

**MINUTES OF THE JOINT MEETING OF
THE ASSEMBLY COMMITTEE ON COMMERCE AND LABOR
AND
THE SENATE COMMITTEE ON COMMERCE, LABOR AND ENERGY**

**Seventy-Sixth Session
February 9, 2011**

The Joint Assembly Committee on Commerce and Labor and the Senate Committee on Commerce, Labor and Energy was called to order by Chair Kelvin Atkinson at 1:01 p.m. on Wednesday, February 9, 2011, in Room 4100 of the Legislative Building, 401 South Carson Street, Carson City, Nevada. Copies of the minutes, including the Agenda ([Exhibit A](#)), the Attendance Roster ([Exhibit B](#)), and other substantive exhibits, are available and on file in the Research Library of the Legislative Counsel Bureau and on the Nevada Legislature's website at www.leg.state.nv.us/76th2011/committees/. In addition, copies of the audio record may be purchased through the Legislative Counsel Bureau's Publications Office (email: publications@lcb.state.nv.us; telephone: 775-684-6835).

ASSEMBLY COMMITTEE MEMBERS PRESENT:

Assemblyman Kelvin Atkinson, Chair
Assemblywoman Irene Bustamante Adams
Assemblywoman Maggie Carlton
Assemblyman Richard (Skip) Daly
Assemblyman John Ellison
Assemblyman Ed A. Goedhart
Assemblyman Tom Grady
Assemblyman Cresent Hardy
Assemblyman Pat Hickey
Assemblyman William C. Horne
Assemblyman Kelly Kite
Assemblywoman Marilyn K. Kirkpatrick
Assemblyman John Ocegüera
Assemblyman James Ohrenschall
Assemblyman Tick Segerblom

ASSEMBLY COMMITTEE MEMBERS ABSENT:

Assemblyman Marcus Conklin, Vice Chair (excused)

SENATE COMMITTEE MEMBERS PRESENT:

Senator Michael A. Schneider, Chair
Senator Shirley A. Breeden, Vice Chair
Senator Allison Copening
Senator Elizabeth Halseth
Senator David R. Parks
Senator Michael Roberson
Senator James A. Settelmeyer

SENATE COMMITTEE MEMBERS ABSENT:

None

GUEST LEGISLATORS PRESENT:

None

STAFF MEMBERS PRESENT:

Marji Paslov Thomas, Committee Policy Analyst
Sara Partida, Committee Counsel
Matt Nichols, Senate Committee Counsel
Andrew Diss, Committee Manager
Patricia Blackburn, Committee Secretary
Sally Stoner, Committee Assistant

OTHERS PRESENT:

Rose McKinney-James, representing the Solar Alliance
Judy Stokey, representing NV Energy
Thomas Fair, Vice President, Renewable Energy, NV Energy
John Owens, Director, Customer Renewable Generation and Energy Efficiency, NV Energy
Leslie Bar-Ness, Government Relations Manager, Solyndra, Inc., Fremont, California
Claudia Eyzaguirre, The Vote Solar Initiative, San Francisco, California
Annie Carmichael, Government Affairs Manager, Interior West, SunEdison, Denver, Colorado
Chris Brooks, Director, Bombard Renewable Energy
Larry Morasse, General Manager, Western 102 Plant, Barrick Goldstrike Mines, Inc.

Tom Clark, representing Interwest Energy Alliance
Ellen Allman, Senior Business Manager, Terra-Gen Power, LLC

Chair Atkinson:

Will the Joint Committee of Commerce and Labor please come to order. [The roll was called, and there was a quorum.]

Before we get into this presentation, we have three Assembly Commerce and Labor bill draft requests (BDR) to be introduced.

BDR 58-152—Revises provisions relating to renewable energy. (Later introduced as [Assembly Bill 133](#).)

Chair Atkinson:

I will entertain a motion.

ASSEMBLYWOMAN KIRKPATRICK MOVED FOR COMMITTEE INTRODUCTION OF BDR 58-152.

ASSEMBLYWOMAN CARLTON SECONDED THE MOTION.

THE MOTION PASSED. (ASSEMBLYMEN CONKLIN AND OCEGUERA WERE ABSENT FOR THE VOTE.)

BDR 53-688—Revises provisions governing certain occupational diseases for employees in certain professions. (Later introduced as [Assembly Bill 131](#).)

ASSEMBLYWOMAN CARLTON MOVED FOR COMMITTEE INTRODUCTION OF BDR 53-688.

ASSEMBLYMAN OHRENSCHALL SECONDED THE MOTION.

THE MOTION PASSED. (ASSEMBLYMEN CONKLIN AND OCEGUERA WERE ABSENT FOR THE VOTE.)

BDR R-174—Expresses support for economic development in Nevada in the sectors of logistics, supply chain management and renewable energy technology. (Later introduced as [Assembly Concurrent Resolution 4](#).)

ASSEMBLYWOMAN KIRKPATRICK MOVED FOR COMMITTEE INTRODUCTION OF BDR R-174.

ASSEMBLYWOMAN CARLTON SECONDED THE MOTION.

THE MOTION PASSED. (ASSEMBLYMEN CONKLIN AND
OCEGUERA WERE ABSENT FOR THE VOTE.)

Chair Atkinson:

On our agenda for this joint Committee meeting we have a presentation by Rose McKinney-James. There are other individuals who will give short presentations and remarks. We are going to allow only three to five minutes for remarks.

Ms. McKinney-James, please come forward to the witness table. I want to thank you again for agreeing to do this for us.

Rose McKinney-James, representing the Solar Alliance:

Thank you very much, Chair Atkinson. I am here in my capacity as legislative representative for the Solar Alliance. Thank you for allowing us the time to provide information which we hope will be helpful to you in your deliberation during the next few weeks. Consistent with my conversations with the Chair, we thought it would be valuable to bring some experts to your attention to share their information on renewable energy.

Nevada has long been a leader when it comes to policy regarding renewable energy. When we talk about renewables we are not just talking about solar, although solar is the emphasis today. We are talking about solar, wind, geothermal, biomass, and small hydro. All of those resources are considered renewable.

This state has been involved in the foundation of renewable energy legislation going back farther than 1995, but I want to give you a sense of how active this body has been over the past couple of decades in establishing Nevada as a leader in this regard.

You will hear the experts offer more detailed information about the various components, the renewable portfolio standard, and net metering. In the hall yesterday, Ms. Gallo with Southwest Gas reminded me that solar hot water heating is an important policy consideration. That will not be a part of this presentation, but I imagine you will see some measures that deal with that issue going forward.

I will ask my colleague, Judy Stokey with NV Energy, to join me at the table so that she can introduce the two representatives from NV Energy who will be making presentations.

Judy Stokey, representing NV Energy:

I have our NV Energy experts here. Our vice president, Thomas Fair, will discuss our large-scale utility renewables. John Owens will go over the smaller solar generation programs that we are very proud of and are a leader in. I believe you all have the presentation on your laptops.

Chair Atkinson:

Yes, members, some of you might be more educated on the Nevada Electronic Legislative Information System (NELIS) than I am. I just got a walk-through, so I can share some knowledge. We do have a large screen that we all can see.

Thomas Fair, Vice President, Renewable Energy, NV Energy:

I would like to give you a brief overview of renewable energy in Nevada from the perspective of NV Energy, the utility that serves most of the state. We will show the first page of the presentation ([Exhibit C](#)). We have a three-part strategy for supplying energy to our customers. The strategy consists of (1) energy efficiency and conservation, (2) renewable energy initiatives and investments, and (3) investment in clean dispatchable generating plants and transmission infrastructure. We believe that following this strategy, as we have for the past five years, has resulted in reliable, affordable, and clean energy that we use to serve our customers. We have added over 3,000 megawatts of very clean, state-of-the-art conventional generation, and at the same time we have been adding significant amounts of renewable resources. We have been involved in putting a lot of facilities into the ground.

The next slide is a depiction of the renewable portfolio standard (RPS), which I believe is a farsighted piece of legislation. I will explain why in just a second. This is a stair-step graph which shows that we are required to add several percent more renewable energy every year. In 2011 we have a standard requirement that we supply 15 percent of our energy from renewable sources. Last year it was 12 percent. That increase of 3 percent does not seem like a lot, but it is the equivalent of 100 megawatts of geothermal energy. These stair-steps are a challenge to keep pace with, but we are now a little over halfway on our journey to the 25 percent level. We have made very good progress. The standard is a percentage of our kilowatt-hour sales, so it is energy-based and based on the actual amount of renewables that are generating power for our customers, not on the future possibility of doing renewables. It is

not simply what we have contracted for; it is actually what energy and credits are going into our supply system.

The next slide shows the outlook for this year. The white bar indicates, going back to 2008, the standard that is required in terms of percentage of retail sales for the RPS. The green bar represents the supply that we had in 2008, 2009, and 2010. The 2010 numbers are still not final, but we have enough data to be assured that we will exceed the standard for 2010 and for 2011 as well. As you can see, in 2009 we were a little short. You would think we could procure a renewable energy. It does not work that way, for practical reasons. In order to meet this standard, new power plants have to be brought into the mix. That means things get delayed. They may not come to fruition at all, or, in some cases, they might be downsized. Projects encounter various obstacles in the development process. On the whole, we are adding enough resources to meet and exceed the standard this year and hopefully in the future.

The chart on the right is the solar portion of the standard expressed in terms of solar credits. The white bar, again, represents the requirement, and the gold represents the actual supply that we had in 2008 and 2009 and the projections for 2010 and 2011. We are far ahead of the standard right now. We are not concerned that we are ahead, but we would be concerned if we were behind. We have some margin to work with on the solar side.

The next chart represents the overall generating capacity that is not just in service, which is the blue portion, but the additional projects that will take place in the future as part of our plan, and whose contracts have been approved by the Public Utilities Commission of Nevada (PUCN). The chart shows what projects have been approved by the PUCN and shows the contribution of a program that my colleague, John Owens, will be talking about in a few minutes, which are solar generation distributed photovoltaic (PV) projects. We also show utility projects that will be coming into the mix. Not all the projects shown are likely to be completed on schedule. We are likely to see some delays. So we have to continue adding resources and not rest on our laurels.

The next chart is the solar portion of our portfolio. It shows projects already in service, which generate about 80 megawatts, and then we see more being added, particularly in 2012 and 2013. Some major projects will be completed by that time. Again, the yellow portion of these bars represents the distributive solar contribution to the supply.

The next chart is simply an overview of our portfolio and, as Rose mentioned, there are other resources for buying significant amounts of our renewable

supply today. Geothermal energy is the mainstay of our supply portfolio. We have had a history in the geothermal industry in this state going back over 20 years. That portfolio continues to grow. In the last five years, we have diversified and added quite a bit of solar, and we are now adding a significant amount of wind energy as well.

On the solar side, there are different technologies. Not all solar projects are the same. You can have photovoltaic resources, which can be large or small projects, and you can have large-scale solar thermal power plants. We have one of those large-scale solar thermal power plants in Boulder City, called Nevada Solar One and owned by Acciona, and there are more on the way.

On wind projects, we have several large-scale projects planned in Nevada. We also have a variety of other resources which are not insignificant, including biomass, small hydro, and heat recovery systems.

This next slide shows a map that depicts where geothermal portfolios are, which is largely in the northern part of the state. It is important to point out that renewable resources are geographically specific. You have to build a plant where the resources are located. You are not able to transport that renewable fuel to a central location, except in the case of biomass. Generally, renewable resources are going to occur where the resource is best and strongest and most easily exploited. The geothermal resources are shown as green dots. The blue dots represent the small hydro facilities. Two wind projects are shown on this map. One is on the far right center of the map, number 44, which is Spring Valley wind project east of Ely. If you look at the very top of the map, number 43 is a 240-megawatt wind development that we are undertaking on the Idaho border. We are bringing some wind into our mix as well as geothermal and solar.

The solar projects are largely concentrated in southern Nevada. The reason is that solar energy is strongest and best where you have the fewest clouds and you are lower in latitude. Everyone is looking to eke out every bit of energy from their investment in these projects.

We also have a transmission line that is a major undertaking for our company. This is a farsighted project designed to knit the state together electrically for the first time. We call this project ON Line; its formal name is One Nevada Transmission Line. It is a 500-kilovolt line connecting the Ely area with Las Vegas. ON Line will enable us to bring renewable resources from northern Nevada to southern Nevada and other markets. It will also enable us to share

solar energy from the south with the north and operate our system more efficiently.

The next slide concerns geothermal development, which has been a mainstay in Nevada. We currently have 17 plants in service. In fact, number 18 is coming into service any day. Last year we were fortunate to have three new large geothermal projects go into service. Faulkner 1 is owned by Nevada Geothermal Power Inc., and the Stillwater and Salt Wells projects are owned by Enel. There are a lot of other developments in exploration. There is probably more geothermal exploration activity in Nevada than in California, although California today has more geothermal energy in its mix. There is a lot of interest in this technology.

The map shows the wind resources in the western United States. You can see that the darker colors represent the strongest resource. We do not happen to have the kind of endowment that you would find in these darker-colored areas in Nevada except for certain small areas, so we will try to make the best use of the wind resources available in Nevada. When we find a site that is suitable, we really want to develop it and make it work, but we do not have the vast resources you might read about. There are difficulties in developing wind farms that many people do not see unless they are involved in it. Some of those difficulties have to do with the fact that we have federal land throughout Nevada, which means we have to follow the National Environmental Policy Act (NEPA) when we do projects. It is a comprehensive environmental review, and it takes a lot of time and is expensive. Developers of these kinds of projects in the Great Plains states often do not have to deal with NEPA at all. They deal only with the state permitting process. Our permitting is difficult compared to theirs.

We also have a significant number of military facilities and civilian aviation facilities that use radar and the air space in Nevada, so wind turbines, which are very tall structures, require a lot of thought as to their location. Avian issues also come into play. We have rough terrain and remote locations. It is not an easy thing to develop wind in Nevada, but we are making progress.

The next slide shows the distribution of solar resources in the United States. As you can see, the Southwest is well endowed. The Mojave Desert is the focal point of many different solar development activities that extend into southern Nevada and into southern California and Arizona. We have seen numerous proposals for new projects. We have done a lot with solar over the last five or six years. There are some major projects completed and in operation, and in 2009 we were the number-one state, per capita, in solar

kilowatts. I do not know if we will stay at number one, but we are going to be a leader in the future. California is doing a lot with solar, as is Arizona, and all of these states who share this resource are working with it. Again, the latitude and the cloudless skies really make a difference in the performance of solar projects.

We have different technologies on solar. There are solar thermal plants, which are large-scale projects that use mirrors to concentrate the sun on tubes that contain a special thermal oil. The oil is circulated throughout these rows of mirrors and into a heat exchanger, where the heat from the oil is given off to water in order to create steam, to drive a steam turbine, to generate electricity. It is like a conventional steam power plant, but the origin of that energy is the sun, and it gets concentrated by the mirrors as is shown in the picture on the right.

Acciona's Nevada Solar One project in Boulder City is one of these path-breaking projects. It has been a tourist mecca, in a way, because many people have wanted to visit that plant and see how it works. It does work well. I think it is still the largest solar plant that has been completed in the last 18 years or so. There are more projects of a larger size on the drawing board in various places, but this is a landmark achievement for the State of Nevada.

On the same slide, there is a picture below which shows a project that we are very excited about. Owned by SolarReserve, the Crescent Dunes project is a 110-megawatt solar plant near Tonopah. That technology is different from the Boulder City project, as it will concentrate the solar energy on a receiver that sits atop a tower. The tower will contain pipes and plumbing with molten salt in it and the salt will capture the solar energy at very high temperatures. Again, the process will pass the heat on to water, to create steam and drive steam turbines. This is a very exciting program because it will store energy in tanks of molten salt, enabling this plant to operate at a steady level for up to 18 or 20 hours per day. It will be less susceptible to passing clouds, and its operation will extend through the evening peak hours. Again, we are looking forward to that project being completed.

The next slide is an aerial view of the Acciona Nevada Solar One project. These are not small projects. This is a very large operation and very interesting to visit.

The next slide depicts some of the new breed of power plant that has come about in the last three or four years, starting with the Nellis Air Force Base photovoltaic project, which was completed in late 2007. I call that a trailblazer

project also because, until that time, you did not see utility-scale photovoltaic projects. You would see small projects scattered around on rooftops. This is a different concept in aggregating solar photovoltaic on the ground in massive arrays to be able to generate significant amounts of energy. I think this will be replicated numerous times in our and other service territories.

Also on this slide is reference to 150 megawatts of additional projects. Fotowatio Renewable Ventures has a 20-megawatt venture near Apex. American Capital Energy has a project near Searchlight. A company called NextLight has been purchased by First Solar, a very prominent United States photovoltaic company, and has a 50-megawatt project near Primm. There is a 65-megawatt project in the pipeline. By creating these large ground-based projects the cost of photovoltaic energy has decreased significantly. That is one of the reasons for doing this.

The next slide shows the locations of these projects in southern Nevada. Crescent Dunes, the solar reserve project near Tonopah, is currently under development. The solid red stars represent projects in operation. The Las Vegas Valley Water District has six projects. There is the Nellis project, Nevada Solar One, and the other photovoltaic projects that are under development. All together we will have over 300 megawatts of solar power when these are built out.

There are certain challenges in integrating renewable energy, including solar. We have a profile showing a red line that represents the output from a solar photovoltaic project and what happens when clouds pass over it. We have to account for the drops and spikes in output that can occur when clouds pass over a solar photovoltaic plant. We are doing some very significant studies right now on how to integrate this type of energy project into our system.

Some of the challenges that developers face in renewable energy projects apply whether it is solar, wind, or other renewable technologies. One of the most prominent challenges is coping with the aftermath of the Wall Street meltdown. Renewable projects are capital intensive by nature. They require a lot of equity and debt to finance. People have to invest that money and take those risks. Therefore, it is a real concern of ours that the capital markets fully recover and that people are able to get financing for these projects.

What happens with federal incentives is key. Tax credits can represent as much as 30 percent of the value of a solar project. Those incentives are very important, and any instability in those incentives while a project is being developed can create a real problem for developers. A stable tax policy is

necessary for people to know, upfront, what the economics are going to be on a project.

Permitting—and I mentioned NEPA—is also key. We are seeing environmental opposition on the rise throughout the West. Also, the resource at the site can be difficult to work with. Another challenge is determining how to move the energy into the market and whether you need transmission lines. Those lines have to be built and permitted, and that takes time and money.

Lastly, one of the solar challenges is that fact that it takes a large footprint. It takes a lot of land, and you have to be able to acquire the land at a reasonable cost in order to make these projects work. The costs are higher than other technologies in our portfolio, although they are coming down, especially in the case of photovoltaic.

We have other sources of generating capacity that must account for the variability of solar energy in order to match the changes in solar output. Then there is the intermittency of this resource. We must approach solar in a very smart way. We need to study this issue thoroughly.

That is the conclusion of my presentation, and I would be happy to take questions now or later.

Chair Atkinson:

Are there any questions?

Assemblywoman Kirkpatrick:

I have a couple of questions on slide three; it shows the yellow, which is a particular project that is online. Does that coincide, at all, with slide four on where the solar actually exits?

Thomas Fair:

Slide three has a gold band that sits atop the graph which represents just what the standard calls for. The actual amount of solar in our mix is more than is shown in the gold band. That is reflected on the chart on slide four.

Assemblywoman Kirkpatrick:

The bigger projects are harder to come on line and take a lot more time. Are we trying to work towards a specific corridor, or is it based on who does the request for proposal (RFP)? Do we have a master plan for creating some corridors?

Thomas Fair:

Solar developers, like wind developers, will gravitate towards locations where they can find suitable land with the resource, but they also will look for the ability to move the power through the transmission grid. During the initial part of their planning process, they will engage our people in doing transmission studies to determine if it is feasible to move the output from their site to the market.

Assemblywoman Kirkpatrick:

My concern is that we keep plotting all these things across the state, but we really do not work towards a long-term goal of creating corridors so that transmission naturally comes. Are there other opportunities with the wind studies that will let us focus on those specific areas?

Thomas Fair:

For several years our company and others have been identifying real energy zones and the transmission it would take to link them. We have been doing long-range studies and planning studies. In fact, ON Line is one of the outcomes of that effort. We identified that project as a priority to facilitate renewables development throughout the state. There are other projects on a smaller scale that are needed to tie resources into our grid and make it all work. These renewable zones are not uniform throughout the state, so it gives us some idea where transmission would be located to service projects in the future.

Assemblywoman Kirkpatrick:

It seems that Boulder City, once they created the energy corridor, has been able to expedite the process. It seems that on the state level we should be expediting corridors. I want to make sure that we all have that goal and are not just siting things willy-nilly because someone is ready to build.

Chair Atkinson:

Are there any further questions?

Assemblyman Ellison:

Geothermal seems to be coming into line where it is more cost effective. Where are we regarding solar and wind technology compared to some of these other things? Is it coming close to where it is financially feasible to build some of these plants?

Thomas Fair:

You are asking if wind and solar projects are financially feasible relative to geothermal. Geothermal has been our lowest-cost renewable resource. I envision it continuing to be our lowest-cost renewable resource. But, to meet the standard, we have to tap more resources. We cannot be dependent solely on geothermal energy. We have added solar resources, as you have seen in the presentation, and we are adding some wind resources. Wind resources seem to be in the same ballpark as geothermal resources from a cost standpoint. Solar resources are more expensive. But solar has some advantages relative to the others, in terms of location flexibility and a southern Nevada location where you have a lot of load. We have been adding quite a bit of solar in that area.

Assemblyman Goedhart:

Just to underscore what Mr. Fair said, we have been working with Valley Electric Association for more than ten years to get a right-of-way for our new power line connecting Pahrump to U.S. Highway 95 and Indian Springs. We have had to work with multiple federal agencies. The Air Force had problems with the height of the poles, and Las Vegas Paiute reservation land needed to be crossed. It took a very long time to get where we are finally putting the poles in the ground.

Chair Atkinson:

Are there any other questions or statements?

Assemblywoman Carlton:

Under your RPS outlook, the brownish component, the energy efficiency credits—could you review that for us?

Thomas Fair:

I will do that as an overview and Mr. Owens can chime in also. He is the director of that part of our company. The renewable portfolio standard includes what we call "white tags" as well as "green tags." Those are the conservation and efficiency credits. We have been building that program through Mr. Owens' organization for a number of years, and it has paid off for us. I think it is a very farsighted element of our RPS.

**John Owens, Director, Customer Renewable Generation and Energy Efficiency,
NV Energy:**

The energy efficiency component is very significant. It can make up to 25 percent of the annual requirement. The other feature that is really helpful in the current law is that we are able to bank surplus credits on the energy efficiency side and use them in future years. It is a very cost-effective way of

complying with the requirement. Essentially, we document, measure, and verify the energy efficiency savings that our programs produce, and some additional credit is given for those programs that occur at peak times or reduce consumption during peak hours. It is a very material piece of the picture. I believe that last year we added about 450 million portfolio energy credits (PEC) to the bank account towards compliance.

Assemblywoman Carlton:

What are PECs?

John Owens:

A PEC is a portfolio energy credit.

Assemblyman Segerblom:

All the projects you talked about are here in Nevada. I know there is one between Las Vegas and Kingman, Arizona. Do you get credits for that, or is that outside your purview?

Thomas Fair:

That is not part of our portfolio at this point.

Assemblyman Segerblom:

Does the law require that the projects you get credit for are in this state?

Thomas Fair:

No, projects can be included if they can transmit the energy into our grid.

Assemblywoman Kirkpatrick:

What happens with all those credits that you keep rolling over? Where do they come back to the Nevada ratepayers?

John Owens:

Each year we will apply at least 25 percent of the requirement, so we will draw down that bank account. To the extent there is a surplus, we will keep carrying that forward. As the requirements grow, we will keep drawing that down because this requirement goes out to 2025 and beyond. My expectation is, over time, the mix will probably change. By mix I mean how much is coming from energy efficiency programs versus how much is coming from renewable resources. I believe over the longer term, as energy efficiency standards increase, it will become harder and harder to cost-effectively create renewable energy credits or credits that count from the energy efficiency side. Today, energy efficiency is the most cost-effective way to comply. Over time it will

get more expensive, because as the efficiency standards change, the cost of those credits change.

Assemblywoman Kirkpatrick:

I would like to know how it works.

John Owens:

A simple example would be . . .

Assemblywoman Kirkpatrick:

You can tell me later. Thank you.

Chair Atkinson:

Ms. Stockey, do you have more?

Judy Stockey:

I would like to have Mr. Owens have an opportunity to very quickly go over his presentation.

John Owens:

I would like to present a quick overview of the Renewable Generations programs, how they are structured, and what their current state is. [He began a PowerPoint presentation ([Exhibit D](#)).]

Starting on the second slide, these rebates are available to specific customer groups, including residential, small commercial, school, and public entities. Public entities would include nonprofits, churches, and those types of entities such as city, state, and county governments. Small commercial is defined as entities that employ less than 500 employees worldwide. So a small commercial company would not be, for example, a Wal-Mart or an entity that is part of a large chain.

The essential structure is, the customers who apply for and are awarded rebates receive a one-time lump-sum payment. It is expressed in dollars per watt and is established in the annual plan that we file with the PUCN. For an example, a school project today that built a 100-kilowatt system, which is 100,000 watts, would receive \$500,000 because the current rebate amount is \$5 per watt.

The output of all of these systems helps our renewable portfolio standard compliance requirements. They all count. With respect to the solar component, there is an element called a "multiplier," where you measure the kilowatt-hours and multiply that number by 2.45. I believe there is another factor that deals

with losses, but essentially you get about 2.5 to 1 credited against the RPS in terms of the energy the system produces.

The funding source for these rebates is retail customers. All retail customers contribute a small kilowatt-hour charge to fund the rebate programs.

Some of the key statutes that govern our Renewable Generations program define what customer types are eligible. Again, not all customers are eligible to apply for and receive these rebates. For example, large commercial customers would not be eligible to participate. Funding limits are shown on the third slide. The funding limits are also defined in statute; currently there is a limit of a little over \$78 million for the period from July 1, 2010, through June 30, 2013. We went to the PUCN last year for a clarification of that limit, and it was clarified that it applies to each operating utility, both Sierra Pacific Power in northern Nevada as well as Nevada Power Company in southern Nevada. There is also a definition over the longer term that specifies a limit of \$255 million.

There is an amount of capacity defined that is available to award according to customer type. There are also sections that address the role of the Public Utility Commission in the oversight of the program.

Over 900 projects have been completed since 2004, when these programs became available. There are currently 9 megawatts, or 9,000 kilowatts, of customer-owned generation in service today. We have awarded over \$31 million in rebates through the end of last year. Nearly \$22 million of that amount was awarded during 2010. We have seen a huge uptick in activity in this program.

About 35 megawatts have been awarded and are in progress; about 5 megawatts were completed last year. That means there are another 30 megawatts ready to come on line. There is a potential for up to \$150 million in rebates over the next several years.

I have given you an overview of the history of the capacity as it has occurred. From 2011 forward, it is a projection. On the sixth slide, regarding Solar Generations installed and projected, I would like to call your attention to the asterisk next to "Cumulative Total 65,190 kilowatts (kW)." That projection is totally dependent on two things: the funding that is available and the fact that the incentive amounts paid to customers will have a direct effect on how much interest people have in the programs.

You can see from the chart that the activity level has risen. In 2010 we had our best year ever. In 2011 we project another even better year, based on the terrific interest we experienced last year. Beyond that, in 2012 the graph line is deliberately flat. The activity level is anyone's guess; it just depends on how much funding is thrown at it and where you set the rebate goals.

Moving on to wind, the basic structure is similar to solar. This program is available to agricultural customers as well as the entities covered by solar. Recently, we have seen a huge uptick in interest in that sector. About 11 megawatts of interest has been awarded, almost all in the agricultural sector in northern Nevada.

As far as funding, the PUCN sets the budget based on their review of the annual plan that we file. This is a pilot program that was set up with a goal of getting 5 megawatts installed by 2012. It expires on June 30, 2011, unless the Legislature extends the pilot program.

On the seventh slide, you can see an overview of the Wind Generations program. It was started in the last few years, so there is little capacity generated today, but recently it has attracted a huge amount of interest. Currently 11 megawatts are in the pipeline, again most of it in northern Nevada.

Moving on to Hydro Generations programs, we also offer rebates for small-scale hydro projects. This is a niche program that targets agricultural customers. The funding level is set by the PUCN, and it too is a pilot program that will expire on June 30 of this year unless the Legislature extends it. The next-to-last slide shows hydro results and projections.

Finally, there is also a hot water program that the Legislature authorized last session in Senate Bill No. 188 of the 75th Session. Basically, it is available to electric and natural gas residential customers. These are basically hot water heating systems for residential customers displacing either natural gas or electric hot water heating loads. The funding level is set at the PUCN. This is a pilot program with the goal of replacing at least 3,000 natural-gas-fired hot water heaters. That is the statewide goal. NV Energy has an allocation of a little less than 600 of those, and Southwest Gas has about 2,400 as their goal.

We also have 925 electric solar thermal installations, but again, it is not the system, but rather what it is replacing, which, in this case, is an electric hot water heater.

Chair Atkinson:

Are there any questions?

Assemblyman Goedhart:

With the photovoltaic you offer a rebate of \$5 per kilowatt-hour towards the cost of the system. What is your reimbursement for wind energy?

John Owens:

Just as a clarification, the rebates expressed are not per kilowatt-hour. They are dollars per watt. The \$5 per watt example would apply to the customers that fit in either the public or the school categories. There is a different incentive level for residential customers. That is currently set at \$2.30 per watt. It is lower because the public entities do not receive federal income tax rebates, whereas private customers do receive those incentives. On the wind side, the structure is the same. The rebates vary by category, but they are generally in the neighborhood of \$3 or \$4 per watt. Agricultural is, I believe, \$3, and the schools are \$4. I may need to check that.

Chair Atkinson:

Are there any other questions from the Committee? I see none.

Rose McKinney-James:

I would like to thank the people from NV Energy. We do not always agree, but there is rarely a time that they do not respond when called. I would like to invite to the witness table representatives from the Solar Alliance, Mr. Chris Brooks from Bombard Electric, and Leslie Bar-Ness from Solyndra, Inc.

Leslie Bar-Ness, Government Relations Manager, Solyndra, Inc., Fremont, California:

I am here today in my capacity as the lead for the Solar Alliance. The Solar Alliance is a group of about 40 solar companies that manufacture, like my company, or offer financing or installation along with the full array of the solar business. We work with legislators, regulators, and utilities to advocate for and discuss policies that will increase the solar footprint.

Claudia Eyzaguirre, The Solar Initiative, San Francisco, California:

The Solar Initiative is a nonprofit organization. We work on policy, do analytics, and have a grassroots base. Our mission is to bring solar into the mainstream. We are happy to provide analysis of both the benefits and costs of solar programs as they are considered by state legislatures and policymakers. We are very familiar and work closely with the solar industry, but, as we are not the

solar industry, we also can recognize the value of solar and the ratepayers' interest in supporting solar programs.

I understand that some of you are very familiar with and the solar industry. It is a complicated and new field, and we all are learning quickly as these industries grow and become part of our energy profile. I also understand that some of the members of this Committee are new to renewable energy and to solar in particular. We have taken care today to be sure our presentation addresses both new and returning members of the Committee. We would be happy to go into further detail with anyone if they are so interested.

Someone has brought in an example of a solar panel [observed during the meeting, but not left as an exhibit]. Some of the great things about polycrystalline solar panels are that they are solid-state technology, there are no moving parts, they perform all of the time, and they are warranted for 20 years.

My other colleagues are going to talk about customer options and the cost of solar. [Showed PowerPoint presentation ([Exhibit E.](#))] Solar energy has been driven, to this point, by well-crafted policies in the State of Nevada. The people from NV Energy went into a lot of detail on the renewable portfolio standard, so you are now all experts on how that works.

We also have heard about the Solar Generations program, which provides upfront cash to residents, schools, and public buildings to allow people to buy down the cost of solar. There is another policy that is very important to the work we do, and that is net metering. Net metering is a little complicated. It is a billing arrangement. The sun shines during the day when your solar energy system is producing most of the energy. If you are a retail store, you are using it right then. If you are a retail store that is closed on Sundays, you would want to store the power your solar energy system makes on sunny Sundays. Net metering allows you to bank those solar energy hours on the grid. Your next-door neighbor can use that power on the grid, and you will get credit for those hours that you generated but did not use. Most of the energy that these systems are generating is used at the time the sun is out. One percent of all customers, by state law, are allowed to net meter, and individual projects are capped.

What has driven large-scale solar projects are tax policies, in particular a 50 percent property tax abatement and reduction in sales tax for systems over 10 megawatts in size. This would be for large solar farms.

We would like to talk about the types of solar technology. Distributed generation refers to projects that meet the energy needs of the building or home, which in utility speak would be onsite load. Distributive generation on rooftop solar occurs on homes. Shown on this slide are great examples, courtesy of Hamilton Solar, of 10-kilowatt and 4-kilowatt systems that allow these Reno homeowners to generate their own power. We also see a lot of commercial rooftops generating solar, and there is a picture showing the Capitol Building. The next slide shows another example of a flat roof on a commercial building. The panels are tilted to receive as much sunlight as possible. This is the Vegas PBS Educational Technology Campus. It is 182 kilowatts.

The next slide shows panels mounted on the ground right near the building. This is an animal shelter in Las Vegas, and it is 36 kilowatts. We can also have distributive generation projects on private parking shade structures, which have a double function of providing energy and shade to the employees who park there.

You saw pictures of Nellis Air Force Base in the last presentation. I want to point out that Nellis is a very large project, 14.2 megawatts, that is, 1,420 kilowatts. But, it is still considered distributive generation because it is meeting the energy needs of Nellis Air Force Base. They are using that energy primarily onsite.

The next slide shows large-scale solar applications. Large-scale differs from distributive generation solar because these projects produce wholesale electricity that is sold to the utility, and the utility in turn resells it to retail customers. It is a very different relationship than a private residence, business, or public entity using that power on site where there is no resale.

The last slide showed a parabolic-trough technology that concentrates sun through lenses onto a fluid and drives a turbine. The next slide shows an example of a power tower. These are mirrors that concentrate the sun onto a steam engine that is in the center. They can also use a type of photovoltaic technology that concentrates the sun on it and uses mirrors to add more sunlight per square inch of photovoltaic.

The next slide shows the El Dorado, which has utility-scale thin film photovoltaic. This is not on a glass panel but is spread on a thinner level on either a glass or flexible structure, and it allows you to use less polycrystalline silicon in the solar application, so the cost can be lower. The interesting thing about thin film is that because it uses less photovoltaic material, it requires more space.

All of these different large-scale technologies for the wholesale market depend on what best suits the site application.

Nevada has a world-class solar resource. We have the potential to grow a really large solar industry here in Nevada compared to a country like Germany; they have 10 gigawatts—that would be 10,000 megawatts of solar—in a very small country that has the same solar resource as Alaska. Here, we have phenomenal solar resources. We also see in the United States the second-largest solar market, which is New Jersey, a state that you do not think of for its sun.

Annie Carmichael, Government Affairs Manager, Interior West, SunEdison, Denver, Colorado:

SunEdison is a global solar service provider. We build, own, and operate commercial and utilities solar energy systems. Currently, we have about 250 megawatts of solar in operation. This makes us one of the largest and most experienced solar developers in the world. Our parent company is MEMC, which is a manufacturer of silicon wafers. That is the product that you see inside solar panels. We manufacture in Missouri and Texas.

I would like to talk to you today about the price of solar. There is a lot of misconception about how expensive solar is and where the technology is today. [Continued with PowerPoint from previous presentation ([Exhibit E](#)).] Over the last couple of decades, solar has often been dismissed as too costly, but the truth is that the cost of solar is continuing to decline, whereas the cost of many traditional fuels continues to rise. When we talk about the price of solar, we talk about the total installed cost. As you can see on the slide, solar is half of the price it was.

What is interesting about modules or solar panels is that between 2008 and today, the price of solar modules has fallen by over 50 percent.

The next slide is a chart from Solarbuzz, slide 17, that captures manufacturers' data from around the globe. In February 2011 we see that the lowest retail price for solar panels is about \$1.85. Back in 2008 we were lucky if we found panels for about \$3.50. That is a dramatic decrease.

The other half of the installation expense includes labor costs and permitting. Chris Brooks of Bombard Renewable Energy will be talking about that later. Those costs are also coming down.

In Nevada, solar systems are being installed now or will be in the next year, for about \$3.85 to \$5.50 per watt. You may be wondering what this means and

how that compares with other sources of electricity. Most people, when they think about power, think on a per-kilowatt-hour basis. We, in the industry, like to talk about the levelized cost of energy. This next slide lets you look at the price of solar versus the cost of other renewables or other traditional sources of power, such as coal, natural gas, or nuclear. This is a "life cycle" cost, which takes into account not only the installed cost of a solar energy system or how much it costs to build a generating facility, but also costs like insurance of the plant, transmission to the plant, or operation and maintenance over the plant's lifetime. This data on levelized energy costs was released by Lazard Capital in June of 2010. Solar in the United States ranges from about 9 to 19 cents per kilowatt-hour. That is quite a range, but that is because there are different types of technology and because the price varies according to the statewide market.

The main point is that the cost of solar has come down dramatically in the last few years and will continue to decrease.

The second part of this presentation describes how customers go solar today. There are two options. The first is buying a system outright. This is a great option if you have some cash sitting around or you can take out an equity line of credit on your home or business. But that is not an option for a lot of people these days.

The second option, which is becoming more common in the United States and is the option that my company, SunEdison, provides, is the solar service model. This is where a customer pays little or no money up-front and instead enters into a contract with the company for a fixed length of time, such as 10 to 20 years, and the company gets paid per kilowatt-hour, depending on how much energy the solar energy system produces. That fixed cost is at or below what they were already paying for electricity. So, essentially, there is no money down, and you see immediate energy savings. That type of financing is becoming more and more common.

The next slide is from the State of California, and it shows that between 2008 and 2010 the number of residential customers who went solar using a financial services model increased dramatically. If you look at data from other states, it is the same. It is becoming a larger and larger percentage of the market. The next slide shows the different players involved in the solar services model.

Chris Brooks, Director, Bombard Renewable Energy:

I want to talk about the current state of solar in Nevada. We currently have 28 megawatts of solar photovoltaic installed that is not part of the rebate

program that John Owens spoke about earlier. The rebate program is concerned with distributive generation and includes projects such as Nellis Air Force Base, Southern Nevada Water Authority, and dozens of homes and business around the State of Nevada.

As of December, we have 9.73 megawatts of distributive generation solar installed in the state through the Renewable Generations program. Based on those two installed amounts of solar, companies like Bombard and dozens of others in the state have been able to provide thousands of jobs over the last five years by selling and installing these products and by providing the financial, legal, and development services that surround those products. Bombard has employed hundreds of people in the last five years based on the numbers you see on this slide.

Projects under development are shown on the next slide. These are real jobs. In Nevada, workers are making great living wages, they are working for Nevada contractors for the most part, and they are using Nevada vendors and legal consultants and developers. They are creating a tremendous number of jobs. I am a contractor, and we stay alive based on hiring and employing people.

Bombard has shown over 100 percent year-over-year growth during the last ten years, based on solar in the State of Nevada. It is mainly distributive generation solar, but includes working on plants such as the Acciona 64-megawatt plant and the Nellis project, which is all distributive generation but on a larger scale. I can imagine the same amount of growth in Bombard and in dozens of companies like it. We went from 2,500 people working in the State of Nevada, to 250 based on the overall decline in the construction market. The 250 that we do have are working only as a result of the renewable energy jobs in the State of Nevada.

Leslie Bar-Ness:

Jobs and economic development are very important parts of solar development. You just heard from one of your homegrown entrepreneurs who is really invested in the solar economy.

I would like to talk about a couple of fine points. Solar is part of a strong trend in renewable energy nationwide that is one of the bright spots in job growth across the country. Economic growth relies on cost-effective, efficient, and consistent energy. Solar energy fits that bill. As my colleagues have mentioned, Nevada is an optimum place for solar energy production because you have a lot of sun and a lot of well-trained construction people who can fill these jobs.

As Mr. Brooks mentioned, solar creates more jobs per megawatt than any other energy source, and those are jobs that are going to be right here in the state. The energy does not come in from someplace else. It is produced here and consumed here. Beside the electrician and the contractor, there are accountants, salespeople, merchandisers, et cetera. The next slide shows the breakdown of the jobs that are associated with each megawatt.

My company, Solyndra, is a manufacturer. We have shown you the kind of technology that is in our solar panels. We would love to have any of you visit our factory in California. Most of the jobs that we are discussing are separate from the manufacturing; those jobs relate to the installation and the financing. We would be happy to answer any questions.

Senator Schneider:

Mr. Brooks, I am familiar with your company. You have installed many panels and have done a good job. Do you buy any of those panels in Nevada?

Chris Brooks:

There currently are no photovoltaic panels being manufactured in Nevada. I have worked with a company, named Amonix, that just relocated its manufacturing facility to Nevada. I have done one project with them and hope to be doing many more. I will be visiting with them on Friday when I get home.

Senator Schneider:

Where were they previously located?

Chris Brooks:

They had manufacturing in Torrance, California, and they expanded into North Las Vegas.

Senator Schneider:

Do you know if they received a tax abatement?

Chris Brooks:

I believe they received a couple of different tax abatements to come here.

Senator Schneider:

My next question is for Ms. Carmichael. Your company is in Texas and Missouri. Have you ever considered Nevada?

Annie Carmichael:

Our parent company, MEMC, manufactures silicon wafers, not the actual panel. They are looking at expanding manufacturing in the United States. I am not sure if Nevada is on the short list. I could check on that for you.

Senator Schneider:

It always concerns me when we hear from outside companies that tell us how good we are, but they do not bring any jobs to Nevada. I just pulled up Missouri, and beside business registration taxes and city and county taxes, they have corporation franchise taxes, a corporate income tax, a partnership tax, and other taxes that we do not have here in Nevada. The corporation tax in Missouri is 6.25 percent for companies generating over \$350,000. I am wondering what it would take for us to get jobs in Nevada. Obviously, taxes are not very important, are they?

Annie Carmichael:

I would like to go back to what Ms. Bar-Ness was mentioning regarding the jobs per megawatt of solar. We tend to say there are 15 to 30 jobs per megawatt. Most of those jobs are not manufacturing jobs. The truth is that manufacturing is very global, and most of the solar panels you see in the market are manufactured off the United States shores. Components of the panels, like the wafers, are manufactured in the United States. The bulk of the jobs from the solar industry are from installing and maintaining the panels. Those jobs are not outsourceable and are local. The jobs we are referring to are not manufacturing jobs.

Senator Schneider:

But still your plants are located in the United States.

Annie Carmichael:

Yes, that is correct.

Chair Atkinson:

Are there any further questions?

Assemblyman Ellison:

I am looking at one of your slides which shows salaries and solar careers. You know that the State of Nevada is looking at the license agreements and

installers that are not qualified. This is a growing trend. The roofers were installing these panels, and the State Contractors Board thought they should be required to have a new license. Would you like to elaborate on that?

Chris Brooks:

While the technology is new, it falls well within fairly defined building trades. As a businessman who makes the appropriate selections of subcontractors and workmen based on the tasks they have ahead of them, I think that a new licensure is not necessary, but perhaps the existing licenses could be redefined. In my opinion, the electrical license that currently exists is appropriate for the electrical work that takes place. The structural steel license that currently exists is appropriate for the special steel that takes place. While solar is a new technology, I do not think we need to reinvent the wheel. We are working with each other within different segments of building trades to figure out who can best do what safely. Safety is one of the main issues that we stress. Safety is important not only from a worker's standpoint; it is also a risk management issue from a contractor's standpoint.

Assemblywoman Bustamante Adams:

You mentioned the cost of solar energy going down, but what would be the average cost to homeowners after rebates and credits have been applied?

Chris Brooks:

Specific to the Nevada market, the average cost to a homeowner is roughly \$7 per watt. Keep in mind that when we say \$7 per watt, or \$7,000 per kilowatt, we are talking about the capacity number. That is how many solar panels they have or how big of a system it is. There is a Renewable Generations rebate program available, administered by NV Energy, that would reduce that amount by \$2.30 per watt. The program is currently at its capacity and we would love to see that expanded.

Assemblywoman Bustamante Adams:

Could you give me a total dollar amount?

Chris Brooks:

Sure. The average system size that we are doing is approximately 7,000 watts, which is 7 kilowatts, which would put your cost at \$49,000 gross. Subtract from that $2.30 \times 7,000$ which would be \$16,100. That would leave your net cost at approximately \$30,000. Then you can apply the 30 percent investment tax credit, which would take your net down to \$21,000. That system would create approximately 14,000 kilowatt-hours per year, offsetting the average

Nevada resident at about \$.105 per kilowatt-hour, which would offset their bill about \$1,500 per year.

Assemblywoman Bustamante Adams:

Another question I have concerns the financing. Ms. Carmichael, you referred to other options instead of making a down payment. Does that apply here in Nevada?

Annie Carmichael:

At SunEdison we provide a power purchase agreement and work with commercial customers only. We do not operate here in Nevada at this time because there is no rebate for commercial customers. I know a lot of our competitors do not operate here yet but want to, especially if the market is expanded.

Chair Atkinson:

So, the answer is "No."

Assemblywoman Kirkpatrick:

Everyone talks about reliability. Are there any other states where solar is so reliable that customers are actually off the grid and can go all solar? The other taxpayers still have to subsidize this. Are other states doing it better than we are? Also, where is the consumer protection on some of these programs? What happens if the consumers do not get to pick the contractor they want based on price? I personally think that if you are going to go solar, then my neighbor should not have to pay for that.

Claudia Eyzaguirre:

New Jersey had over 105 megawatts of distributive generation installed by the end of 2010. There are very few off-the-grid projects. The reason is that off-the-grid projects require battery storage. I have a smart phone in my bag and I can skype to China, but it cannot stay on for two hours. Solar technology is reliable and warrantied, but the missing link in energy technology is battery storage. Battery storage is not very good right now. Batteries are expensive, they fail, and they do not store energy for very long. Until the battery storage component is fixed, being on the grid is the way it works.

Many other states, like Nevada, are making a tremendous investment in smart grids, and distributive generation projects offer voltage control potential to the state.

So, we do not see an off-the-grid market.

On your second question about consumer protections, there are a lot of different ways that is done. Some states keep registered lists of contractors; other states show their rebates. California uses a three-strike rule. If the contractors do not pass inspection three times, they are removed from the approved list. There are a lot of ways to address your question.

Assemblywoman Kirkpatrick:

I think it would be helpful for the Committee to know what other states are doing to protect the consumers. At the end of the day, if my neighbor is going to have to pay for me to get solar, I want to make sure that everyone is protected once it is put in.

Chair Atkinson:

Ms. McKinney-James?

Rose McKinney-James:

I thank the panel. We have two other speakers. One represents a mining company that built its own solar energy system, and the other will talk about wind.

Larry Morasse, General Manager, Western 102 Plant, Barrick Goldstrike Mines, Inc.:

[Gave a PowerPoint presentation ([Exhibit F](#)).] Barrick, in 2005, decided to build its own power plant. By stepping off the grid, under *Nevada Revised Statutes* (NRS) Chapter 704, Barrick is allowed to generate its own power for the Barrick Goldstrike Mine just north of Carlin, Nevada. At the same time, we are allowed to purchase power from the market, outside of NV Energy's supply. In doing so, we are subject to the renewable portfolio standard that is applicable in the state at the time of exiting the utility service. We have, essentially, the same requirement as NV Energy, although we are a much smaller player in looking for renewable energy and renewable energy projects.

I will focus on solar. In order to comply, we decided to build our own one-megawatt solar system. That is behind the meter; in other words, the solar power that we generate is consumed within the power plant. It also generates renewable energy credits. We talked about the portfolio energy credits (PEC). In building the plant and generating the power, we are able to meet our solar compliance.

I need to mention that if you drive by, you will not see one panel out there right at the moment. Last year a snowfall damaged the drive mechanisms. When we purchased the system we thought we had state-of-the-art equipment, but

we found that the drive mechanisms were weak. We are completely redoing the installation. One benefit is that we are employing about 25 local tradesmen in rebuilding the system. It should be up and running again in April.

I am showing you an aerial view of the power plant and the solar field. You will see it goes from north to south. We now are changing the system to a fixed system, and the array will go east to west. That will maximize the solar gain.

We are looking at energy conservation where we can use up to 25 percent to meet our compliance. Being a mining company we have many opportunities to improve on our energy usage, and we are looking at other projects to help with our compliance in the future.

Tom Clark, representing Interwest Energy Alliance:

Interwest Energy Alliance represents a lot of renewable energy across the west. I was going to speak about wind, but we are over time and I will not put my PowerPoint up [presented ([Exhibit G](#))]. I would like an invitation at some time to come back and talk to you about wind. Mr. Fair did an excellent job explaining the environment here in Nevada, so I will not go over his testimony. I will conclude my remarks.

Chair Atkinson:

Are there any further questions?

Assemblyman Ellison:

Everyone has brought forward the fact of permitting. We have looked at ways to put people to work in the State of Nevada, it so important that we send a message back to the federal agencies on these permitting processes where it takes years and years to get a permit. I know it will not do a lot of good, but we did produce a resolution this year asking Washington to streamline the system for permitting, not only for gold mines but for alternate energy. We will do whatever we can to put people to work.

Chair Atkinson:

Are there any questions or comments from the Committee? I see none.

Rose McKinney-James:

Once again, thank you for letting us make this presentation. I would like to acknowledge that Rich Hamilton is here with Great Basin Wind, and Chad Dickason with Hamilton Solar was kind enough to bring the solar panel. Hamilton Solar has an apprenticeship program.

Chair Atkinson:

Thank you for putting this presentation together for the Committee. It was very informative.

Rose McKinney-James:

I would like to state that my colleague, Alfredo Alonso, who represents a large-scale solar association, is also in the audience today.

Chair Atkinson:

Is there anyone in the audience who wishes to be heard?

Ellen Allman, Senior Business Manager, Terra-Gen Power, LLC:

I would like to say on behalf of the Nevada Geothermal Council, next Thursday there will be a Geothermal Day. We will be offering lunch, and it would be great if any of you can stop by and talk to geothermal folks.

Chair Atkinson:

Is there anyone else in the audience wishing to be heard? I see none. We are adjourned. [Meeting was adjourned at 2:49 p.m.]

RESPECTFULLY SUBMITTED:

Patricia Blackburn
Committee Secretary

APPROVED BY:

Assemblyman Kelvin Atkinson, Chair

DATE: _____

Senator Michael A. Schneider, Chair

DATE: _____

EXHIBITS

Committee Name: Assembly Committee on Commerce and Labor/Senate Committee on Commerce, Labor and Energy

Date: February 9, 2011

Time of Meeting: 1:01 p.m.

Bill	Exhibit	Witness / Agency	Description
	A		Agenda
	B		Attendance Roster
	C	Thomas Fair, NVEnergy	PowerPoint presentation
	D	John Owens, NV Energy	PowerPoint presentation
	E	Annie Carmichael, SunEdison	PowerPoint presentation
	F	Larry Morasse, Barrick Goldstrike Mines, Inc.	PowerPoint presentation
	G	Tom Clark, representing Interwest Energy Alliance	PowerPoint presentation