has established no preference of a smaller number of large solar plants or a larger number of smaller projects. Ultimately, all market segments must be appropriately utilized. As one example, SDG&E's proposed Solar Energy Project specifically targets smaller scale solar projects tied to its distribution system in a complementary fashion to other existing distributed renewable generation programs in the State of California. However, under the Renewable Portfolio Standard (RPS) SDG&E also annually solicits large scale renewables, which will be delivered via electric transmission lines. Economies of scale would seem to suggest that larger installations will be needed for SDG&E to achieve its renewable goals.

Mr. COSTA. Well, thank you. You as well have 13 seconds left, and so we will use that time wisely.

I will begin with my questions. Mr. Malnight and Mr. Niggli, do both of your companies support a national renewable energy standard?

Mr. MALNIGHT. Yes, I will go first. You know, I think PG&E is generally supportive of that. I think as with all energy standards, as we have seen in California, the devil is in the details of how those get designed and built. And we, you know, are anxious to work with stakeholders to help in thinking about——

Mr. COSTA. And you are participating, what, in California.

Mr. NIGGLI. Yes. We have no problem with the national standard. California is by far the most aggressive in renewable portfolios. And I think the question is, really, are you going to have an RPS or are you going to have a greenhouse gas standard? At the

end of the day, for a national RPS to work you do need renewable energy credits.

We think that is a part of this process that has to happen. And the State should have some leeway in determining whether they exceed the minimum standards, certainly as California probably would do.

Mr. COSTA. Now, you both spoke about the need in terms of the collaborative process and the good things that are coming as a result of RETI, the renewable energy transmission effort. And also, the other efforts with the energy zones that BLM is dealing with, and the 368 process.

But it seems to me that both of you may raise some important points. Unless you understand clearly that there are corridors that are going to be able to have the capacity to carry this energy and that there are some timelines under which they are going to be approved, that one can't be held up in litigation forever for those who—I mean, mitigation is one thing.

Litigation, because I simply don't want it ever to happen, is—I respect some people's view, but sometimes I differ with people. There has to be—if you really want to have a renewable portfolio standard, you have to be able to make this work, right?

Mr. NIGGLI. Steve, I will start on this one.

Mr. MALNIGHT. Please.

Mr. NIGGLI. And the answer is absolutely yes. You have to think about the electricity system as a superhighway system of some kind. Forty years ago, the Pacific Northwest-Southwest Intertie was built. That brought tremendous amounts of hydroelectric energy from the Northwest to the Southwest, and it really was the first renewable line, if you think about it, in terms of great exchange of energy.

We need to have those kinds of exchanges put in place around the western United States for renewable to work well. It is an intermittent resource. It will not always be there, and you need to move the power from different areas, and you need a strong transmission system to do that.

At the end of the day, all of the work that is being done in the corridors, we have to have consensus amongst the environmentalists, amongst the energy companies, and the developers, that there are some reasonable no-regrets corridors that can be developed to work toward a solution for society on this.

Mr. COSTA. Some timelines.

Mr. Malnight?

Mr. MALNIGHT. Yes.

Mr. COSTA. Do you want to add to that?

Mr. MALNIGHT. I don't have much to add, except to reemphasize the point that I think certainty for the developers of these facilities is really critical. These are very capital-intensive plans, and the ability to have certainty on your development is very critical for success.

Mr. COSTA. Mr. Corcoran, you talked about the focus on lands that have already been disturbed and appropriate for development. I had asked that question with one of the other panelists. What sort of Federal action should be taken to improve that inventory?

Mr. CORCORAN. To improve the inventory of those private lands, I think what we need is to have resources, both at the state and Federal level, to inventory those areas, to be able to work through the natural resources present on those areas, and to be able to, you know, thereby prioritize them. It is just a lot coming through a pipeline, and we need to——

Mr. COSTA. Provide more information.

Mr. CORCORAN. Yes.

Mr. COSTA. Also, it sounds like on behalf of the Sierra Club, if I heard you correctly, you favor a two-track approach where some plants get sited more quickly, because their due diligence has been done and the transparency is there, and others need a more careful process. Do you think it is feasible?

Mr. CORCORAN. Do I think it is feasible? I think it is what we must do, so let me just answer it that way. I understand that there must be steel on the ground or at least going forward at the end of 2010 with the stimulus package, so we are learning as we go in this process. Right? And so there will be those early projects that we are going to need to do the best we can to put those on areas that are already degraded.

Long term, we have to think about how we will use public lands for this use, because it displaces all other uses on that area. But in the short term, there are necessary challenges to meet——

Mr. COSTA. What is the better strategy, smaller footprints, smaller projects, or a few larger projects that have larger footprints? Or have you opined on that?

Mr. CORCORAN. I am not thinking of it in that way, so I am not sure how to answer the question.

Mr. COSTA. All right. Have you raised a response on Senator Feinstein's proposal on the expansion of the Mojave National Monument effort?

Mr. CORCORAN. We believe it is——

Mr. COSTA. On the Catellas lands?

Mr. CORCORAN. We believe it is important that public lands that were bought and otherwise provided Federal ownership for the purposes of conservation should be given that conservation protection.

Mr. COSTA. Do think within the—you know how we work on legislation.

Mr. CORCORAN. Yes.

Mr. COSTA. I mean, you put it out, it becomes work in progress, everybody opines of different views. And then, usually most legislators try to develop a consensus. Senator Feinstein has done that over the years on her legislation. I tried to do that with mine, and you make modifications/changes there.

I mean, I think that when you look at that map, and when you look at California and that map, it is critical that you don't take away the resource at the same time you are trying to protect some valuable lands.

Mr. CORCORAN. Absolutely, that is correct. And I believe that by protecting the Catellas lands it is still more than possible to provide the energy we need from remote renewables, as part of an overall outcome of energy efficiency distributed generation and remote generation, to meet our RPS standards.

Mr. COSTA. And so you think with developing that robust renewable portfolio that it is possible, even in that proposal, to make the accommodations for the transmission corridors and for the sites that are maybe held on private lands and maybe have multi-use to in effect make it a win-win situation. Those are my words.

Mr. CORCORAN. I believe that that is the direction we need to move in, and it underscores why, from my perspective, having the resources to more rapidly identify areas that are degraded, and to look for ways to create a Federal nexus with private lands, such as the zoning that I mentioned, we can look for ways to build financial packages that provide developers the certainty they need to go forward. And doing this in a way that we won't pass regrets on to future generations, that we unnecessarily sacrificed pristine desert lands in our moves now, in our essential moves now, on meeting our renewable portfolio.

Mr. COSTA. I am going beyond my time. But you understand that the certainty from the private sector and the public utilities is critical.

Mr. CORCORAN. I agree. And it is a certainty that must be balanced with a certainty for American citizens that their public lands will be used appropriately and in a process that——

Mr. COSTA. This is a Federal trust we all share. We understand that. But also, the alternative is clean energy and renewable energy. And so, you know, I mean, do you think the other environmental organizations share that view?

Mr. CORCORAN. Which view is that, Chairman?

Mr. COSTA. My view.

[Laughter.]

Mr. CORCORAN. I am not able to speak for them. I will defer.

Mr. COSTA. No. I like to have a little humor. I hope you have all noticed here this morning in the audience. No, I mean the view that there has to be a balance, and that if you don't make these renewable projects work for all of the right reasons, or if you are just—your only response is no, that you can't have it both ways.

Mr. CORCORAN. And that is exactly right. This is a challenge to our movement, insofar as you can't just say no. It is not responsible. Therefore, we need to look for ways, but also bringing to the table the decades of experience. There is a robust desert conservation community in California with unmatched knowledge of the land. And so it is very important to find ways to bring that to the table, so that we can expedite——

Mr. COSTA. Because I really think there is a challenge to environmental organizations throughout the country. There was that story that Carl was quoted and in The Wall Street Journal, and it appeared in other news organs, but about the need that—that there needs to be now an affirmative response to for environmental organizations to work on supporting these type of good, renewable projects.

Mr. CORCORAN. I believe there are responsibilities all around the table to find——

Mr. COSTA. Yes.

Mr. CORCORAN.—the solution that works.

Mr. COSTA. Good. I have gone way beyond my time. I probably won't get invited back, but my——

[Laughter.]

—colleague from Wyoming, Ms. Lummis.

Ms. LUMMIS. Well, thank you, Mr. Chairman. I think you will get invited back. I just have a feeling about that.

My first question is for Ms.—is it Gensler? You mentioned that no permits are being issued. Some have been pending since 2005. Was that a California number or a U.S. number?

Ms. GENSLER. That is westwide, well, U.S., but primarily focused in the west.

Ms. LUMMIS. And is that because the BLM land use plans for the most part did not address solar energy development, and this more comprehensive EIS will amend land use plans to accommodate the potential for solar uses?

Ms. GENSLER. I think that is part of it. Some of it is also staffing resources. This is a technology that is new to many of the BLM staff, and so just getting up to speed and having the knowledge base internally has been a challenge. But you are correct in noting that many of the land use plans do not account for solar development in the current managed lands, and so it becomes a one-off decision for each of these projects. The PEIS is intended to update all of those plans to accommodate solar development.

Ms. LUMMIS. Thank you. And both Mr. Malnight and Mr. Niggli mentioned permitting, and both post-decision and pre-decision permitting. And what struck me is: should all of this be transferred to FERC? I mean, there you have a superagency that does deal with natural gas pipelines and it sort of transcends other agencies.

So, when you mentioned—one of you mentioned—that one agency should be named the lead agency for various aspects of permitting. I believe that was you, Mr. Malnight. And, Mr. Niggli, you mentioned that post-decision issues, such as appeals, you know, IBLA, District Court, Court of Appeals, versus the FERC process, which goes straight to the Court of Appeals, do your statements argue for FERC superseding these other agencies?

Mr. MALNIGHT. Well, let me comment real quickly on that first. I think that we actually have an architecture of collaboration now that is moving in the right direction and is encouraging. I wasn't necessarily meaning to advocate for a complete change in that structure.

I think when I was commenting on one agency as a lead for each topic certain agencies have more knowledge and more expertise in different topic areas. And having each of those agencies play a lead role and coordinate with other agencies on those topics I think would help speed that process through.

Mr. NIGGLI. I think at this time it is not necessary that we have FERC as the lead agency here. I would like to address the pre-permitting area. When you look at all of the activities that are going on right now, one of the things that happens is there are so many transmission proposals that come out from independent folks, from investor owned, from municipalities, and some of them overlap, some of them are duplicative. And in some way we need a regional transmission organization that can sift through those and analyze them and then say, "Here is the ones that should go forward."

Now, the decision on those going forward are within the states, and the states' rights, and they can make those decisions based on

the data, the environmental impact, and the economic arrangements. But I think you do need somebody on the front end that can help sift through those, and their decisions on need essentially are deferred to or deferential in terms of the region.

On the back end of the process, on the litigation process, I think it would be very helpful if we did have some kind of a process that allowed fewer steps and fewer opportunities to drag out the decisions or drag out the litigation.

Ms. LUMMIS. And have you submitted any proposals for how the process can be streamlined, literally, as amendments to current law?

Mr. NIGGLI. We have not. We have been working through with the Western Governors' Association to try to ensure that the wider regional work that is going on right now can be effective in this area. And I think there is a lot of good work being done, but there is more to do.

Ms. LUMMIS. And the great thing about the Western Governors' Association, I really want to tout it, because I used to be on the staff council for WGA, is that they do take from various agencies sort of interns to have long-term relationships with WGA, so they can serve as coordinators. And it is a great avenue for collaboration. So, I commend your mentioning it, and I want to pass along my kudos to them.

That is all the questions I have, Mr. Chairman.

Mr. COSTA. All right. You have 22 seconds. You get several stars.

Next witness. Next witness? Next——

[Laughter.]

I am sorry. I misspoke. Our Congresswoman Mary Bono Mack, for five minutes.

Mrs. BONO MACK. Thank you, Mr. Chairman. To Congresswoman Lummis' point, you know, the FERC having overall jurisdiction and oversight of everything, I know that uniformity is exciting to the utilities, but I love FERC having total responsibility as long as they are very responsive to Congress. And my Committee has jurisdiction over FERC, and sometimes they don't necessarily see things the way we would like for them to see them. But in any event, I understand the uniformity question, and your question I think is a very good one. I am happy to work with you further on that on the Floor.

But I want to just—Councilman Ferguson earlier talked about feed-in tariffs, and I would love to know from the two utilities how you feel about feed-in tariffs. It just seems to me to make perfect sense that if I am going to invest in solar panels on my house and generate electricity, that I ought to be able to reap the benefit. So, I would love to get your thoughts on the feed-in tariff, please.

Mr. NIGGLI. Do you want me to start on that, Steve?

Mr. MALNIGHT. Sure, go ahead.

Mr. NIGGLI. OK. There are a couple of things to feed-in tariffs that we look at. We are not a carte blanche supporter of feed-in tariffs, primarily because we want the marketplace to work, and we want to get the lowest cost energy, generally through bids that we get.

Now, on solar rooftops, most people have the incentive that in the higher tiers, the blocks of energy that are priced higher, they

can offset those with solar energy. So, if that makes sense for their consumption, they should go ahead and utilize the solar—the million roofs program and other programs to save them money.

The thing that we worry about is some of the things that have happened in Europe. For instance, if you built a large-scale solar plant here, you might be able to build it for $150 to $200 per megawatt hour. In Spain, and in Germany, they have had feed-in tariffs that are $400 to $600 per megawatt hour. That certainly helps the developers. The developers can put those up all day long, but it doesn't necessarily help the consumers to get the best priced energy.

Mr. MALNIGHT. From PG&E's perspective, I think I share a lot of the sentiments that Mr. Niggli just commented. I would say we are the largest investor-owned utility in California that has deployed California solar initiative homes, and we are a strong supporter of that program.

On the feed-in tariff, the other things that I would highlight, we do need to ensure that, as the sites get larger and larger under a feed-in tariff, they would need to have performance guarantees and performance requirements from an operations perspective, so that we can maintain operability of the system. Obviously, as these sites get very large, they can have a tremendous impact on the electric system when they come on and off.

Mrs. BONO MACK. All right. Also, why are we still using decades-old transmission technology? And I know we are all waiting for this smart grid technology to come online. But in the meantime, can we do a lot to improve the efficiencies of transmission? Aren't there new technologies out there in powerlines themselves? And are you doing that? And, if not, why not?

Mr. NIGGLI. That is a great question. We have all got smart grid initiatives going on right now. It won't change the basic concept of how electricity gets delivered, generally speaking. But I will give you an example of some things that have happened over time where the grid gets stronger and stronger as you add elements to it.

When we built the Southwest Powerlink, which connects Arizona to San Diego, in 1984, the capacity that we received on that line was about 580 megawatts or so. Over time, that system got stronger with the addition of other elements around it, and today we get 1,700 megawatts of capability out of that line. So, the utilities are doing everything they can to squeeze every electron out of that system, because every one you can do with existing resources is almost free. It is much better than having to put up a new transmission line.

Mr. MALNIGHT. I don't really have anything to add to that.

Mrs. BONO MACK. Well, it just seems to me that you can squeeze it out for free, but you are not investing in future technology. So, you are justifying using old technologies for the bottom line, when in fact there are much better technologies out there. So, maybe, carbon fiber transmission lines, new technology, so the heat in the line doesn't cause the sway. Aren't there, really, technologies that are shelf-ready out there right now that you could be using that you are not?

Mr. NIGGLI. There is not really—like, carbon fiber will not get us the amounts of power, the bulk power capability that we have to deliver.

Mrs. BONO MACK. Will it improve it?

Mr. NIGGLI. It probably won't. I don't think you will see carbon fiber necessarily doing that. There is a lot of materials technology work that has to be done to allow that to carry the same amount of power that, say, a 500,000-volt transmission line would right now. So, there are some things you can do in terms of how you control and operate the system that the smart grid will help us continue to best use our assets.

Then, breakthrough, if you ever got to essentially low-cost or lower-cost underground capability, I think you would have the ability to deliver from one side to another without the environmental impacts that you see today.

Mrs. BONO MACK. You said—and I know my time is up. You said "probably not." Are you standing by "probably" or are you standing by "certainly not"? Because I would like that actually answered in writing if I could get it from you, that you could be doing a lot more to increase your transmission capabilities and efficiencies. You said "probably not." So, I don't know if you knew the answer or if you are taking a stab at the answer, but I would really like the answer, if you could provide that in writing. Later is fine.

Mr. MALNIGHT. Certainly, we can, Congresswoman. I think—I want to make sure I had your question. Your question I think was around whether new capacities, new technologies like carbon fiber, could possibly be used in the not-too-distant future. We would be glad to answer that.

Mrs. BONO MACK. Thank you.

And I thank the Chairman very much.

Mr. COSTA. Not a problem.

Mrs. BONO MACK. You are welcome back in my District any time.

[Laughter.]

Especially if you spend a lot of money.

Mr. COSTA. OK.

Mrs. BONO MACK. We appreciate it very, very much.

Mr. COSTA. Visited a casino, only for observation purposes, last night.

[Laughter.]

Mrs. BONO MACK. Take a tour of the casinos, if you would like.

Mr. COSTA. Yes, yes.

We have room for I think another round here, so let us go quickly, and hopefully the Congresswoman from Wyoming will get a chance. I will go quickly.

Ms. Gensler, all of the solar private industries that are testifying, the discussion out there between solar thermal and solar voltaic on the utility scale of projects. Any preference with the technology and the water issues as you know? And PG&E has a solar thermal project in my area, a pilot project, and they are looking to expand that if it works out well to 150 megawatts. Quickly.

Mr. MALNIGHT. We actually need both, I think, and we look forward to both of those competing against each other to continue to reduce the costs. As far as water, you know, PG&E is evaluating both dry and wet options. We have invested our gateway thermal

facility in dry cooling and believe that that is a very viable option, and we will look at both of those.

Mr. COSTA. Very water efficient.

Mr. MALNIGHT. Yes.

Mr. COSTA. Mr. Corcoran, do you care to make any comment?

Mr. CORCORAN. Dry cooling is the direction we would love to see them go in. It will increase opportunities to use degraded areas as well.

Mr. COSTA. All right. Ms. Gensler?

Ms. GENSLER. We have members who develop all sorts of technologies. We are just happy to see anything be deployed in the State of California at this point. But certainly everything has a different consideration.

Mr. COSTA. All right. Mr. Niggli?

Mr. NIGGLI. Nothing to add, sir.

Mr. COSTA. Nothing to add.

On your Powerlink, Sunrise Powerlink, that you referenced, are you going to have excess capacity for renewable energy?

Mr. NIGGLI. We are going to have 1,000 megawatts of capability. We have signed up almost all of that capacity either between us, Southern California Edison, or Pacific Gas and Electric, to utilize the capability of the transmission.

Mr. COSTA. OK. You talked about we need more than just a well-coordinated planning process, or just another planning process. What did you have in mind?

Mr. NIGGLI. Well, primarily that as we go forward and we agree upon corridors that need to be put in place in the western United States, that those planning processes that are underway to determine that actually have——

Mr. COSTA. Well, it has to be a permit at the end of the day, right?

Mr. NIGGLI. It has an impact on licensing.

Mr. COSTA. Bingo.

Mr. NIGGLI. Absolutely.

Mr. COSTA. We are thinking along the same lines.

Ms. Gensler, you said that Congress should support the use of BLM land for mitigation easements. Could you elaborate on that idea very quickly?

Ms. GENSLER. I did. And I would defer to the Nature Conservancy also, who is coming up with some interesting easement ideas and mitigation strategies called non-acquisition mitigation. But to the extent that BLM land is deemed inappropriate for solar development and possibly for other types of development, we would like some kind of crediting mechanism, so that that land can be used for mitigation to better enable a solar project to be developed.

Mr. COSTA. What do you think on the update on the Section 368 corridors that BLM is leading?

Ms. GENSLER. I think it would be fantastic if BLM actually considered renewable energy development. It was a bit of an afterthought the last time.

Mr. COSTA. So you think it is an add-on, and it should be part of the process. You don't think they should start over again, do you?

Ms. GENSLER. I think we can take everything we have already done and work with it.

Mr. COSTA. That wouldn't be good, no. OK.

Mr. Malnight, what sort of timelines would PG&E like to see imposed on the BLM review process for solar right-of-away?

Mr. MALNIGHT. Well, certainly faster is always better. I think that, you know, I am not sure exactly what day or what month I would propose to you right now. I am happy to give you a written answer for that. But, clearly, we need to provide a lot of coordination between the agencies to improve the timeline of that.

Mr. COSTA. What has been your experience on the seven-year timeline that I was just somewhat——

Mr. MALNIGHT. From transmission.

Mr. COSTA. Yes, to site a transmission line.

Mr. MALNIGHT. I think that that is in the ballpark.

Mr. COSTA. Yes. And any way you think we can improve on that?

Mr. MALNIGHT. Well, as I mentioned before, I think enhancing the coordination and really, you know, working together is the right answer.

Mr. COSTA. All right. The effort that we are embarking upon, it just seems to me that we have been talking about collaboration and coordination, but the Federal Government truly—and I was talking back and forth to some of my colleagues here in between questioning—needs to get our own act together.

We have provided a tremendous amount of money in the stimulus package to the Department of Energy, but the Secretary of Energy laments to us that, you know, historically, they have not done a very good job in getting grants out, getting projects out. As a matter of fact, he has a monthly meeting with the EPA and the Secretary of Agriculture and others. I mean, he even told me personally that he thinks USDA does a better job of getting grants out. I know USDA doesn't do that good of a job. So, if he is looking at that—

We have increased their budget significantly, but I think some of my colleagues' comments to whether or not we choose FERC as the lead agency, or whether we choose some other—we have too many cooks in the kitchen, for lack of a better term.

Mr. Corcoran, would you care to opine on that? I have got—very quickly, because I want to——

Mr. CORCORAN. I think the cooks are getting together to figure out what they are doing here in California. I——

Mr. COSTA. How about in Washington?

Mr. CORCORAN. It is starting to come together, and——

Mr. COSTA. It needs a lot of work.

Mr. CORCORAN. It needs a lot of work, you bet, but I would be very cautious about embedding power in one particular place, because these are decisions that affect local communities, they affect a lot of folks, and we are also trying to see where we can get with energy efficiency and distributed generation. You don't want a process that is run to emphasize one part of the clean energy solution for the United States.

Mr. COSTA. Because you agree with me we ought to use all of the energy tools in the energy toolbox, right?

Mr. CORCORAN. We do. And we need to use them responsibly and to protect the conservation outcomes we have achieved over the last few decades.

Mr. COSTA. OK. My time has expired.

The gentlewoman from Wyoming. Five minutes.

Ms. LUMMIS. Thank you, Mr. Chairman. And following up on your comments, could the Western Governors' Association and its counterparts in other regions be the lead agency? Anybody?

Mr. NIGGLI. I will start on that. I think they can be a lead agency and very influential in the mega-planning that goes on with the corridors that need to connect the western renewable energy zones. I think that is probably a natural place. I am not sure that they are necessarily the lead agency when it comes to, say, siting the transmission lines themselves.

The only reason I say that is that every single generation project we have ever looked at ultimately involves both state and Federal, because of the transmission element. And you need to have that active state participation.

Ms. LUMMIS. Maybe we could create something—now I am just thinking out loud—that would involve the Warious Governors' Association's regional entities and Federal agencies that is somehow sanctioned by Congress. But, again, I am just thinking out loud.

I wanted to let you know about your comment about non-acquisition mitigation, something that we are doing in Wyoming that I think has promise. The companies that are developing the Jonah Infill and the Pinedale Anticline for natural gas production are having massive cumulative impacts on the environment, the air environment, the wildlife corridors, and so forth.

And so what they are doing is putting some funds together that may be used both within Wyoming's Wildlife Trust Fund and as their individual company mitigation projects to do acquisition not of easements, because easement at least implies perpetuity, but conservation leases on certain properties that can serve as non-acquisition mitigation for impacts on Federal and private lands with regard to these cumulative impacts. So, just a thought there.

And, let us see, third thought. Mr. Chairman, I am going to yield back. Thanks.

Mr. COSTA. Wow, you are really buttering me up. You have two minutes and 40 seconds left. I guess that accounts for the time that I exceeded.

Our last questioning is from our able member, Congresswoman Bono Mack.

Mrs. BONO MACK. Thank you again, Mr. Chairman.

Mr. Corcoran, first, I would like to welcome you for the Sierra Club. I would point out that one of the best advocates is here in the audience. That is Joan Taylor. I am surprised she is not testifying. She would have done a great job. She is a very capable voice for the Sierra Club here and is in my office frequently, and does a fantastic job I think of bringing all sides together. I hope you follow her model in leadership in these areas.

But my question, really, is for you. And I don't know how familiar you are with our multi-species habitat and conservation plan, the systems that we have out here where we plan for the mitigation. Are you familiar with them at all?

Mr. CORCORAN. With the model of them, yes.

Mrs. BONO MACK. Yes.

Mr. CORCORAN. OK. In specific, I would say Joan should be at the table.

[Laughter.]

Mrs. BONO MACK. Well, thank you. Would that be, then, the model that you would like to put forward to see that we put forth for mitigating for these projects?

Mr. CORCORAN. I think that habitat planning outcomes, like in HCP/NCCP, are part of the long-term solution to how we get to a place where we can find the places to say yes to, and guarantee that we are still making progress on the recovery of species. So, yes, long term that is an important outcome.

Mrs. BONO MACK. And do you believe—in your testimony and your points, how good is the Sierra Club's math in meeting this standard? We talked about needing to inventory these non-disturbed lands and all. How far along in that process are you? Do you have a number, or do you have—do you really think we can meet that 33 percent by 2020, given what you know currently about the lands?

Mr. CORCORAN. I think we have a huge challenge on the interim goal. I am hopeful that we will meet the long-term goal of 2020. What I want to emphasize is that this is an inventorying of resources in which, for example, through the RETI process and others, the Nature Conservancy, the Center for Biological Diversity, the Sierra Club and others have brought a lot of important natural resource information to the table. So, now the challenge is to the State and the Federal Government to, with their own resources, coordinate these together, so that we are ensuring that we are finding the right places to say yes to.

Mrs. BONO MACK. All right. Terrific. Well, I know that I am down to my last three minutes, and the Chairman will love me dearly if I wrap it up sooner rather than later. So, again, I——

Mr. COSTA. You have three minutes.

Mrs. BONO MACK. Well, thank you. I will take three minutes to thank you, then, for being here.

[Laughter.]

And to encourage you to come back. And, again, the players at the table, the greatest thing that I have done is I have hiked—done hikes with the Sierra Club to see concerns of theirs, and actually almost killed myself hiking some trails that were pretty hard, complicated. Actually, we had to leave the Sierra Club guy at the bottom of the hill. But, really, we will be out there in any capacity to bring you guys together and to work on these issues on a consensus way.

This District, if you look at the map, it is a mosaic of different land uses and ownership. But I can tell you that everybody, whether it is my tribal land, national monument land, state park land, it is that way because people live out here because they love where they live, and they care deeply, and they deserve a seat at the table.

So, Mr. Chairman, I applaud you so highly for doing this in my District rather than just in Washington, D.C. And, again, I encourage you all to come back.

And to my new colleague from Wyoming, thank you for your insight and your wisdom and your guidance.

And if anything, for my constituents here today, it is important as Members of Congress and the House of Representatives, our districts are all so diverse and so different, and our concerns—it is hard sometimes to recognize and to understand where we come from. A lot of Members of Congress travel the world over, on CODELS they are called, and I wish Members of Congress would instead get out to see each other's districts and to understand the challenges that we face, and then come together to build a consensus and bipartisanship.

So, again, in that model, in that vein, thank you very, very much, both of you, for being here, and to the distinguished panelists also for your time today.

Thank you.

Mr. COSTA. Well, thank you, Congresswoman Bono Mack, for your good words, and for your good staff. And we have an incredible country, and with all of the diversity that you commented on, clearly, this hearing today reflects a large part of that diversity that we are all very proud of. And I know of your District, because I like to get away sometimes and visit.

I also on occasion speak at conferences down here, but it is a wonderful part of California, as is the 20th Congressional District, Bakersfield and Fresno. We have Yosemite and Sequoia in our backyard, and we grow the richest bounty of agricultural diversity of crops anywhere in the world, notwithstanding that Coachella also does a good job. But we have some terrible drought conditions right now that we are dealing with.

But to the Congresswoman from Wyoming, you forsook Mother's Day, and that was awful nice. I guess I owe you one for—certainly your family, but we appreciate the good work you are doing on the Subcommittee and on the full Committee. I speak on behalf of my colleagues. You have hit the ground running, and your contributions today have demonstrated that.

To both panels, the first panel and the second panel, you have done an excellent, excellent job. Bill, you are not a bad pinch hitter. And all of you I think added to the kind of information that we need. The testimony is critical, as we develop—as we try to develop the comprehensive energy policy that has been elusive over the last three decades.

And hopefully we will learn the mistakes of why we have not been successful in the last three decades, and this time bring together the bipartisan effort that is necessary, that our nation deserves, that our nation needs, and that our constituents want to see us make happen.

I have some magic words I need to say here, and that is that the Subcommittee may have additional questions. As I told you, I do have additional questions. They will be submitted to you. Under the Committee Rule 4H, any material submitted for inclusion in this hearing record must be submitted no later than 10 business days following today's hearing. And so we want to make sure that the witnesses and those who have participated in the hearing understand that, as do my colleagues and their staff.

And, therefore, if there is no further business before the Subcommittee—no further business? The Chairman again thanks all of you, and our hostess, and the wonderful people here in Palm Desert and the Palm Springs greater area for making us feel at home.

Thank you very much. This Subcommittee now stands adjourned.

[Whereupon, at 12:05 p.m., the Subcommittee was adjourned.]

[Additional material submitted for the record follows:]

[A statement submitted for the record by Ileene Anderson, Desert Program Director, Center for Biological Diversity, follows:]

Statement submitted for the record by Ileene Anderson, M.S., Desert Program Director, Center for Biological Diversity, on Implementation of Renewable Energy Projects in the Western United States

Mr., Chairman, members of the committee, my name is Ileene Anderson. I am the Center for Biological Diversity's Desert Program Director. I have worked for the Center for Biological Diversity for over 5 years of my 20 years in environmental work. I was appointed to the Bureau of Land Management's California Desert Advisory Council in 1998 and served six years including one year as chairperson. I submit this statement on behalf of the Center for Biological Diversity and our 220,000 members, e-activists and staff.

My responsibilities include working to protect rare and endangered species and their habitats on public and private lands. In that context, I and our desert and public lands energy staff are working to facilitate environmentally responsible renewable energy throughout the desert regions of the western United States. I have also been involved in the environmental working group for the State of California's Renewable Energy Transmission Initiative (RETI), and working with stakeholders and conservationists to chart a clear path forward that allows for appropriately sited renewable energy development and resources conservation.

Global climate change poses great challenges to all of the inhabitants of the planet. Scientific literature on the impact of greenhouse gas emissions on the United States (and the world) is well developed. Changes include decreased snowpack, increased water temperatures, sea level rise, increase in storm intensity and the proportion of precipitation of rain versus snow, increase in the number of heat wave days in major urban centers, and increased wildfire frequency and intensity among a multitude of other related issues. Profound impacts to ecosystems and species, including changes in the timing of life events, shifts in range, and community abundance shifts are likely and depending on the timing and interaction of these impacts, they may be catastrophic. For the western deserts specifically, modeling efforts predict a warmer and drier climate. Desert species already cling tenuously to life in extreme climate conditions, and will require opportunities to migrate and change ranges as global climate changes occur.

Quick action must be taken to minimize the catastrophe and prevent run-away climate change from occurring. An immediate shift to a different energy pathway that includes renewable energy is imperative. Yet large scale renewable energy development can also have large scale environmental impacts. This is why thoughtful siting of renewable energy to maximize renewable energy production while preserving our ecological heritage on public lands—which must provide refuge to species struggling to adapt to a rapidly changing climate and functioning ecosystems on which species and human communities depend—is not only possible, but essential, and indeed an obligation on our part to future generations. Ensuring that large-scale renewable projects comply with our existing environmental safeguards is essential to ensure that environmental impacts are minimized at the same time that use and development of renewable energy is maximized.

The impacts to the environment vary with the type of renewable energy development. Solar energy production on a large scale often times requires large tracts of relatively flat land that is devoid of vegetation. Little habitat values remain on these sites once they are dedicated to solar energy production. Because of the significant impact that these projects will have, applying the following fundamental principles, which were developed through the Center's experience in the California Desert, can provide a useful framework for siting renewable energy on Enterprise and Redevelopment Zones that can be applied throughout the western United

States, in order to achieve the goal of increasing our nation's reliance on renewable energy, especially solar energy include:

- **Site solar projects on previously disturbed sites.** Mechanically disturbed sites such as abandoned agricultural lands have already been "type converted" from native vegetation and habitat to agriculture. In the west, agricultural lands have been fallowed from lack of water or soil salt build up.
- **Establish incentives for development on these private lands.** Because many of mechanically disturbed sites are actually on private property, incentivizing siting of solar facilities on these lands will benefit to the local economies and effectively will steer development away from undisturbed public lands that are in many cases the last, best refuge and habitat for imperiled species. These private land sites are typically at the peripheries of developed areas, close to load-bearing centers and delivery infrastructure.

Examples of the kind of incentives that may need to be applied to these solar Enterprise and Redevelopment Zones include:

- **Incentives for land owners to sell/lease property to solar development.** Incentives such as tax credits or tax exemptions would encourage landowners to purpose their lands to renewable energy projects. Local economies, many of which are economically underserved, will benefit, while repurposing these lands as the key to our energy independence.
- **Incentives for solar to be developed on these lands.** Similar incentives as mentioned above—including tax credits and/or exemptions—would encourage solar developers to locate within these zones, taking pressure off of undisturbed public lands.
- **Centralizing solar development into Enterprise and Redevelopment Zones.** Enabling centralized production by directing development into Enterprise and Redevelopment Zones is far more efficient that creating hop-scotch development which will require additional expensive infrastructure in order to deliver the energy to market. Concentrating projects into Enterprise and Redevelopment Zones adjacent to existing development also lowers to the carbon footprint of getting workers from home to jobs and back.

The potential pitfalls that can result from not applying this framework have been exemplified in the California Desert. For example, during the initial rush of applications to site solar energy on public lands in the California Desert Conservation Area, the Bureau of Land Management (BLM) accepted applications for projects in areas previously-identified as unsuitable for development—for example, areas that had already been established for endangered species conservation. Because there was no programmatic plan in place or any mechanism for steering applications to appropriate areas and away from inappropriate ones, BLM then had to initiate additional processes to evaluate and determine that these areas were inappropriate for solar development, leading to frustration on the part of the solar developers, and wasting significant BLM resources processing applications for projects that it was clear from the outset were inappropriately sited. **BLM should reject all applications in previously identified areas for environmental conservation at the outset and use its staff time and resources to move forward projects that are appropriately sited.**

We are pleased that the Department of Interior has now initiated a Programmatic Environmental Impact Statement that will identify areas that are appropriate for solar development. This process will need to 1) clarify locations that are suitable for development, 2) cluster development into specific areas (versus the status quo where applications are filed in a haphazard fashion) and 3) steer public lands solar development onto disturbed lands and adjacent to existing transmission lines, substations, population centers and disturbed private lands. Establishing solar energy zones in this way will minimize the need for new transmission, and concentrate the industrialization into these most appropriate areas.

Incentives must also be found to allow solar developers to transfer their applications from inappropriate sites to such solar zones. In many instances, developers lack incentives to transfer an application from the inappropriate site to a more appropriate site is due to delays that can jeopardize contractual obligations because the application loses its place in the transmission hook-up "queue", and because the developers risk losing capital already invested in studies and project engineering. However, creative incentives can be applied to all of these challenges. Project location transfer needs to be allowed without the applicant having to go back to the end of the "queue". Environmental surveys of public lands done on inappropriately located application sites may in some cases provide information to the public and the public land managers that is valuable and could be compensated. Indeed, when the solar projects are transferred to appropriate solar zones that have been selected to minimize environmental conflicts, the environmental review process will be signifi-

cantly shortened, allowing for faster project implementation than on the inappropriate sites.

Permitting agencies need more resources in order to process these applications quickly and efficiently. High priority needs to be given to adding additional staff capacity in the Department of Interior agencies, including BLM, and U.S. Fish and Wildlife Service, who may need to be consulted regarding impacts to threatened and endangered species.

Lastly, the federal government must cooperate with state and local governments to achieve the goals of expediting solar (and other renewable) energy production.

In summary, many opportunities exist to expedite renewable energy development and in particular solar development specifically in the western United States. We urge the Natural Resources Committee to take the bold, necessary steps that will aid our transition to a different energy pathway that includes appropriately-sited renewable energy, while conserving our irreplaceable natural heritage.

Thank you for considering these solutions and please feel free to contact me with any questions.

[A letter submitted for the record by Basin and Range Watch follows:]

May 15, 2009

To: Committee on Natural Resources
1324 Longworth House Office Building
Washington, D.C. 20515

From: Basin and Range Watch

Greetings,

These comments are in response to the Congressional Subcommittee Field Hearing to Examine the Future of Solar Power on Federal Lands in Palm Desert, California on Monday, May 11th, 2009. We have several comments.

We support the strong use of distributed generation and conservation, including residential solar funding plans such as California's AB811 loan program and building-integrated solar on new housing and commercial properties. When House Subcommittee on Energy and Mineral Resources Chairman Jim Costa (D-CA) says this is too expensive, following the California Energy Commission's claim, we have to disagree, as this claim does not incorporate the full cost of new and upgraded transmission which will add billions of dollars to construction costs of remote solar and wind energy projects to move the energy to cities, and raise ratepayers' rates as well. Solar companies will be receiving 30% federal grants to cover the costs of construction of plants, and we feel similar grants could be put toward local distributed generation plans. Locally generated energy and conservation should be the top priority in the national energy plan instead of remote industrial generation on pristine desert and mountain lands.

We agree with the part of the testimony given by Bill Corcoran of the Sierra Club that outlines a plan for supporting companies in acquiring disturbed lands by incentives to aggregate subdivided private lands and create Enterprise Zones. We emphatically do not support the use of largescale renewables on undeveloped pristine federal lands. The scraping of vegetation and soils that will be needed to build solar thermal power plants over thousands of acres is hypocritical to the cause of slowing global warming, as carbon is sequestered by desert flora and soil microbiota.

The destruction of critical habitat for Desert tortoises and other wildlife and rare plants cannot be mitigated properly in our opinion. The Federally Endangered Peninsular bighorn sheep has been found on areas that are proposed solar energy project sites, and much more study is needed to ensure the little remaining habitat for these populations is not destroyed. Increasingly rare Sage grouse habitats are also threatened by proposed wind energy projects in the Great Basin Desert on federal lands. These cannot simply be replaced. Native American cultural heritage sites, sacred sites, archaeological sites, and historic areas need to also be included in inventories of federal lands before they are slated for renewable siting. We do not support the Sierra Club's or other groups' mitigation plans for habitat lands that are being considered for siting of utility-scale solar plants. We urge Congress to seriously consider disturbed lands, whether private or public, as this will speed the environmental review process greatly and lessen protests by users of public lands.

The subcommittee promotes a rush of many new transmission lines in the name of combating climate change yet ignores the data from the Environmental Protection

Agency (EPA) that sulfur hexaflouride (SF6) is the most potent greenhouse gas studied to date, with a global warming impact of 23,900 times CO_2, and a much longer lifespan (estimated at 3,200 years, compared to CO_2's 50-200 years). Almost all of it is used and emitted in electrical transmission and distribution, with big spikes in emissions during construction of lines. SF6 is used as an insulator in high-voltage (35 kV and above) circuit breakers, switchgear, and other electrical equipment.

Sempra Energy is using the Natural Resources Defense Council-Audubon Society Google-Earth Map in their testimony to show Congress which lands are suitable for development. We believe this map should not be used for this purpose yet until it is revised to include the many environmentally sensitive areas and issues that were not included. We do not support the use of this map database by Congress to speed up permit applications for big renewable projects on Federal lands until more consensus is reached among the environmental community and other groups concerned with the desert.

One of the most obvious environmental consequences of plans to cover the deserts with solar thermal plants is water. We do not feel that Congress really understands that there will never be enough water to accomplish such a feat. "Mining" of groundwater from desert valleys can cause distant springs to dry up and also contributes to soil compaction as the aquifer settles. Pore spaces in the aquifer collapse when groundwater is withdrawn, diminishing the use of the valley as an aquifer in future centuries. Much water in thermal reflector plants is wasted in washing solar panels every day to keep off dust. Water used in these plants is not recycled but is allowed to run off onto the ground. Diesel trucks and other fossil-fuel powered equipment are used to transport and direct the water, causing a waste of energy and a release of greenhouse gasses that nullifies any savings and offsets that are expected from using the power of the sun. The solar plant ends up providing no net gain from its construction and can even be a loser, due to the low efficiency of solar collectors to begin with. Thus even dry-cooled solar thermal energy plants use too much water in arid ecosystems, and wet-cooled plants should not be considered in deserts.

We are concerned with the discussion of streamlining and accelerating the environmental review process for siting solar projects on public lands. We hope that our country's national heritage of federal lands in the desert with their rich fauna and flora, history, and recreation use, will be given due protection, following the voters' past will in enacting such initiatives as the California Desert Protection Act. We do not want to see decades of environmental protection and review processes discarded in a confused rush to meet renewable energy goals, helping to defeat these goals in the process.

We felt that the hearing failed to recognize the very many concerns that local people in the desert communities have about the impacts large scale renewable projects will have on their environment, property values, quality of life and energy bills. It appeared as though the meeting was formatted to make approval of these projects very easy for energy developers. We do not feel the United States Congress should be pandering only to the interests of developers. Please hold more desert field hearings to gather input from local desert residents and from desert ecologists and scientists who have done research on the importance of desert ecosystems to local economies and as part of our natural heritage.

In conclusion, we ask that Congress not recommend that generators site utility-scale projects on our undisturbed public lands and habitats.

Thank you,

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[A form letter on "Solar Development in the San Luis Valley, Colorado," delivered by CitizenSpeak!, with personal comments submitted for the record by the individuals listed below follows:] Andy Zaugg; Catherine Broadbent, San Luis Valley Water Protection Coalition; Cecelia Smith, Director, San Luis Valley Water Protection Coalition; Charles Tidd, San Luis Water Protection Coalition; Claire Barker; David and Renee Hill; Dr. Bonnie M. Orkow; Francis Bonny; Glyder, Biosphere Coalition; Jay Bremyer; Kathryn Van Note, San Luis Valley Water Protection Coalition; Liza Marron, LiveWell Alamosa, ScSEED, Mountain Valley School Board; Matthew Crowley, Shumei International Institute; Pavita Decorah, Sri Aurobindo Learning Center; Randi Young; Ron Sitts; Sandia Belgrade; Stephen Smilack; Tamar Ellentuck

To: Representatives on the House Subcommittee on Energy and Mineral Resources.

I am writing in response to the field hearing on Solar Energy Development On Federal Lands: The Road to Consensus held in Palm Desert, California, May 11, 2009. My personal statement appears at the end of this letter.

Thank you for extending the comment period on above mentioned hearing. The San Luis Valley has become the major focal point for industrial solar development in Colorado. More than 50% of the Valley is publicly owned, thus the future of our high-elevation rural Valley hangs in the balance of Federal energy policy decisions currently being debated by the Department of Interior, Congress and this committee. Being far from DC, Denver and the urban demand centers, the concerns of our 40,000 constituents have not been heard. I hope this marks and end to our invisibility.

The San Luis Valley is home to one of our nations most productive agricultural areas and spectacular natural and cultural landscapes, recently recognized when Congress passed the Sangre de Cristo National Heritage Act of 2009.

Solar energy development on the massive industrial scale currently being proposed is entirely untested. Impacts on our rural agricultural communities, aquifers and watersheds, air quality, ecosystems and biodiversity remain largely unexamined. In the absence of an informed energy policy, unregulated market-driven solar energy development could very well accelerate the disappearance of the extraordinary ecological and cultural heritage of our Nations rural areas including the San Luis Valley.

Large-scale solar facilities are already being sited on private lands within the Valley. I do not believe we should sacrifice our public lands too. Until existing degraded lands and the built environment, especially near urban point-of-use centers are fully utilized, it simply makes no sense to destroy intact (and carbon sequestering) ecosystems on our valuable public lands.

I would like to see the farmers, ranchers, businesses, communities and citizens who make the San Luis Valley their home profit directly from our solar resources rather than giving carte blanche to distant corporations in exchange for a few short-term jobs. By providing incentives for distributed generation, solar energy development can be integrated into the existing fabric of our rural agricultural economy rather than uprooting it through large-scale industrialization. As you consider solar energy development on public lands I urge you to prioritize the following:

1. Energy efficiency and conservation;
2. Smart-grid upgrades to existing infrastructure before constructing new transmission;
3. Federal and state incentive programs to promote point-of-use distributed generation through Feed-In Tariffs, progressive net metering and long-term, low-interest loan programs targeting agriculture, business, municipalities, rural communities and households;
4. Use of degraded lands and the build environment near urban centers first;
5. Use of low-water dry cooling solar technologies in arid and semi-arid environments;
6. Avoidance of National Parks and Monuments, National Wildlife Refuges, Wilderness, Roadless Areas, State, Federal, County or citizen recognized special conservation areas, intact public lands, prime agricultural lands, wetlands, wildlife corridors, cultural sites and Federal or State endangered species habitat;
7. Pilot studies geared at developing effective mitigation and "best management practices" for large-scale solar energy facilities;
8. Development of a comprehensive study by our nations top independent energy and policy experts leading to adoption of a National Energy Policy.

Lastly, I would like to encourage the Subcommittee to continue holding hearings on renewable energy development, particularly in our part of the Southwest. As we stand at the crossroads of the new energy transition, a fundamentally new paradigm is emerging that those of us at "ground-zero" would like to share.

I respectfully submit my comments for the Record of the Hearing and request that I be notified of further hearings on solar energy development on public lands.

[A form letter on "Solar Done Right" delivered by CitizenSpeak!, with personal comments submitted for the record by the individuals listed below follows:] Andy Liberman; Annette Rojas; Arvind Says; Brendan Hughes; Cecelia Smith, San Luis Valley Water Protection Coalition; Chris Clarke; Connie Crusha; David Crawford, Desert Protective Council; David McMullen; Diane Conklin, Mussey Grade Road Alliance; Donna Thomas; Florian Boyd; George Wuerthner; Gidon Taylor Singer; Helena Quintana; James Dyer; Janeen Armstrong; Jill Giegerich; Karen Schambach, Public Employees for Environmental Responsibility; Katherine McTaggart; Kim F. Floyd; Kurt Leuschner, Desert Cities Bird Club; Laraine Turk, California Desert Coalition; Larry Hogue, Desert Protective Council; Linda Harter; Luana Lynch; Mesonika Piecuch, ORV Watch Kern County; Michael Howard; Michael Pinto; Nick Comer; Nick Ervin; Olivia de Haulleville; Philip Leitner, California State

University; Phillip Schuyler Carskaddan; Rachel Shaw, Sungazer Photography and Images; Richard Ryan, Desert Protective Council; Ruth Rieman; Spencer Berman; Stacey Landfield; Steve Hartman; Terry Frewin; Vanessa Rusczyk, The Protect Our Communities Foundation; William Modesitt; Willie Walker

Dear Representatives on the House Natural Resources Committee:

I am writing with comments on the Congressional Subcommittee Field Hearing to Examine the Future of Solar Power on Federal Lands held in Palm Desert, California on Monday, May 11th, 2009. My personal statement appears at the end of this letter.

First, I hope you will schedule more hearings throughout the Southwest. These hearings should include testimony from scientists with expertise in desert ecosystems, as well as energy engineers and developers experienced with a variety of renewable energy alternatives, including distributed generation. In addition, the hearings should provide opportunities for citizen input.

I believe that we can move to a low-carbon society without sacrificing our beautiful and biologically rich desert landscapes. As you consider where and how solar energy should be developed in this country, please adhere to these simple principles:

1. Place the highest priority on energy efficiency and conservation.
2. In developing solar, place the highest priority on "distributed generation" technologies, such as photovoltaic solar panels
3. Use proven incentives such as Feed-In Tariffs and long-term, low-interest loan programs to promote more distributed solar.
4. Put large-scale, centralized solar projects only on lands that have already been heavily abused, such as abandoned farm land.
5. Don't build large-scale projects on good habitat, especially if it is home to endangered species.

If we follow the first four points above, we can combat global warming without paving the desert with "solar parks."

More detail on each of these principles is available at: http://tinyurl.com/solardoneright

Please submit these comments For the Record for the hearing. I would like to receive notice of further hearings on solar energy development on public lands.

[A statement submitted for the record by Veronica Gutierrez, Director, Public Affairs, Edison International, follows:]

Statement submitted for the record by Veronica Gutierrez, Director, Public Affairs, Edison International

Good morning, Mr. Chairman, members of the Subcommittee. Thank you for this opportunity to offer testimony on issues related to solar development on federal and private lands.

My name is Veronica Gutierrez. I am the Director of Public Affairs for Edison International, the parent company of Southern California Edison and Edison Mission Energy. I am responsible for assisting Edison Mission Energy with its plans for renewable energy development in the West. I am also responsible for assisting Southern California Edison with low carbon energy development and out-of-state transmission development.

Southern California Edison is the nation's leading purchaser of renewable energy with more than 16% of our electricity coming from renewable resources, enough to power 1.8 million homes for an entire year. Southern California Edison also purchases 80% of all the solar energy currently generated in the United States. In order to reach our goal of 20% renewables by 2010, and to prepare for the 33% renewable portfolio standard currently working its way through the state legislature, Southern California Edison is investing more than $20 billion over the next five years to expand and strengthen our transmission and distribution infrastructure.

Edison Mission Energy is one of the country's 10 largest wind energy developers with projects in operation or in development in 17 states. Edison Mission Energy's business plan also calls for development of utility-scale solar generation in a unique niche—on privately owned, "disturbed" land or land with low quality habitat.

From an Edison International perspective, we have a very keen interest in removing barriers to both solar generation development and the development and upgrade of transmission necessary to bring it online. I would like to reiterate the recommendation of California Public Utilities Commissioner Rachelle Chong that you

consider California's Renewable Energy Transmission Initiative, also known as RETI, which has involved many stakeholders and has painstakingly assessed the location of optimal renewables zones, and especially the transmission corridors necessary to bring this generation online. Federal agencies are already participating in RETI and we welcome their continued involvement.

Our experience has been that the state process for transmission siting works fairly well, and we are very pleased to hear of new efforts to allocate the resources necessary for federal agencies to streamline and accelerate environmental reviews. We have made similar recommendations to several federal agencies and elected officials in the hope that the federal agencies such as the Bureau of Land Management and the U.S. Fish and Wildlife Service will soon receive the staffing resources to more quickly complete the necessary work for siting proposals.

Also from an Edison International perspective, I would like to reiterate the recommendation of Carl Zichella of the Sierra Club regarding incentives for renewable developers focusing on private, disturbed, land. Regarding this matter, there is a very specific issue that we have found particularly troublesome. The review time associated with Endangered Species Act (ESA) compliance is currently a disincentive for development on private land because the ESA has a more expedited time table for review when there is a federal nexus: 135 days. This makes development on federal land more attractive to developers because the normal time table for review on private land is three to five years for disturbed land and six to nine years for projects with more significant impacts. We believe that this discrepancy can be resolved through two actions: 1) Allocation of staff to the U.S. Fish and Wildlife Service for more expedited review and for an administrative rulemaking. 2) An administrative rulemaking under section 4(d) of the ESA that could reduce the review time to a matter of weeks if staffing levels were appropriate to handle the workload.

The U.S. Fish and Wildlife Service has informally reviewed our ideas for expedited review, especially when it involves already disturbed land or low quality habitat. I have a white paper on this matter that I would like to share with your staff and provide for the record. What we need now are the funds for implementation. Your assistance in this regard will be greatly appreciated.

Thank you for your consideration.

White Paper

Use of Section 4(d) of Endangered Species Act To Encourage Low Impact Renewable Energy Projects

I. STATEMENT OF THE ISSUE.

This paper describes the potential use of the authority in section 4(d) of the Endangered Species Act ("ESA") to streamline the ESA permit process for renewable energy projects that will have low impacts on endangered and threatened species.

To address the global climate change issue, the State of California has adopted significant new legislation and policies to reduce greenhouse gas emissions and to expand dramatically the energy generated in the state from solar and other renewable energy sources. In response, many private entities are seeking the approval for solar energy projects in the California desert.

The State of California and the federal government have initiated the preparation of regional plans to address the potential impacts of solar energy projects on natural resources. These plans, however, are not anticipated to be completed for several years. Until these plans are completed, there is a need to encourage the siting of solar energy projects in areas that will avoid and minimize impacts on endangered and threatened species and that will not preclude the implementation of the regional natural resource conservation plans.

Previously disturbed lands are most often privately-owned and impacts on listed species are consequently reviewed under Section 10 of the ESA. The U.S. Fish and Wildlife Service ("Service") acknowledges that permitting timelines under Section 10 can take many years—even for projects that have minimal impacts on endangered and threatened species. The Service recently estimated that the permitting process for solar projects on private lands ranges from 3-5 years for a project with low impacts, to 6-9 years for a project with more significant impacts. In contrast, the ESA establishes a 135-day process for issuing incidental take authority in circumstances where there is a federal nexus. 16 U.S.C. § 1536(b). But in most instances, no federal nexus is available for renewable projects on private lands.

The above ESA permitting process paradoxically results in a significant disincentive to siting renewable energy projects in areas where they will have least impact.

It also encourages the siting of renewable energy projects on more sensitive federal land.

II. USE OF SECTION 4(D) TO ENCOURAGE SITING OF RENEWABLE PROJECTS IN AREAS OF LOW IMPACT.

Section 4(d) of the ESA provides a mechanism for the Service and the Department of Fish and Game to promote siting of renewable energy projects in areas with the least impact on threatened and endangered species.

Section 4(d) authorizes the Service to issue regulations that are "necessary and advisable" to provide for the conservation of threatened species 16 U.S.C. § 1533(d). The Service has interpreted section 4(d) to authorize regulations that limit the section 9 take prohibition for threatened species. These so-called "4(d) Special Rules" have the effect of allowing take of certain threatened species under conditions prescribed by regulation, if any, without an incidental take permit under section 10. Generally, 4(d) Special Rules restrict the section 9 take prohibition for defined categories of actions, allowing take resulting from, for example, routine ranching activities on private land without a section 10 permit. See, e.g., 50 CFR § 17.43(c)(3). Thus, 4(d) Special Rules allow persons to take the subject species in the course of conducting the enumerated activities, in compliance with the ESA, without individual authorization from the Service.

III. USE OF SECTION 4(D) TO STREAMLINE THE CESA PERMITTING PROCESS FOR THREATENED SPECIES.

The use of section 4(d) for qualifying renewable energy projects would also streamline the permit process for compliance with the California Endangered Species Act ("CESA"). California Fish and Game Code section 2080.1 provides a streamlined CESA permitting process with regard to projects impacting species jointly listed under ESA and CESA where the project has obtained ESA incidental take authority. Fish and Game Code, § 2080.1. Section 2080.1 provides a mechanism for the Department of Fish and Game to concur in a federal incidental take approval within 30 days after receiving notice of the federal approval. Once this concurrence is issued, no other CESA approval is required for the project.

When the Service issues the section 4(d) rule, it will also issue a biological opinion and an incidental take statement authorizing incidental take of threatened species subject to the requirements of the 4(d) rule. The California Department of Fish and Game may then determine that the incidental take statement is consistent with CESA requirements. Using the authority of section 2080.1, the Department of Fish and Game will avoid the need for a duplicative individual permit process under CESA for qualifying renewable energy projects.

IV. EXAMPLES OF USE OF SECTION 4(D) TO AUTHORIZE LOW IMPACT ACTIVITIES OR ACTIVITIES PENDING COMPLETION OF REGIONAL CONSERVATION PLAN.

A. THE GNATCATCHER 4(D) SPECIAL RULE.

In 1993, the Service issued a 4(d) Special Rule limiting the take prohibition of the threatened coastal California gnatcatcher ("Gnatcatcher 4(d) Rule"). 58 Fed. Reg. 65088 (Dec. 10, 1993); codified at 50 CFR § 17.41 (b). As the Service explained, the Gnatcatcher 4(d) Rule provides "another regulatory mechanism [in addition to incidental take authorization provided under sections 7 and 10]—to allow take of the gnatcatcher incidental to otherwise lawful activity." 58 Fed. Reg. 65088, 65091.

Under the Gnatcatcher 4(d) Rule, incidental take of the gnatcatcher was permitted during the period in which a natural community conservation plan ("NCCP") was being prepared, provided the take occurs within an area under the jurisdiction of a local government agency that engaged in the preparation of a NCCP and such take results from activities conducted in accordance with the NCCP Conservation Guidelines and Process Guidelines. 50 CFR § 17.41(b)(3).

The California Department of Fish and Game, in coordination with the Service and the NCCP scientific review panel, prepared the Coastal Sage Scrub NCCP Process Guidelines and the Coastal Sage Scrub NCCP Conservation Guidelines to define the roles of local, state, and federal government in the NCCP planning process (collectively, "Guidelines"). The Guidelines set forth, among other things, the process and the substantive requirements for securing interim approval of loss of coastal sage scrub (i.e., gnatcatcher) habitat, thus allowing take of gnatcatcher under the 4(d) Special Rule. The table below summarizes the requirements of the 4(d) Special Rule and the Guidelines.

4(d) Special Rule	Process for issuance of 4(d) Rule	Procedural requirements for coverage	Substantive requirements for coverage	Federal agency involvement
Gnatcatcher	Published proposed rule in Federal Register for 60-day comment period Prepared EA/FONSI (notice in Federal Register and public comment period)	Take-causing activities must occur within a local jurisdiction participating in the planning of NCCP Local agencies may determine specific application and process requirements, provided that interim habitat loss requests are integrated into the regular project entitlement process CEQA compliance	The habitat loss does not cumulatively exceed 5% The habitat loss will not preclude connectivity between areas of high habitat values The habitat loss will not preclude or prevent the preparation of the NCCP The habitat loss has been minimized and mitigated to the maximum extent practicable	Service must be allowed to comment on project and local agency findings Service conducts twice annual review of implementation of NCCP Guidelines during interim period Service may revoke interim take provisions under 4(d) Rule after publication of revocation findings in Federal Register and 30-day comment period

B. CALIFORNIA TIGER SALAMANDER.

In 2004, the Service adopted a 4(d) Special Rule with regard to the California tiger salamander. 50 C.F.R. § 17.43; 69 Fed. Reg. 47212 (August 4, 2004). The Special Rule provided an exemption for routine ranching activities on private and Tribal lands. The Service explained that:

> Under section 4(d), the Secretary may publish a special rule that modifies the standard protections for threatened species found under section 9 of the Act and Service regulations . . with special measures tailored to the conservation of the species. We believe that, in certain circumstances, easing the general take prohibition on non-Federal lands may encourage continued responsible land uses that provide an overall benefit to the species.

Id. at 47241.

SALMON.

NOAA Fisheries promulgated a 4(d) Special Rule for certain salmon species listed as threatened ("Salmon 4(d) Rule). 70 Fed. Reg. 37160 (June 28, 2005); codified at 50 CFR § 223.203. Among the 13 activities for which the take prohibition was limited was municipal, residential, commercial, and industrial development provided that the development occurs pursuant to local government ordinances or plans that NOAA Fisheries has determined are adequately protective of the subject species. Id. § 223.203(b)(12). The Salmon 4(d) Rule lists a dozen conditions that NOAA Fisheries would use to evaluate the adequacy of local government plans, which must provide for "properly functioning conditions" for the salmon species, as summarized in the table below.

4(d) Special Rule	Process for issuance of 4(d) Rule	Procedural requirements for coverage	Substantive requirements for coverage	Federal agency involvement
Salmon	Published proposed rule and notice of availability of EA in Federal Register with public comment period Prepared EA/FONSI	Municipal, residential, commercial, and industrial development must occur pursuant to local government ordinances or plans approved by NOAA Fisheries	Avoidance and minimization measures designed to attain or maintain a properly functioning habitat conditions Provisions for evaluation of ordinances/plans, with funding and enforcement mechanisms	Annual reports to NOAA Fisheries NOAA Fisheries may conduct periodic review NOAA Fisheries may revoke interim take provisions under 4(d) Rule after publication of revocation findings in Federal Register and 30-day comment period

V. PROPOSED SECTION 4(D) RULE FOR QUALIFYING RENEWABLE ENERGY PROJECTS.

The issuance of a 4(d) rule for renewable energy projects with low impacts on threatened species involves the following general steps:

1. Preparation of conservation guidelines establishing requirements applicable to projects subject to the 4(d) rule. The guidelines would identify (i) substantive requirements that a qualifying project would be required to meet, (ii) mechanisms to insure implementation of the requirements, and (iii) oversight by the Service and the Department of Fish and Game.
2. It is anticipated that the conservation guidelines would require qualifying projects to meet identified "low impact" criteria. For example, the conservation guidelines could require any qualifying project satisfy all of the following requirements:
   a. The total acreage of the project is no greater than 1280 acres, including acreage associated with permanent disturbance from the project's electrical interconnection to transmission system.
   b. The project is sited on privately-owned "disturbed or degraded land" (as defined below) that is not within a National Park, National Recreation Area, National Monument, designated Wilderness Area, Area of Critical Environmental Concern or critical habitat previously designated by the Service for listed species. "Disturbed or degraded land" means land that is on or within 2 miles of land that is or has been used within the last 50 years for agriculture, mining or mineral extraction, landfill, wastewater treatment, pipeline, transmission line, rail line, airport, military operations, or state or federal road or highway or other similar uses;
   c. Unless within an existing BLM-designated or contingent corridor, the project's electrical interconnection line is not within a National Park, National Recreation Area, National Monument, designated Wilderness Area, Area of Critical Environmental Concern or critical habitat previously designated by the Service for any threatened or endangered species;
   d. Except for grading and compacting portions of a project site that have been in agricultural use within the past 10 years, no more than 30% of the project site will be graded;
   e. During operation, consumptive use of surface or ground water that is suitable for potable and agricultural uses does not exceed 5 gallons/MWh;
   f. Insignificant operational air emissions; and
   g. "Best management practices" established for construction and operation of such projects are implemented to minimize impacts on endangered and threatened species.
3. Preparation of an environmental assessment regarding the environmental impacts of the 4(d) rule;

4. Publication of the proposed 4(d) rule in the Federal Register requesting public comment;
5. Providing a minimum of 30 days for public comment;
6. Adopting a Finding of No Significant Impact; and
7. Approving the final rule and publishing the final rule in the Federal Register.

It is anticipated that the Service could complete the process for promulgating a section 4(d) rule for qualifying renewable energy projects in approximately one year.

[A statement submitted for the record by Anthea Hartig, Regional Director, Western Office, The National Trust for Historic Preservation, follows:]

Statement submitted for the record by Anthea M. Hartig, Regional Director, Western Office, The National Trust for Historic Preservation

Introduction

The National Trust for Historic Preservation (National Trust) commends the Chairman and the Subcommittee for their leadership in bringing diverse voices together to build consensus regarding the future of solar energy development on federal lands. The National Trust fully supports the effort to expand our nation's renewable energy portfolio, and we recognize that federal public lands will play a significant role. Federal land managers, project proponents, resource specialists and the interested public have a unique opportunity to work collaboratively in advancing our renewable energy goals without compromising our nation's significant historic and natural resources. Potential legislation to promote solar energy development should not simply aim to accomplish this goal in an expeditious manner, but should do so in a way that emphasizes protection of historic and natural resources, thus ensuring a holistic environmental approach.

Background on the National Trust

My name is Anthea M. Hartig and I am the Director of the Western Office of the National Trust, the largest private, nonprofit membership organization dedicated to protecting the Nation's irreplaceable historic and cultural resources. Chartered by Congress in 1949, the National Trust provides leadership, education, and advocacy to protect America's diverse historic places and revitalize its communities. Staff in our headquarters in Washington, D.C., nine regional and field offices—including the Western Office in San Francisco—and 29 historic sites work with our 235,000 members and thousands of local community groups in all 50 states.

Solar Energy Development and Cultural Resources on Public Lands

The National Trust supports solar energy development on federal public lands; however, we caution against expediting such development at the expense of irreplaceable historic and cultural resources. We understand that some impacts may be unavoidable. However, future administrative and legislative efforts should emphasize the need to balance our energy needs with the protection of sensitive resources. Certainly, federal agencies, project applicants, Congress, and interest groups such as the National Trust, working collaboratively, can ensure that every effort is made to avoid impacts where possible.

Achieving the nation's energy goals should be done through a careful and deliberate process, relying on existing environmental and preservation laws to guide decision-making. In fact, the Bureau of Land Management (BLM) is doing just that. BLM recently initiated Section 106 of the National Historic Preservation Act (NHPA) to evaluate the potential adverse effects of a solar energy development program on its lands. To meet the requirements of the Section 106 process, BLM is preparing a Programmatic Agreement (PA) that, when finalized, will guide the implementation of the Section 106 review process. The National Trust is participating as a consulting party in the development of this agreement. We believe the PA will ensure that specific projects are sited wisely and approved only after their impacts are properly understood.

Such upfront efforts to regulate the siting of utility-scale solar energy developments are important because these projects can occupy massive footprints on the land. If improperly located, they can have devastating consequences for historic and cultural resources. Several proposed projects could have particularly severe visual impacts on one of the last rural stretches of Route 66, a cherished American landscape. Other threatened cultural resources are large land areas significant to Indian tribes. These traditional cultural properties and cultural landscapes derive their significance from the land itself, and visual intrusions may negatively impact the rich

heritage and continued cultural practices of tribes. Additionally, significant archaeological sites—many unaltered for centuries—are prevalent on BLM lands, particularly in the southwestern United States.

The National Trust is pleased to see significant leadership from the BLM's California Desert District on these issues. In pre-application meetings, BLM's resource managers have effectively steered applicants away from well-known sensitive historic sites and have not permitted development in our preferred exclusion areas listed below. In addition, BLM has made clear that developers will be required to conduct comprehensive cultural resource surveys of affected land prior to project approval. As less than 7% of BLM land nationwide has been inventoried, we expect significant cultural resources will be identified during this process. The surveys will be useful for avoiding and minimizing impacts to sites and, when avoidance is impossible, will provide guidance for mitigating resource losses.

As both administrative and legislative efforts to promote and advance solar energy development move forward, the National Trust believes that the following guidelines will help achieve this goal while also ensuring the best possible protection of irreplaceable historic and cultural resources:

Conduct Resource Inventories on Potentially Impacted Land

Understanding where historic and cultural resources are located in advance of solar projects will help to alleviate potential conflicts between these resources and solar energy development. For important tribal resources, this can be accomplished with early and thorough consultation with Indian tribes and Native Hawaiian organizations. Early consultation is vital for siting solar developments in ways that avoid impacts to properties of traditional religious and cultural significance. Given the potentially extensive footprints of utility-scale solar developments, tribal input will be important for guiding solar projects to appropriate parts of landscapes. Consultation should be initiated at the earliest possible time after a project is proposed and, ideally, should be conducted via methods most preferred by the tribes involved. Making a concerted effort to develop trusting relationships with tribes can help to ensure that the collection of information about potential impacts to sites, resources and landscapes is timely and thorough. This information can then be used to identify more appropriate locations for solar development.

Similarly, completing early cultural resource surveys of areas with high potential to produce utility-scale solar energy will help to identify lands with few resource conflicts, and avoid direct and indirect impacts to significant cultural resources. These resources represent the most intact, important and unique information known about our nation's history and prehistory and, accordingly, should be preserved in place whenever possible. If impacts are unavoidable, cultural resource survey findings should be used to help identify the best measures for first, minimizing and second, mitigating impacts. Minimizing impacts could include adjusting a project's location so that it physically and visually impacts the fewest significant sites possible, or using technology that does the least damage to surface sites. Mitigating impacts—the least desirable option—could include creating educational materials for nearby teachers and students or pursuing off-site mitigation, such as stabilizing and interpreting nearby sites to balance out impacts to sites within the project area.

Employ Preferential Siting

The National Trust also urges the Subcommittee to prioritize siting of utility-scale solar development on those public lands that have already been disturbed by previous agricultural, mining, or other activities that may already have compromised cultural resource values or resulted in contamination by pollutants or hazardous substances. The Environmental Protection Agency (EPA) tracks these contaminated "brownfield sites," which include abandoned mine lands, Superfund sites, and Resource Conservation and Recovery Act (RCRA) sites. At the end of 2008, EPA listed at least 263 such sites, totaling nearly 6.5 million acres, that have very good or excellent potential for utility-scale solar development.[1] In addition to the health, environmental and economic benefits to communities from brownfield remediation[2], these lands may have great advantages for utility-scale solar energy development. First, they often are already zoned for industrial uses and frequently have existing electrical transmission infrastructure that can be upgraded more quickly and inexpensively than new infrastructure can be developed. Second, these lands frequently are located near population centers, thus allowing electrical generation close to the

[1] See Environmental Protection Agency 2008. "Mapping Data Excel File". http://www.epa.gov/renewableenergyland/maps_incentives.htm

[2] Environmental Protection Agency 2008. "About Brownfields". http://www.epa.gov/brownfields/about.htm

point of use and increasing efficiency in energy transfer while reducing landscape disturbances. A success story from Colorado illustrates the benefits of siting utility-scale solar developments on previously disturbed sites. The Fort Carson Landfill Solar Development near Colorado Springs is a 2 MW photovoltaic array built on 12 acres of a former landfill. Generating approximately 3200 MWh/year, the development fulfills approximately 2.3 % of Fort Carson's energy consumption. [3]

Another way to facilitate solar energy development while minimizing impacts to historic and cultural resources would be to locate solar projects within or as close to existing energy corridors as possible. This siting strategy would confine disturbances to already impacted areas, rather than spread the impacts across the landscape. It would also reduce the cost of constructing transmission lines for getting electricity to the grid, and lessen landscape disturbances associated with new transmission lines.

Finally, the National Trust believes that federal agencies should make every effort to avoid the impacts of utility-scale solar energy development on lands that have been designated or acquired by the federal government for the purpose of conserving historic and cultural resources. Accordingly, the National Trust suggests that the following lands be excluded from utility-scale solar development:

- Units of the National Park System;
- Units of the National Landscape Conservation System;
- National Monuments;
- National Historic and Scenic Trails;
- National Historic Byways;
- National Historic Landmarks;
- National Historic and Archaeological Districts;
- National Heritage Areas;
- U.S. Forest Service Archaeological Areas;
- Areas designated by Congress for the purpose of protecting cultural resources;
- Properties eligible for or listed on the National Register of Historic Places including Traditional Cultural Properties;
- Sacred Sites identified by Executive Order 13007; and
- Areas of Critical Environmental Concern.

In addition to excluding these lands, it is important to establish adequate buffers between them and solar development projects. The sizes of buffers would depend, in part, on the topography of the area, the types of cultural resources present, and the size and type of the solar project and supporting energy infrastructure. Establishing guidelines for best siting practices, including the use of buffers around significant cultural resources, would expedite environmentally responsible utility-scale solar energy development.

Promote Technologies With the Least Potential for Impacts

The National Trust believes that ongoing advances in solar, energy storage and transmission technologies will enable the United States to meet and even exceed its renewable energy goals. We specifically promote the use of current technologies and the development of future technologies that have the least possible physical and visual impacts to significant cultural resources. Such low-impact solar developments include those that can be sited on ungraded landscapes and those whose components can be dispersed to lessen physical and visual impacts to specific significant resources.

Conclusion

America's rich cultural heritage represent the history of our society and help to define us as a nation. We are fortunate that many of these important places and artifacts are located on our federal public lands. The federal land managing agencies are the stewards of our public lands so they have a responsibility to afford the highest degree of preservation to our irreplaceable historic and cultural resources, independent of the lands' renewable energy development potential. The National Trust believes that conducting early stage planning and dialogue among diverse stakeholders, including performing tribal consultation and cultural resource surveys of lands with high potential for solar energy development, will help to promote preservation while facilitating cost- and time-efficient development. Early identification of high potential development areas that contain few significant resources will promote expedited and mutually agreeable solar energy development.

As the Subcommittee considers how to build consensus for solar energy development on public lands, the National Trust strongly encourages inclusion of early

[3] United States Army Environmental Command 2008. "Solar Power Array Constructed on Fort Carson Landfill". http://www.aec.army.mil/usaec/newsroom/update/win08/win0812.html

planning that considers historic and cultural resources. Our nation's goal should be to foster renewable energy development without destroying significant components of our national historic and cultural heritage.

We are happy to answer any questions the Subcommittee may have about our recommendations, and we appreciate the opportunity to share our comments.

[A letter submitted for the record by the Natural Resources Defense Council follows:]

Natural Resources Defense Council

May 20, 2009

The Honorable Jim Costa
Chairman
House Subcommittee on Energy and Mineral Resources
1626 Longworth House Office Building
Washington, DC 20515

Dear Mr. Chairman:

The Natural Resources Defense Council (NRDC) appreciates the opportunity to enter into the public record the following comments regarding the Subcommittee's Field Hearing on solar energy siting held in Palm Desert on May 11, 2009.

NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.2 million members and online activists nationwide, served from major offices in New York, Washington, Los Angeles, San Francisco, Chicago and Beijing.

NRDC would like to endorse the testimony provided by Carl Zichella, Director of Western Renewable Programs for the Sierra Club. NRDC is working closely with the Sierra Club and other environmental organizations on the issue of solar energy siting. Like many of our colleagues in the environmental community, NRDC and the Sierra Club recognize the need to balance renewable energy production with protection of our most treasured natural lands.

Mr. Zichella's testimony highlights guiding principles that will be essential to striking this critical balance. These principles include siting projects on disturbed lands whenever possible, providing incentives for siting on private lands, and conducting both short and long term planning processes for renewable energy development on public lands. NRDC strongly supports these policies and believes that they can help put us on a "road to consensus" as Mr. Zichella's testimony asserts.

NRDC would also like to call to the attention of the Subcommittee members an apparent mis-characterization of NRDC's Path to Green Energy online mapping tool that occurred during the field hearing. We understand that a utility representative suggested that the Path to Green Energy maps indicate expansive areas in Southern California that NRDC has "green lighted" for energy development.

The Path to Green Energy tool developed by NRDC in collaboration with the Audubon Society and Google Inc. identifies the most well-known, environmentally sensitive lands across 13 western states in order to show where renewable energy would be inappropriate. The maps do not "green light" or endorse the siting of renewable energy in any specific areas.

Knowing the location of important natural resources is just the first step towards ensuring that new projects and transmission lines are built in an environmentally responsible manner. The Path to Green Energy maps are not intended to serve as substitutes for the complex siting decisions which must take place in full compliance with environmental law. Any characterization of the project that suggests otherwise is inaccurate and in fact has the potential to be counterproductive to the goal of facilitating environmentally responsible siting.

Thank you for the opportunity to enter these comments into the public record.

Sincerely,

Johanna Wald
Senior Attorney

cc: The Honorable Kenneth Salazar, Secretary of the Interior

[A letter submitted for the record by Ceal Smith, Director, San Luis Valley Water Protection Coalition, follows:]

Congressman Jim Costa
Chairman, Subcommittee on Energy and Mineral Resources
1324 Longworth House Office Building
Washington, DC 20515
Email: marcie.cooperman@mail.house.gov

Subject: Solar development in the San Luis Valley, CO, comment letter on the field hearing on Solar Energy Development On Federal Lands: The Road to Consensus held in Palm Desert, California, May 11, 2009.

Dear Congressman Costa and Subcommittee Members:

Thank you for extending the comment period on above mentioned hearing. The San Luis Valley has become the major focal point for industrial solar development in Colorado. More than 50% of the Valley is publicly owned, thus the future of our high-elevation rural Valley hangs in the balance of Federal energy policy decisions currently being debated by the Department of Interior, Congress and this committee. Being far from DC, Denver and the urban demand centers, the concerns of our 40,000 constituents have not been heard. I hope this marks an end to our invisibility.

The San Luis Valley is home to one of our nations most spectacular natural and cultural landscapes, recently recognized when Congress passed the Sangre de Cristo National Heritage Act of 2009.

Solar energy development on the massive industrial scale currently being proposed is entirely untested. Impacts on air quality, watersheds, ecosystems, biodiversity and our communities remain largely unexamined. In the absence of an informed energy policy, unregulated market-driven solar energy development could very well undermine the extraordinary ecological and cultural values of our Nations rural areas including the San Luis Valley.

Large-scale solar facilities are already being sited on private lands within the Valley. I do not believe we should sacrifice our public lands too. Until existing degraded lands and the built environment, especially near urban point-of-use centers are fully utilized, it simply makes no sense to destroy intact (and carbon sequestering) ecosystems on our most valuable public lands.

By providing incentives for distributed generation, solar energy development can be integrated into the existing fabric of our rural agricultural economy rather than uprooting it through large-scale industrialization. As you consider solar energy development on public lands I urge you to prioritize the following:

1. Energy efficiency and conservation;
2. Smart-grid upgrades to existing infrastructure before constructing new transmission;
3. Federal and state incentive programs to promote point-of-use distributed generation through Feed-In Tariffs, progressive net metering and long-term, low-interest loan programs targeting agriculture, business, municipalities, rural communities and households;
4. Use of degraded lands and the build environment near urban centers first;
5. Use of low-water dry cooling solar technologies in arid and semi-arid environments;
6. Avoidance of National Parks and Monuments, National Wildlife Refuges, Wilderness, Roadless Areas, State, Federal, County or citizen recognized special conservation areas, intact public lands, prime agricultural lands, wetlands, wildlife corridors, cultural sites and Federal or State endangered species habitat;
7. Pilot studies geared at developing effective mitigation and "best management practices" for large-scale solar energy facilities should they be proven to be necessary;
8. Development of a comprehensive study by our nations top independent energy and policy experts leading to adoption of a National Energy Policy.

Lastly, I would like to encourage the Subcommittee to continue holding hearings on renewable energy development, particularly in our part of the Southwest. Vital to an authentic public process, we urge you solicit non-industry citizen and expert testimony. As we stand at the crossroads of the new energy transition, a fundamentally new paradigm is emerging that those of us at "ground-zero" are acutely aware of.

I respectfully submit these comments for the Record of the Hearing on behalf of our members and stakeholders in the San Luis Valley and beyond. Please notify us of further hearings on renewable energy development.

Sincerely,

Ceal Smith
Director
San Luis Valley Water Protection Coalition

cc: Sen. John Salazar
Sen. Michael Bennett
Sen. Mark Udall
Interior Secretary Ken Salazar
DOE Secretary Steven Chu
Gov. Bill Ritter
Sen. Gail Schwartz

The San Luis Valley Water Protection Coalition is a grassroots non-profit organization representing a broad spectrum of stakeholders united by the belief that the vital ecological, wildlife, cultural, agricultural and water resources of the upper Rio Grande Basin in the San Luis Valley, CO should not be jeopardized by unsustainable industrial development. By working with communities, government and various stakeholder groups, WPC is actively engaged in promoting an emerging culture of sustainability in the San Luis Valley that is responsive to climate change and the need to move away from destructive fossil fuel dependency.

[A letter submitted for the record by The Protect Our Communities Foundation follows:]

The Protect Our Communities Foundation

May 26, 2009

Congressman Jim Costa
Chairman, Subcommittee on Energy and Mineral Resources
House Natural Resources Energy and Mineral Resources Subcommittee
1324 Longworth House Office Building
Washington, DC 20515

Subject: The Protect Our Communities Foundation Comment Letter on May 11, 2009 Field Hearing on "Solar Energy Development on Federal Lands: The Road to Consensus"

Dear Congressman Costa:

Thank you for extending the comment period following the May 11th hearing to allow organizations like The Protect Our Communities (POC) Foundation (www.protectourcommunities.org). POC was unable to send a representative to the hearing and we are grateful for this opportunity to submit comments on use of federal lands for large-scale solar development. POC is a 501(c)(3) non-profit corporation headquartered in San Diego County that began as a grassroots citizen organization three years ago. The main focus of POC is the energy future of San Diego County and Southern California. POC fully supports the California Energy Action Plan, developed jointly in 2003 by the California Public Utilities Commission and the California Energy Commission. The Energy Action Plan prioritizes local distributed generation to meet California's energy needs.

California's renewable energy approach to date has been almost completely focused on remote renewable energy resources and the transmission associated with such development. Such an approach had merit in the 1980s when California became the world leader in renewable energy and solar panels cost $12 to $15/watt (2008 dollars). However, the world has changed. Commercial solar photovoltaic (PV) installations now cost less than $4/watt.

Nevertheless, the Subcommittee on Energy and Mineral Resources appears to accept as a given that large-scale desert solar installations are so much more cost-effective than the urban PV solar alternative that it justifies the transmission cost, environmental trade-offs, and controversy of such desert development. This may have been true in the 1980s. It is not true in 2009.

The least-cost solar resource in 2009 is in California's developed urban and suburban areas, and this resource is vast. All urban solar deployments would be compat-

ible dual-use of existing rooftops and parking lots, avoiding the dilemma you noted in your opening remarks at the hearing—"Solar power is very land-intensive, and siting a solar plant means that most if not all of the other uses of that land are precluded."

It is true as you noted that "some of the largest (solar) resources are to be found on our public lands." However, these large solar resources are only useful to the extent they are cost-effective in their own right and can be delivered efficiently to California or Southwestern population centers. As we are discovering through individual transmission line proposals and the Renewable Energy Transmission Initiative (RETI) process, the cost of delivery via new transmission may be astonishingly high, without even addressing the environmental compromises necessary to construct the transmission lines.

The RETI process also revealed that the least-cost solar solution to reaching our target of 33 percent renewable energy by 2020 would consist predominantly of distributed PV. Why? Because state-of-the-art PV is more cost-effective than solar thermal, and tens of thousands of megawatts of PV could be added at the distribution level with little or no upgrading to the existing transmission system required.

The California Energy Commission's RETI Phase 1B Final Report (January 5, 2009 version) makes the following points about state-of-the-art PV (pp. 5-27, 5-28):

> *There is considerable commercial interest in utility-scale "thin film" systems. This sensitivity tests an alternate thin film technology for solar with capital costs of about $3,700/kWe (AC), roughly half that of tracking crystalline. Notably, these (PV) capital costs are also lower than the large-scale solar thermal projects; therefore thin film solar is assumed to occur both at the distributed scale (20 MW) and also in large scale blocks (150 MW).*

Unlike solar thermal technologies, PV can be deployed in urban and suburban areas in compatible dual-use applications that require no environmental trade-offs. Urban/suburban PV is more cost-effective than remote PV because it avoids the (1) high cost of new transmission lines and (2) high line losses, in the range of 15 percent, during peak demand periods.

The RETI report goes on to say that distributed PV at a current state-of-the-art capital cost of $3,700 per kilowatt can provide two-thirds of what California needs going forward to reach 33 percent by 2020 (p. 5-31):

> *The results of this sensitivity run are dramatic. More importantly, the cost-competitive in-state (distributed PV resources) increase by more than 20 times to about 45,000 GWh/yr. This figure is over two-thirds of the net short requirement. The large majority of these (distributed) resources are 20 MW solar PV projects assumed to connect to the distribution system.*

In February 2009 RETI reduced its estimate of the gap that must be filled to reach 33 percent by 2020, such that 45,000 GWh/yr from distributed PV could meet 75 percent of the need.

The November 2008 Los Angeles Department of Water & Power (LADWP) "Solar Los Angeles" strategic plan is a good real-world example of the RETI distributed PV scenario. It consists of 780 megawatts of urban PV and 500 megawatts of remote solar. This is two-thirds urban solar, one-third remote solar. With this urban/remote balance little if any new transmission will be necessary for the City of Los Angeles to go solar. LADWP is a public utility and "Solar Los Angeles" reflects the intent of the City of Los Angeles to become a leader in smart and urban renewable energy development.

San Diego Gas & Electric (SDG&E) service territory offers another example of the large role urban PV could and should play in California's, and the Nation's, renewable energy portfolio:

- There is approximately 4,500 megawatts of commercial rooftop and commercial parking lot PV potential in SDG&E territory;
- Peak load in SDG&E territory in 2008 was 4,348 megawatts, and the average load over the course of the year is approximately 2,400 megawatts;
- 4,500 megawatts of PV is equivalent to approximately 900 megawatts of continuous power generation over the course of a year;
- The San Diego area could generate approximately 40 percent of its year-round power demand from urban commercial rooftop and commercial parking lot PV alone.
- That is without considering approximately 2,500 megawatts of PV potential on residential rooftops in SDG&E territory;
- If the residential PV resource is fully developed in addition to the commercial PV resource, 60 percent of the San Diego area's year-round power demand could be met with urban PV;
- This huge solar resource has no land use requirements, as it is all compatible dual-use, and has no environmental impacts.

RETI has attempted to sidestep the implications of its oblique endorsement of distributed PV solution to California's renewable energy goal by stating there is no way PV manufacturers could mobilize quickly enough to provide 2,000 to 3,000 megawatts of PV per year to realize the potential of the distributed PV scenario. This is not a valid concern. Spain, with about the same population as California and a less productive economy, added nearly 2,500 megawatts of PV in 2008.

More than 5,000 megawatts of PV was installed worldwide in 2008. A POC representative attended the 1st Thin-Film PV Summit in San Francisco in early December 2008. Statistics on worldwide PV manufacturing capacity were presented at the Summit. Worldwide thin-film PV production capacity reached 3,600 megawatts per year in 2008. It is projected to reach 7,400 megawatts per year in 2010. Worldwide conventional polycrystalline silicon PV production capacity reached 13,300 megawatts per year in 2008. It is projected to reach 20,000 megawatts per year in 2010. There will be some scale-back on the 2010 capacity numbers due to the state of the world economy.

Worldwide PV manufacturing, either thin-film alone or thin-film and conventional polycrystalline silicon, could readily supply a 3,000 megawatts per year PV demand in California and much higher PV demand for the U.S. as a whole. The Wall Street Journal recently reported that conventional solar panel prices have fallen by $2/watt since 2008, due to too much solar manufacturing capacity chasing too few solar projects. It is disingenuous of RETI to dismiss the distributed PV solution on grounds of PV manufacturing capacity constraints.

POC views the emphasis on new transmission as necessary precursor to substantial progress on renewable energy goals as a testament to very effective lobbying by America's investor-owned utilities (IOUs). The IOUs have for the moment successfully adapted a critical new problem, climate change, to a century-old revenue generation scheme.

IOUs make far more profit on transmission lines than any other types of infrastructure they build. For example, SDG&E's proposed 1,000 MW Sunrise Powerlink transmission line, with an estimated cost of $1.9 billion, will generate at least $1.3 billion in profits (in current dollars) for SDG&E shareholders over the financial life of the project. $700 million of those profits will be credited to the company in the first eight-and-a-half years. Remote renewable energy generation requires transmission. Local renewable energy generation does not.

The nation has over 527,000 miles of existing high voltage transmission. See Figure 1. This transmission infrastructure serves a declining demand for electricity. U.S. electricity demand declined approximately 2 percent in 2008 and is expected to decline another 1 percent in 2009.

Southern California, with an average electrical demand of approximately 14,000 megawatts, has approximately 20,000 megawatts of import capacity on existing transmission lines. See Figure 2. Southern California can already import 100 percent of its average electrical load. There may be some need to upgrade older lines so they can continue to provide decades of reliable service. However, neither California nor the Nation is experiencing a shortage of transmission as a general matter.

The policy challenge is the difficult work of ramping down the existing flow of fossil power on these lines and methodically replacing it with renewable energy generation. A reasonable proposal of this sort was presented to the California Energy Commission in early 2007 by, Solar Millennium, a major solar thermal developer. Called the Mojave Solar Development Zone, it would preferentially locate solar thermal projects along the right-of-ways of major existing highways with existing high voltage transmission lines in the Mojave Desert. These highway corridors already have a combined 6,000 megawatts of existing transmission capacity.

Figure 3 shows the corridors identified by Solar Millennium for inclusion in its proposed Mojave Solar Development Zone. In reality the zone identified by Solar Millennium is far larger than it needs to be to generate 6,000 megawatts or even 10,000 megawatts of solar power. Solar thermal or PV can produce about 100 megawatts per square mile. One hundred square miles would produce about 10,000 megawatts. One-half mile solar right-of-ways on each side of the highway for only 100 miles of the 100s of highway miles shown on the Solar Millennium map would suffice to provide 10,000 megawatts of solar power.

This commonsense proposal pre-dates the RETI process and apparently gained little or no traction within the RETI process itself. One likely reason is that the solar land rush had already begun, and restricting solar develop to a limited Mojave Solar Development Zone would have inconvenienced developers with more remote and undeveloped properties in some phase of negotiation. Another likely reason is that it made use of existing transmission and presumed that existing fossil transmission rights would be transferred to the solar projects. This is a reasonable presumption,

but is also a strategy the IOUs have steadfastly opposed. The California Energy Commission and the state of California missed a golden opportunity in 2007 to gain some control of the desert land rush through some form of the Mojave Solar Development Zone and failed to act.

The easiest pathway from a political standpoint, to give the IOUs a mandate to overlay public lands and the Nation with new transmission, will result in tremendous controversy and probable gridlock in moving forward on the development of renewable generation. The affected citizens and interest groups will oppose many of these projects for the right reasons—that there are better, more cost-effective, and less damaging solutions that are being ignored or dismissed for reasons of political convenience.

It is understandable why an IOU would see renewable energy solutions through a transmission lens. However, that lens is costly, inefficient, controversial, and damaging. The fact that a solar strategy with heavy reliance on new transmission would be very costly is positive financial news to an IOU. The more the new transmission system costs, the more the IOUs will thrive economically. Yet it is an unnecessary and largely avoidable financial burden on everyone else. The Subcommittee on Energy and Mineral Resources should not reflexively adopt today's IOU financial reward system as the point-of-departure for crafting the nation's solar energy development policy on public lands.

POC believes that you and all members of the Subcommittee on Energy and Mineral Resources genuinely want to address climate change. POC is glad for this opportunity to provide input about the most efficient way to achieve that end. We do believe that, when we put all the costs on the table, there is no question that urban solar should be the centerpiece of our solar strategy and not an afterthought.

POC looks forward to continuing to work with the Subcommittee on Energy and Mineral Resources to maximize solar energy production in the most cost-efficient and environmentally sound manner. Please contact Denis Trafecanty at (760) 703-1149 or by e-mail at denis@vitalityweb.com if you would like further information regarding any of the comments in this letter.

Sincerely,

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Sen. Barbara Boxer
Sen. Harry Reid
Sen. Jeff Bingaman
Congressman Nick Rahall
Congressman Henry Waxman
Congressman Ed Markey
Congressman Bob Filner
Congresswoman Susan Davis
Congressman Duncan Hunter, Jr.
Interior Secretary Henry Salazar
DOE Secretary Steven Chu
EPA Administrator Lisa Jackson
Gov. Arnold Schwarzenegger
Carl Pope, Sierra Club
Frances Beinecke, NRDC

Figure 1. Map of Existing 527,000 Miles of U.S. High Voltage Transmission Lines

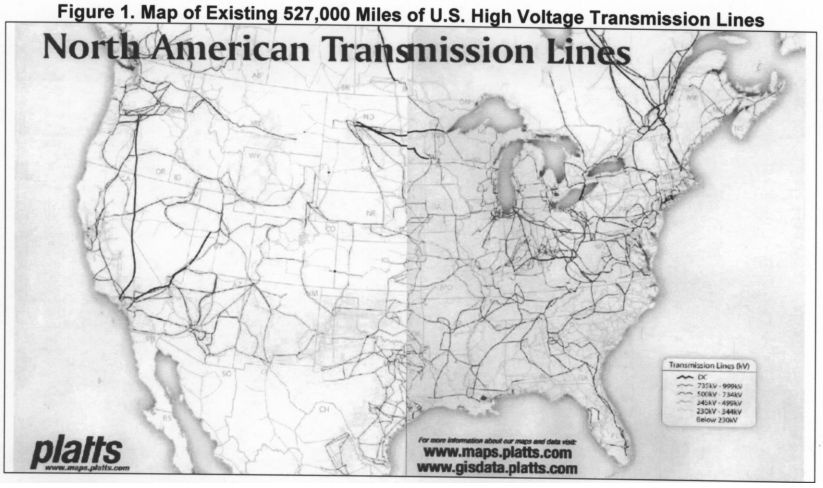
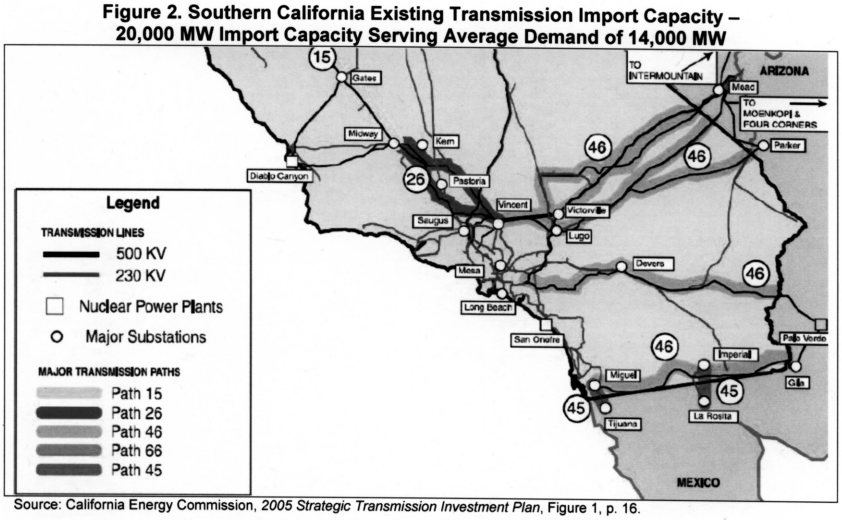
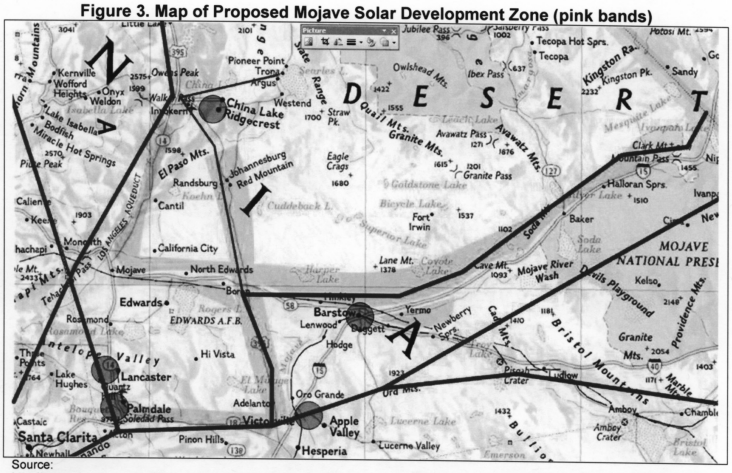


Figure 2. Southern California Existing Transmission Import Capacity – 20,000 MW Import Capacity Serving Average Demand of 14,000 MW



Source: California Energy Commission, *2005 Strategic Transmission Investment Plan*, Figure 1, p. 16.

Figure 3. Map of Proposed Mojave Solar Development Zone (pink bands)



Source:
http://www.energy.ca.gov/2007_energypolicy/documents/2007-04-17_workshop/public_comments/22RainerAringhoffSolarMillenium.pdf

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[A letter submitted for the record by The Wildlands Conservancy (TWC) follows:]

May 26, 2009

To: Committee on Natural Resources 1324 Longworth House Office Building Washington, D.C. 20515

From: The Wildlands Conservancy (TWC)

SUBJECT: Comments re: Congressional Subcommittee on Energy and Mineral Resources Field Hearing on Solar Power Development on Federal Lands: The Road to Consensus, in Palm Desert, CA on Monday May 11th, 2009

Greetings,

Thank you for the opportunity to comment on the Congressional Subcommittee Field Hearing and we appreciate Congressman Jim Costa's leadership in facilitating the hearing and bringing people together to discuss this important issue. The Wildlands Conservancy (TWC) is a 501c3 non-profit conservation organization with the dual mission to preserve the beauty and biodiversity of the earth and to fund outdoor education programs for the youth. TWC has a vested interest in the current renewable energy discussion and corresponding developments being proposed for federal lands within the California desert region. TWC has preserved more land in California with private funds than any other conservation organization and owns the largest nonprofit preserve system in CA.

TWC is very supportive of renewable energy and eliminating our dependence on fossil fuel energy sources and reduce our carbon footprint. TWC leads by example and our first preserve was established off-the-grid and self-sufficient in 1995. TWC is also passionate about land conservation and preserving functioning ecosystems and initiated the largest private land acquisition project in U.S. History, The Catellus Land Purchase. The purchase of over 600,000 acres in the CA Desert connected Joshua Tree National Park to Mojave National Preserve with public conservation lands. These lands were all gifted to the Department of Interior for management with the understanding that they were purchased for conservation. Just 4 years after the completion of the project, applications for renewable energy development began to cover the CA Desert. We feel it is imperative that the siting of renewable energy projects and the greening of California's energy supply be accomplished while protecting our treasured landscapes and fragile ecosystems. We encourage our political representatives to engage in an open and transparent process with all stakeholders, including those in the CA deserts, to make responsible decisions about siting projects that benefit the public and rate payers while protecting the environment.

Currently there is a "land rush" in the CA desert because the low cost of "leasing" public lands for renewable projects creates an economic incentive for industry. Also

since these projects result in a permanent impact on the land and degrade adjacent habitat the current process of using the Right of Way (ROW) application is inappropriate and does not adequately address the costs and impacts of such projects. Furthermore, there is intense pressure to get projects online and take advantage of federal stimulus funds which creates additional pressure to accelerate the siting, planning, and permitting of these projects and fast-track the environmental review processes. We urge renewable energy developers to access and acquire disturbed lands, both private and public, as this will surely speed the environmental review process and have the best chance of getting projects "shovel-ready" by December 2010. These least-conflict areas provide a win-win solution for all stakeholders.

One strategy for private lands as outlined in the testimony given by Bill Corcoran of the Sierra Club supports companies acquiring disturbed lands by creating incentives to aggregate subdivided private lands by forming Enterprise Zones.

We are adamant that special attention and consideration be given to the large footprint that will accompany these industrial-scale solar facilities in the California desert region. The bull-dozing and scraping of vegetation and topsoil that will occur in the construction of solar thermal power plants over thousands of acres is duplicitous to the cause of combating climate change, as much carbon is sequestered by desert flora and soil microbiota. We also feel that the destruction of critical habitat for Desert Tortoises and other wildlife, rare plants, and desert water resources (riparian habitats, aquifers, etc.) that will result from these projects being sited on pristine lands and core habitat cannot be mitigated properly.

We would like to comment on part of the testimonies given by Rashelle Chong (CA Public Utilities Commission) and Julia Levin (CA Energy Commission) that refers to the state's RETI (Renewable Energy Transmission Initiative) process as being critical in this discussion. She stated that the RETI process is consensus-based and that everyone was invited during Phase 1 of the process. This, however, is not true, as several desert stakeholders (local governments, conservation groups, citizen action groups etc) requested a position on the Stakeholder Steering Committee (SSC) in (December 2007) and were denied. (Although many of the conference calls are now "open" initially many were not and folks were turned away from meetings and not allowed to give input or vote.) Furthermore the SSC is dominated by industry and energy agencies and some utilities are represented twice with votes.

We do not agree that there should be one lead energy agency, such as Federal Energy Regulatory Commission or Western Governors' Association (as suggested by Congresswoman (WY) Cynthia Lummis); furthermore WGA is not an "agency" with authoritative power over these designations currently). However we do agree with Bill Corcoran that the power should not be concentrated in any one entity but should at the least include a co-lead of a federal land managing agency such as the Bureau of Land Management.

We strongly encourage the question addressed to the utilities by Congresswoman Mary Bono-Mack that new transmission technologies, such as carbon fiber lines and superconductors, should be heavily researched and considered in the transmission planning process. Although these technologies may have higher initial costs the long term benefits and efficiency must be weighed against these short-term costs. It is essential to incorporate in a long-term strategic plan and protect public and private lands from reckless transmission corridor expansion and designation by restringing existing lines with these new wires.

In closing we feel it is important to use many of the tools and new technologies to green the power supply. This includes exploring options such as feed-in tariffs, expanding AB 811 funding and creating other new incentives for local distributed energy at the source of need to minimize remote industrial-scale projects and unnecessary transmission. This will provide the maximum benefit to the residents of California, both present and future generations while providing the opportunity to incorporate other new technologies as they become available.

Thank you for reviewing these comments. We hope that you earnestly consider these in the preparation and planning of future hearings that may incorporate public testimony regarding the issue of solar development on federal lands.

Sincerely,

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