MINUTES OF THE
SENATE COMMITTEE ON ENERGY, INFRASTRUCTURE AND TRANSPORTATION

Seventy-fifth Session
March 6, 2009

The Senate Committee on Energy, Infrastructure and Transportation was called to order by Chair Michael A. Schneider at 8:12 a.m. on Friday, March 6, 2009, in Room 2135 of the Legislative Building, Carson City, Nevada. The meeting was videoconferenced to the Grant Sawyer State Office Building, Room 4412E, 555 East Washington Avenue, Las Vegas, Nevada. Exhibit A is the Agenda. Exhibit B is the Attendance Roster. All exhibits are available and on file in the Research Library of the Legislative Counsel Bureau.

COMMITTEE MEMBERS PRESENT:

Senator Michael A. Schneider, Chair
Senator Maggie Carlton, Vice Chair
Senator John J. Lee
Senator Shirley A. Breeden
Senator Randolph Townsend
Senator Barbara K. Cegavske
Senator Dennis Nolan

STAFF MEMBERS PRESENT:

Matt Nichols, Committee Counsel
Scott Young, Committee Policy Analyst
Sandra Hudgens, Committee Secretary

OTHERS PRESENT:

Steve Wiel, Ph.D., Nevada Representative, Southwest Energy Efficiency Project
Jo Ann P. Kelly, Chair, Public Utilities Commission of Nevada
Kyle Davis, Policy Director, Nevada Conservation League
Charles M. Benjamin, Ph.D., J.D., Director, Nevada Office, Western Resource Advocates; Nevadans for Clean Affordable Reliable Energy
Judy Stokey, NV Energy
John Owens, Director, Resource Planning and Analysis, NV Energy
Daniel N. Schochet, Executive Vice President, Ram Power, Inc.; Chairman, Renewable Energy Transmission Access Advisory Committee

Hatice Gecol, Ph.D., Director, Office of Energy
Mario Villar, Executive Transmission, NV Energy
Paul Maguire, Public Utilities Commission of Nevada
Kirby Lampley, Director of Regulatory Operations, Public Utilities Commission of Nevada

CHAIR SCHNEIDER:
There is a statement from the Public Utilities Commission of Nevada (PUCN) announcing cancellation of the hearings on the White Pine Energy Station in the green folder (Exhibit C). The White Pine Energy Associates have withdrawn their application to build the 1,600-megawatt coal-fired electrical-generating plant for now. I will open the hearing on Senate Bill (S.B.) 165 concerning global warming and air-quality issues which are by-products of energy production. This bill was encouraged by Southwest Energy Efficiency Project (SWEEP). Last week, U.S. President Barack Obama released his 2010 budget. In a news article, Exhibit C, the President proposes to support clean energy development with a 10-year investment of $15 billion a year funded by the sale of greenhouse emission credits. The Obama administration intends to reduce United States emissions 14 percent below 2005 levels by 2020 and 83 percent by 2050. In another article Exhibit C, U.S. Senator Harry Reid has promised comprehensive energy legislation including cap-and-trade laws to be voted upon in August. This makes S.B. 165 timely. You will find an 80-page report *Reading the Tea Leaves: How Utilities in the West Are Managing Carbon Regulatory Risk in their Resource Plans* (Exhibit D). The report was produced by staff at the Ernest Orlando Lawrence Berkeley National Laboratory in March 2008. The report explains the reasons for requesting S.B. 165. The report can be downloaded at <http://eetd.lbl.gov/ea/EMS/EMS_pubs.html>.

SENATE BILL 165: Requires certain utilities that supply electricity in this State to include in the resource plan of the utility certain provisions relating to any future regulation of carbon emissions. (BDR 58-381)

SENATOR TOWNSEND:
We would like to read these reports the night before the hearing.

STEVE WIEL, Ph.D. (Nevada Representative, Southwest Energy Efficiency Project):

The SWEEP requested S.B. 165 to ensure Nevada's regulated utility companies use the best information on climate change in their investment decisions. We do not believe that is happening. Every 3 years, utilities are required to prepare a 20-year resource plan that guides all their actions. The recovery for their investments is conditioned to approval from the PUCN. We are proposing how resource plans are prepared. The report, Exhibit D, contains climate change practices and resource plans for 15 utilities. The analysis of 13 or 14 companies considered from $4 to $60 per ton of carbon dioxide in their alternative scenarios. They used up to $20 per ton in base cases. Sierra Pacific and NV Power used up to $7 per ton in their alternative scenarios and used zero dollars in their base case. Only 4 utilities out of 15 used zero dollars in their base case. We think this is wrong. The base case should be the most likely scenario considering regulation of carbon is inevitable in the United States within 20 years or even within 2 years. It needs to be accounted for properly in the base case. Wording can be general and comprehensive on statutes to allow the regulatory body to provide details to the *Nevada Administrative Code* or to be specific in the regulations. We are delighted with S.B. 165. It is quite specific compared to other resource-planning requirements, but you may allow the Commission to add the specifics. I have submitted a copy of my comments (Exhibit E). I have enclosed the following wording:

> ... an analysis and comparison of a diverse set of alternative scenarios, including a low carbon intensity scenario, using a broad range of the future price of carbon emissions that would occur if carbon intensity were regulated by the Federal government or this State.

The SWEEP supports S.B. 165.

SENATOR TOWNSEND:

The original bill drafted in 1985 was broad enough for the PUCN to do long-term resource planning for Nevada. If statutes are too specific, chances are things are left out. I was concerned how things were estimated. Your language you provided focuses the Commission on the federal government's plans. We prefer the federal government does something soon to enable us to enact our guidelines for the utilities to amend their plans according to the new rules. Your quote in Exhibit E will accomplish your goal. My concern is line 19, on page 2 of the bill that says "A reasonable estimate of the most likely price ... ."

That language is problematic as opposed to your quote in Exhibit E, which is an analysis, not a projection. I always have concerns about reasonable estimates. There is good language in the revised statement in Exhibit E for lines 21 through 24 of the bill. Paragraph (d) of subsection 3, section 1 is also good language. Paragraph (e), subsection 3, section 1, begins "An analysis of the indirect effects ... ." Do we know what an indirect effect is of a future regulation? I assume it is written to give flexibility to the Commission from the federal government's regulations. Is the analysis of indirect effect what the Commission decides it should be? Section 1, subsection 3, paragraph (e), subparagraph (1) is specific and easy to do. Subparagraph (2) gives flexibility by using the term, "...various technologies for the generation of low carbon intensity ... ." Subparagraphs (3) through (6) are fundamental. On page 3, subparagraph (7) is important; old coal-fired facilities are retired. The definitions are good. I would like Dr. Weil to answer my questions.

CHAIR SCHNEIDER:
Is the base case more critical to the process than the alternative?

MR. WIEL:
Everything SWEEP is proposing is intended to build on the 1985 draft because it is the appropriate way for utilities to be regulated. The utilities' resource-planning process includes the base case and the high and low scenario analysis. The utilities are including carbon in their analysis. If they are already calculating base case and high and low scenarios, they are already doing projections. They are projecting the prices of coal, natural gas and the cost of carbon. The base case has a gravitas that brings attention beyond what a sensitivity analysis would provide. If you have both analyses in the plan, why would you want to label the least likely outcome to be the base case? You would want the most expected outcome. How are they treated? What should statutes say about forecasts? Maybe it should say, "That is up to the Commission." I was surprised to see the language so specific about the indirect effects. I would be happy to see how indirect effects should be treated.

SENATOR TOWNSEND:
Is it fair to assume a decision by the federal government on a carbon-based tax, a tax on natural gas, would follow in a corresponding percentage because it is a commodity?

MR. WIEL:
The effect of regulating carbon will affect the price of anything that emits carbon.

SENATOR TOWNSEND:
Since the West and Southwest have renewable-energy credits and the Southeast has no market, as we move to a national Renewable Portfolio Standard (RPS), would conservation affect our RPS? Do you see the southeastern states having an advantage or disadvantage in a cap-and-trade system?

MR. WIEL:
When carbon becomes more intense, the disadvantage increases. The most significant change is the U.S. Environmental Protection Agency's (EPA) consideration of grandfathering of all power plants for new source performance standards. The implication of your question is correct; it is a factor.

JO ANN P. KELLY (Chair, Public Utilities Commission of Nevada):
The PUCN has no position on S.B. 165. We already have the authority in the statute to broadly account for various pollutants. Besides carbon emissions, we already account for nitrogen oxide, sulfur oxide and other emissions in original modeling before we look at the base cases and all the different scenarios. If the Legislature puts a specific imprint on carbon and future carbon legislation, it would be easily incorporated into the Integrated Resource Plan. The supply-side regulation has not been modified as frequently as the demand-side regulation over the last two decades. We are working our way through every section of the regulations. We intend to bring the specific rule-making language up to date for RPS and new issues.

SENATOR TOWNSEND:
Do you prefer to have a broader or a specific statement on legislation regarding carbon emissions?

Ms. KELLY:
In the past, the PUCN has worked with the more generic guidelines. In the 1980s, the new Public Utility Regulatory Policies Act of 1978 and cogeneration guidelines were still being followed. The more generic approach would give us more flexibility.

KYLE DAVIS (Policy Director, Nevada Conservation League):
One of the Nevada Conservation Leagues' (NCL) priorities for the State of Nevada is S.B. 165. The NCL is comprised of 18 conservation and environmental groups throughout the State of Nevada, including SWEEP, dealing with energy, water, wildlife and scenic vista issues. These groups came together last year to bring priorities to the Legislature to advance protection of Nevada's environment. This is one of four priority bills this Session. The arguments in favor of adopting this bill were well outlined by Dr. Weil. All the groups in NCL favor this bill. It will protect rate payers, encourage clean energy and protect us from greenhouse gases.

CHARLES M. BENJAMIN, Ph.D., J.D., (Director, Nevada Office, Western Resource Advocates; Nevadans for Clean Affordable Reliable Energy):
Some of the nine organizations in Nevadans for Clean Affordable Reliable Energy are SWEEP, NCL, Sierra Club, Wildlife Recovery Association (WRA), Nevada Real Property Association and others. We organized with the intent to intervene in integrated resource planning dockets. What you see in Exhibit E is a consumer issue because we know carbon dioxide (C02) regulations and greenhouse gas regulations are coming. We are not making this up. Leading scientists are telling us man-made effects of C02 are changing the planet's climate. We should be able to reverse this. This will have an impact on how we generate power. It is important for the utilities to account for this. This is happening all over the United States. The WRA operates in seven western states. We hope you pass S.B. 165 and the Governor signs it.

CHAIR SCHNEIDER:
Would your group prefer the generic or the specific version of this bill?

DR. BENJAMIN:
Sometimes you have to be specific. I like this bill. The Commission represents the people of this State. If the people want it, you should put it into legislation and give clear direction to everybody.

MR. DAVIS:
Whatever SWEEP wants, is fine with us.

JUDY STOKEY (NV Energy):
We do not think this bill is necessary at this time. The PUCN has this authority.

JOHN OWENS (Director, Resource Planning and Analysis, NV Energy):
As an engineer, I use certain terms I will explain. Expansion plan means resources a utility needs to add in the future. Resources are different types of generation. Scenario analysis is a comparison of how different expansion plans perform under different economic and regulatory conditions. Those conditions are called sensitivities. Where are we going in the future to meet our customers' needs? We run plans under a variety of scenarios with different sensitivities. Scenarios include low base, high and low forecasts, high fuel and purchase power forecasts. We run additional scenarios on sensitivity issues, like carbon taxes. NV Energy analyzes carbon emission scenarios.

The challenge with this bill is the uncertainty of the price of carbon emissions until legislation and regulations are finalized. The form federal legislation will take is uncertain and can have significant consequences on how you model the economic effects of carbon legislation. Will it be a cap-and-trade system? Will it be a straight tax on a certain amount of dollars per ton of C02? Will there be waivers or deferrals of these programs? It is difficult to forecast what is coming out of Congress. NV Energy and the Commission do respond to changing market conditions by modifying analysis and planned-resource actions. Uncertainty around carbon cost was why NV Energy delayed its proposed Ely energy-center coal plant. We are deferring that project until carbon sequestration technologies are commercially available by the end of the next decade. The Commission directs NV Energy to perform additional analysis and scenarios for a range of alternatives to study. We file a variety of expansion plans containing conventional and nonconventional resources.

The PUCN ordered us to produce an analysis to replace our Ely Energy Center Plant (EEC) with all renewable resources. We will provide a scenario that will replace our future needs with all renewable resources based on no fossil generation. Our utilities base case is built around our country's laws and regulations. We have a current zero-carbon cost in our base case because it is valuable information for regulators and public policy makers to compare the effects of different proposals for our customers. If the carbon tax is estimated before Congress has acted, a new variable is introduced into the analysis, and ability to use the comparison is lost. You need a zero-case base to be able to make comparisons to provide information to the Commission, the Legislature and the public on where we are today and the effect on carbon taxes at different levels. We do provide a range of low, mid and high-carbon trajectories for future legislation. The 2006 integrated resource-plan filing reflected

zero dollars in the base case and only seven dollars per ton. This year's filing for the southern NV Energy operation will include updated carbon figures based on current scenarios with larger figures. Updated numbers will be in our filed amendment with the PUCN on Monday with our One Nevada Transmission Line (On Line) project connecting our northern and southern systems.

We do take into account robust carbon scenarios provided to the Commission. We think there is value in preserving a reference case of zero to see the effect of different proposals. Once the legislation does pass, we would include it in our base case. The issue is the difficulty of getting where we want to be. That is our concern.

CHAIR SCHNEIDER:
Is your intent to continue what you are doing until the President and Congress tell you otherwise?

MR. OWENS:
No. Our intent is to provide our regulators with a record in order for them to make a decision about where we are going next. That record would contain how expansion plans perform under different conditions. Our regulators today have the ability and authority to look at carbon based on information we have provided and make a decision. It is a question of losing the value of providing you information on the possible effect on our customers of these different proposals during the federal legislative process.

CHAIR SCHNEIDER:
President Obama said he was going ahead with the cap-and-trade, and he has the support in both Houses. Would it be in your best interest to move in that direction?

MR. OWENS:
We will take into account the most likely outcome of that legislation when we develop our plan. We do analysis with complex sensitivities for the Commission, and we recommend what we should do to move forward with new resources. All parties having an interest participate and argue for the best course of action. We carry out the decision of the Commission.

SENATOR CARLTON:
Every time the Commission asks the utility to do something, it ends up on my bill. Am I correct? That was a yes. If we are going to ask you to do all these things, how much is it going to cost me?

MR. OWENS:
It depends on the process. The numbers could be very material. A megawatt-hour (MWh) of generation out of a highly efficient natural gas combined-cycle unit produces about half a ton of C02. If the tax were $100 per ton, you would pay 4 cents per kilowatt-hour (kWh) added to the price of electricity, if it is just a straight tax. It is complex under a cap-and-trade program when you are allocated a certain amount of credits based on previous emissions. You may not be paying the full amount. Some of those subtleties have huge consequences. What is the reference point for allocations? Is it what our emissions were at one time, what they were last year or what they will be in the future? It is very difficult to answer.

SENATOR CARLTON:
Is the bill asking you to build these particular elements into your case? Putting together a case takes time, energy and resources. How much effort will it take to comply with these requirements?

MR. OWENS:
We already provide some analysis this bill requires. It is not a huge change in incremental workload. Do the decision makers receive value having a reference reflecting the current state laws to predict where we are going in the future?

CHAIR SCHNEIDER:
Does this cost anything? Will it cost something when the federal government requires it?

MR. OWENS:
There would be some cost presenting this analysis. The current regulations are robust and require a lot of analytical work. It should not be more than five or ten percent over what we do today.

SENATOR TOWNSEND:
When is your next plan due?

MR. OWENS:
The plan for NV Energy is due July 1, 2009. The plan for Sierra Pacific is due July 1, 2010.

SENATOR TOWNSEND:
How long will it take you to amend your plan when you know what the federal government will do?

MR. OWENS:
It depends on the details of the legislation. We provide a broad range of carbon-sensitivity analysis. We can compare already-filed sensitivity runs to legislative requirements if legislation is filed after July 1, 2009, and show the outcome to the Commission. Amending the plan would depend on the details of the legislation.

SENATOR TOWNSEND:
You might want the PUCN to respond.

MS. KELLY:
If NV Energy receives federal legislation after July 1, 2009, data requests and information will be exchanged. Hearings would occur late October or November. We render our decision by December 2009, allowing time for information to getting into the record. There is a chance federal legislation could impact the resources selected or recommended in the July 1, 2009, plan, resulting in an amendment.

CHAIR SCHNEIDER:
I will close the hearing on S.B. 165. There is a connection between access to transmission and development of renewable energy in Nevada. The Clean Renewable Energy and Economic Development Act of 2009 was introduced yesterday by U.S. Senator Harry Reid according to a news article in Exhibit C.

DANIEL N. SCHOCHET (Executive Vice President, Ram Power, Inc.; Chairman, Renewable Energy Transmission Access Advisory Committee):
I have distributed my presentation (Exhibit F, original is on file at the Research Library). I have been a renewable-energy developer in Nevada since 1984. The barriers to renewable energy since 2007 are outlined in the presentation. The Governor has taken action in each area, and I was given the task of organizing the Renewable Energy Transmission Access Advisory Committee (RETAAC).

Nevada's renewable transmission issues are outlined on page 3 of the presentation. The Governor addressed these issues May 9, 2007. California and the Western Governors' Association followed a year later.

Phase I of RETAAC goals were identified and recommendations made with a series of maps included in this report. The first map is an overlay produced by the Division of Minerals, Commission on Mineral Resources and the Bureau of Mines and Geology defining resources and constraint areas. The Committee, in phase I, circled the renewable-energy zones. The second map shows the transmission routes available and new transmission routes recommended by us that would have feeder lines connecting existing transmissions. There are vast areas in the state with no transmission. The red, blue and green lines define the renewable energy zones.

The RETAAC phase II was formed as outlined in the presentation. We have managed to produce this work product without expense to the state through volunteers. In California, a paid consultant was hired. NV Energy was responsible for the renewable-energy development shown on page 16. The broken lines on the next map address environmental and land-use issues. Seven other states are looking at transmission-infrastructure authorities and bonding as shown on page 17. Wyoming has succeeded. Creating a credit support for the bonds and a revenue stream to repay the bonds is an issue. The chart on page 18 shows an analysis of renewable-energy transmission costs with tax-exempt bond financing produced by Dr. Yasuji Otsuka with PUCN. The far right column lists the cost on each transmission line acceptable as the cost per MW for access or transmission over the feeder lines required to access the renewable-energy zones. This report shows a feasible level of economics justifying construction of these new transmissions. More information is available at <http://gov.state.nv.us/GibbonsEnergy/>. Further information on this subject, go to <http://sites.google.com/site/retaac/>.

CHAIR SCHNEIDER:
I will read from section 402 of The Clean Renewable Energy and Economic Development Act of 2009 introduced by U.S. Senator Harry Reid found in Exhibit C.

> Renewable Energy Zones: This bill directs the President to designate renewable energy zones, ... Some areas, especially the Western U.S., already have processes in place to identify renewable energy zones. Recognizing the ongoing efforts in the

> Western U.S., this bill allows the President to use zones designated through existing processes, and sets deadlines on designating renewable energy zones for the Western Interconnection of 90 days after enactment of the bill ... .

Is there anything in your renewable-energy zone studies to fit into the Senator's bill?

MR. SCHOCHET:
Yes, we fit into the bill. We have almost completed the definition and determination of the renewable-energy zones in Nevada. The Western Governors' Association has been looking at renewable-energy zones across the western states. There is a tendency to inflate the amount of renewable energy available in other states, mostly in the wind-prone states. We meet the criteria. The credit support of the funding, provided by the bill, should assist in the construction of the transmission lines.

SENATOR TOWNSEND:
Do we meet the 90-day standard in U.S. Senator Harry Reid's bill? Are we ready to go?

MR. SCHOCHET:
I think so. The report that our committee will produce is due in a draft by the end of May and a final report by the end of June.

SENATOR TOWNSEND:
Did your group look at costs for additional transmission?

MR. SCHOCHET:
I do not have the figures with me. I would guess one-half cent per kWh. If you transmit through the service territory of another utility, you pay a "postage stamp" transmission rate of a half-cent per kWh. Nevada is fortunate to connect to a statewide utility. Renewable developers interconnecting to NV Energy have no transmission charge. It should not affect the price of renewable energy.

HATICE GECOL, Ph.D. (Director, Office of Energy):
The report of RETAAC is due the week of May 11, 2009. The RETAAC is looking at a superhighway type of transmission connection between the states.

They evaluated the feeder lines and the collector lines connecting our renewable-energy zones to the main grid. They complement each other. These efforts will help U.S. Senator Harry Reid's bill.

CHAIR SCHNEIDER:
NV Energy is working several transmission projects. We have asked them how they will impact the renewables development in Nevada.

MARIO VILLAR (Executive Transmission, NV Energy):
Our presentation shows our efforts on transmission for renewables (Exhibit G, original is on file at the Research Library). A generator boils water, in a sophisticated way, converting it to steam that turns a generator converting it to electricity. In a combined-cycle plant, 17,000 volts come out of a generator. It is transformed to a more efficient distribution output. At the Tracy Power Plant, the voltage gets converted from 17,500 volts to 345,000 volts. It then goes to a distribution station where the voltage is stepped down to a range of 13,000 to 25,000. Then it is distributed to residential areas with voltage between 240 to120.

SENATOR CEGAVSKE:
The pictures you show on your presentation clarify the renewable-energy and transmission lines Exhibit G.

MR. VILLAR:
Electric transmission distributes electricity to the consumer via the diagram in the presentation. High voltage levels are more efficient and minimize losses. With numerous relays, the loss of one component does not take out the system. The highest voltage level NV Energy has in northern Nevada is 345,000 volts. In southern Nevada, NV Energy has 500,000 volts. The Western Electricity Coordinating Council (WECC) transmission map is on page 4. In the United States, there are three basic systems of interconnections. All the utilities, transmission lines and generators west of the Rocky Mountains are tied together under the WECC and operate as a large machine. When there is a generator loss, all of the generators in the West react instantaneously. There is an eastern interconnection and Texas stands alone. There are a number of lines on the map coming from the southern Nevada area going into California from Lake Mead. A number of states are trying to access that energy.

There are reliability rules associated with the operation of the system. We must comply with rules set by the North American Electric Reliability Corporation and by the WECC. It governs how we operate the system. Page 5 lists the benefits of transmission. How transmission is built is on page 6. A "wheeling" request is when someone requests transmission through our system to reach someone else's load. The heading, "How complicated is permitting a new line?" is found on page 7. San Diego Gas and Electric recently spent $100 million to have a transmission line approved from the Imperial Valley in California into the San Diego area. The following map shows the different agencies involved by color. The green depicts Bureau of Land Management (BLM) land, covering most of the State of Nevada. Transmission development taking place in this State will be governed by and permitted by BLM.

Who builds the most transmissions in Nevada? We have built $600 million to $800 million worth of transmission in various projects. The biggest project was the Centennial Project in the southern part of Nevada. Transmission funding and regulatory issues are on page 10. When a transmission line is built for reliability, we go to the integrated resource-planning process presented to the PUCN. The Commission processes the value and need for the facility and approves it for rates. When there is a match between generation and load, then one company can sell to another company. An example is Wyoming selling wind-generation energy transmission to California. Transmission capital investments are risky when a contract is breached by a developer, which has happened. The normal integration includes going to the Commission in traditional rate-making processes. Open-access transmission tariff terms, through the Federal Energy Regulatory Commission, dictate rates we can charge, who we have to interconnect with and what costs need to be paid by the developers or customers. The process with the PUCN works well.

The next phase of this presentation is the ON Line. This proposal will connect Ely to southern Nevada for the first time. Details of the ON Line transmission project are on page 13. Because of the geothermal resources in northern Nevada, it would now be available to southern Nevada with ON Line. At the same time, solar resources in southern Nevada would be available to northern Nevada. Northern Nevada and southern Nevada sharing the exchange creates an efficient and cost-effective system. We will make a filing on Monday to seek approval with the Commission on the expedited project. The next map shows our transmission system with the ON Line project on the right-hand side. We are tied to the Alturas line with the Bonneville Power Administration line in

California on the upper left-hand side of the map. We have ties to Idaho Power, in the upper right-hand corner, with restrictions on how much we can bring in. We are tied to PacifiCorp on the right of the ON Line project. In the Las Vegas area, we have an interconnection to the Western Area Power Administration going into California and Arizona. There are smaller ties on the western side of the state in the Reno/Carson area, going into California and at Silver Peak. Page 15 lists what the ON Line transmission construction will entail. During the construction period, there will be temporary jobs available. More information is outlined on page 17 regarding the west side tie. Development of the facilities will be in stages because of the length of the line, length of time getting a license and the cost. The western project is 4 to 6 years behind the ON Line project. The next map is a different version of Mr. Schochet's map. The pink zones are geothermal zones. The blue zones are wind zones. The yellow zones are potential solar zones. The superimposed bubbles are BLM applications for resources. The ON Line project is able to access some of the resource zones outlined. The west-tied lines are shown in green-dotted lines on the west side of the State. They extend to the Alturas line and other regions in the State for bulk-transmission purposes. Studies are being conducted on these lines. These are paper-data studies at this stage. The study for the feasibility of the line running along the California border should be completed this summer. There is no limitation on the voltage capacity. There could be an issue placing these facilities. The next map shows a blowup of restrictions tying into the existing transmission system in the Las Vegas valley. Two corridors are split, the one proceeding east is the most constrained because of conservation-transfer areas, the Las Vegas Paiute Reservation and environmentally sensitive areas. These areas need to be crossed to bring the additional transmission lines required to bring the full capability of the lines on the west side to deliver load. We would have to go around Pahrump and the California border, 160 to 180 miles, assuming there are no environmental objections, adding hundreds of millions of dollars to the cost of the project. There are significant challenges building these lines from an environmental and cost perspective and systems operations.

Integrated renewables are not easy and are expensive. All utilities around the country are struggling with this. Renewable integration concerns are listed on the last page of this presentation. NV Energy's northern Nevada system is too small to absorb all renewables in this area. The peak load of the utilities is 1,600 to 1,700 MW. The minimum load of NV Energy's north system is 800 MW, sometimes below 750 MW. We have contracts for 500 MW. The total system cost to absorb renewables may increase. The ON Line helps the

cost by tying two systems together. Backup is required for wind and solar renewables because they are intermittent. This also causes problems by keeping units on standby.

CHAIR SCHNEIDER:
The map shows no solar power in the north. Is solar power not good in northern Nevada? We have a lot of sun here.

MR. VILLAR:
You could, but the south is more amenable to solar generation. The RETAAC identified the larger zones like the Mojave Desert in Nevada and California.

SENATOR TOWNSEND:
Where are we in the permitting process? What are your expectations on the date? Is financing available? Can you update us?

MR. VILLAR:
I am not an expert on permitting. It is under BLM review. The BLM review in Ely is delayed. The draft of the Environmental Impact Statement (EIS) is done and they are taking public comments. Parties are commenting separately. Some comments are heard at the EEC, and other comments are heard at the ON Line project. No decisions have been made. The decision was to proceed separately from the EEC. Discussions continue with BLM, with possible amendments to the application. The target date on the EIS decision is the end of this year. If we could get a decision earlier, we could expedite the process, and it might help us get stimulus money.

PAUL MCGUIRE (Public Utilities Commission of Nevada):
We are aware of eight transmission projects accompanied by maps in chronological order (Exhibit H). We are still using the old name on the NV Energy project because NV Energy has not filed the new project with us. The second project is the Great Basin Transmission Project developed by an LS Power Development subsidiary. It is similar to NV Energy's project. We issued a permit to them six months ago. Their coal-plant project was cancelled, but they are pursuing the line. The next two are applications for Eureka from Vulcan Power Company. These projects are in the preliminary stages. They have started the BLM process. They filed preliminary permits with us. The first project shown on the map, with the line going from the Dixie Valley into California, follows the Pacific DC Intertie that goes into Los Angeles, California.

This is part of a new right-of-way following an existing right-of-way. Their second project is similar to Mr. Villar's western tie that NV Energy is planning. It would go from the Yerington and Schurz area into the Las Vegas Valley. The fifth and sixth projects are proposed by TransCanada. The Montana and Wyoming wind-belt area on the map, at the Continental Divide, will bring direct current (DC) lines to the Idaho border. Renewables can be taken on and off by off-ramps to extend to the Las Vegas Valley and into the El Dorado, California, area south of Las Vegas, where there are a mass of transmission lines, coming and going. The seventh project is the Navajo Transmission Project bringing transmission from the Four Corners area, Colorado, New Mexico, Utah and Arizona, into the El Dorado Valley to deliver renewables. The last one is the Southern California Edison Project. They will upgrade a 115 voltage-gated (kV) line to a double circuit 230 kV. It runs from the El Dorado Valley transmission area through Primm, Nevada, into California. They have contracted with Pacific Gas and Electric Company to pick up a 415 MW solar power tower to deliver power to the main hubs in the Eldorado Valley to California load centers.

KIRBY LAMPLEY (Director of Regulatory Operations, Public Utilities Commission of Nevada):
To clarify, 115 kV is 115,000 volts upgraded to 230,000 volts. We have two different types of lines, high voltage alternating current (AC) lines are proposed, and TransCanada's 500 kV DC lines are proposed. The DC lines are more efficient with fewer losses due to resistance. It costs a lot of money to connect from an AC source to a DC source.

MR. MCGUIRE:
The lines are a combination of regulated utilities and private developers.

CHAIR SCHNEIDER:
Why do we not spend the extra money to put in the DC lines if they are better?

MR. LAMPLEY:
It is very expensive to connect, and there are only a certain number of off-ramps or connections they can use. For long distances, they are great, but not for in-between power.

CHAIR SCHNEIDER:
Could we lose power at Hoover Dam at the rate the water level is dropping?

MR. LAMPLEY:
It is a possibility. Presently we get only 200 MW from the Dam; the bulk of the power supply comes from other sources. Based on the peak load NV Energy experienced a few years ago at 5,800 MW, the percentage we get from the Dam is not a big deal.

CHAIR SCHNEIDER:
If there is no further testimony, the Senate Committee on Energy, Infrastructure and Transportation is adjourned at 10:20 a.m.

RESPECTFULLY SUBMITTED:

Sandra Hudgens,
Committee Secretary

APPROVED BY:

Senator Michael A. Schneider, Chair

DATE: