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GOVERNOR'S OFFICE OF ENERGY

MINUTES

New Energy Industry Task Force Technical Advisory Committee on Clean Energy Source

May 2, 2016

The Technical Advisory Committee (TAC) held a public meeting on May 2, 2016 at the following locations:

Legislative Building
401 S. Carson Street, Room 2134
Carson City, NV 89701

Videoconference
Grant Sawyer State Building
555 East Washington, Suite 4406
Las Vegas, NV 89101

1. Call to order and Roll Call: Chairman Kyle Davis called the meeting to order at 1:00 pm, calling roll and confirming a quorum.

Technical Advisory Members Present	**Technical Advisory Members Absent**
Anne-Marie Cuneo, Member	
Bob Johnston, Member	
David Emme, Member	
Dennis Laybourn, Member	
Jennifer Taylor, Vice Chair	
Joe Johnson, Member	
Josh Nordquist, Member	
Kathryn Arbeit , Member	
Kyle Davis, Chair	
Lisa Briggs, Member	
Starla Lacey, Member (via teleconference)	
Tom Polikalas, Member	

2. Public comments and discussion: Linda Gillaspy a Reno Resident stated she would like Nevada to be the number one producer of renewable energy. The first steps would be to place a moratorium on the future development of any natural gas power plans and second, present an aggressive time-line to close and eliminate all existing coal and natural gas power plants. The International Monetary Fund estimates American families pay approximately $4,400 per year in oil tax subsidies and that the National Academy of Science report to Congress, burning fossil fuels costs the United

States about $120 billion per year in health care costs. As well as 39.8% of the nation's greenhouse gas emissions are produced by the electric sector. Natural gas and petroleum systems are responsible for 29% of our methane /GHG emissions. In 2012, nearly 30% of methane emissions come from oil production and the processing, transmission and distribution of natural gas. In order to slow down our climate disruption and improvement of health of our citizens, we must eliminate fossil fuels as aggressively as possible.

Escenthio Marigny Jr., Student at the University of Nevada Reno stated that he's speaking on behalf of the Progressive Leadership Alliance or PLAN. We urge that this Task Force push upon the adoption of virtual net metering policies in Nevada. Virtual net metering will allow renters, low-income people and other households who do not own their own roofs to participate in the solar revolution by buying into off-site, community solar projects. We strongly encourage the Task Force to consider supporting the development of a publicly owned, green investment bank tasked with reinvesting the proceeds gathered from either a carbon tax or carbon auction into renewable energy and energy efficiency projects. With respect to financing of new, renewable energy generation and energy efficiency measures, Nevada must ensure that polluters, not communities, pay. We demand that polluters be made to pay for the green energy transition through either a carbon tax or carbon auction that reinvests. The greater part of the revenue raised, should be invested in community solar projects, and targeted green jobs programs that generate jobs in low-income communities and communities of color and other policies. We recognize that the need for renewable energy is now, but that this cannot be done without funding, and an equitable vision. We hope that in considering policy recommendations this task force considers plans that put people and the planet first.

Jane Feldman, Las Vegas Resident stated she has been looking at the water levels of Lake Mead and she's worried about drought, heat and fires. 2012 was the warmest year to date on record in Las Vegas and in 2014 the warmest year in history. It's not too late for us to act in order to avoid the worst effects of climate disruption. We need to close the Valmy Coal Fired Power Plant as soon as possible, not in 2025, but years before that. We need to make sure that low income businesses and individuals have access to clean energy solutions. We need a carbon tax that's a fee dividend neutral tax. Please take us into the 100% clean energy future that Nevada deserves.

Ashi Buhi, Progressive Leadership Alliance of Nevada stated that they are a Social Justice Organization that believes people and the planet come first over corporations and profit that put our communities and planet in danger. He urges the sub-committee to act on moving Nevada into 100% renewable energy. We need to create new energy system along with it, a new energy economy that makes polluters pay and won't put the burden on to the community. Create a community owned and community controlled utility system and advocates with inclusion of renters and low income households to purchase into a clean energy solution. Potential areas that this task force must look into must fit all these requirements if we don't want to push out these marginalized demographics. He is urging the Task Force to push for the adoption of Virtual Net Metering which allows multi-family, multi-tenant properties to buy into offsite community solar projects. Virtual Net Metering can target and reach out to apartment complexes, multi- family housing and low income housing where most low income families reside and this method can ease the burden on property owners, but still move into new energy sources. He strongly urges Nevada to consider the development of a publicly owned Green Investment Bank which would reinvest the proceeds

gathered from either a carbon tax or carbon auction into renewable energy and energy efficiency projects. Such a bank should be focused on making investments that move Nevada towards 100% renewable power and as racially and economically just manner as possible. As well as prioritize work in community owned projects when choosing where to invest. This can be realized if Nevada adopts a Pay As You Save model. A Pay As You Save model is where the utility invests in cost effective energy upgrades like better building efficiency and roof top solar. The utility pays the installer, so the customer pays nothing up front for the upgrades they choose. Using a tariff, the utility puts a fixed charge on the monthly bill that is significantly less than the estimated energy savings generated by the upgrade. State financing of the up-front costs would allow low to middle income consumers and utilities much easier access to clean energy without posing a risk to GRID stability. By adopting these methods we believe that we can make sure that we are reaching out to people of color and low income families as we move into clean energy.

Diane Campbell of Reno stated Nevada is in a perfect spot to occupy a strong, if not a leadership position in the new energy industry. Natural gas is not clean energy and it is extracted horribly and in Nevada especially, puts water resources at risk. Some politicians are backing legislation to facilitate clean energy exploration, true, but on a utility scale, meaning auctioning off of public lands and searching out natural gas projects. The most efficient strategies are smaller. In fact, this is recognized by N V Energy's new "Power-shift" campaign. Overall weatherization, close attention to actual usage using the LED bulbs, and such, these do make up about 5% of average household energy consumption. Their continued use would save households thousands of dollars per year. Yet any strategy listed on the Power-shift program of the utility is also totally doable on one's own. She understands that you are being pressured to support continued corporate profiteering, but support for pioneering efforts is historically a Nevada value. Please think about the world 20 years from now and provide a credible diverse foundation for all of our futures, using Nevada's renewable assets.

Ryan Baldwin, Student of the University of Nevada Reno, stated that he is speaking on behalf the University of Nevada Environmental Club as well as the University's Human Rights Club. Our organization support strong legislation aimed at the just and sustainable development of our state. We urge you to consider the ambitious yet comprehensive strategies outlined in the Clean Power Plan as a model for Nevada's energy development. Consider policies that will promote environmental education. Specifically, by passing and providing funding for regulations on the use of clean energy and building design for public buildings, especially schools. We could not only improve the sustainable performance of these buildings, but also bring environmental education to K-12 students in public schools. A study of 399 students from 5 middle schools varying in the presence of sustainable features performed by Dr. Laura Cole demonstrated this effect. She found that students of sustainably built schools were not only more knowledgeable about environmental concerns, but also showed a higher level of environmentally friendly behaviors at school. We urge you to consider policy that will foster not only clean energy economy, but rather a community dedicated to sustainable growth. Nevadans support a rapid transition to 100% of renewable energy.

Full accounts of the comments were captured in the audio recording, available on the Governor's Office of Energy's website.

3. Election of a Vice-Chair: Chairman Davis asked for nominations for Vice-Chair. Mr. Tom Polikalas moved to nominate Jennifer Taylor as Vice-Chair. Chairman Davis asked if there were

any other nominations, hearing none he called for a second. Ms. Lisa Briggs seconded, the motion passed unanimously.

4. Property Assessed Clean Energy (PACE): Mr. Tim Farkas, Ameriesco, used a power point presentation on the PACE program (Attachment I). Mr. Farkas stated that PACE is a Property Assessed Clean Energy Finance Program for energy efficiency improvements and renewable energy installations. It provides a method of financing, using Special Improvement District statute to attach a lien to the participating property. This satisfies the need for long term financing for interested commercial property owners. Repayment transfers to a new owner if the property is sold. The ability to attach a lien to the property can be used with other incentives, such as Federal tax credits for solar, utility incentives, grants and more. A few of the benefits of energy projects include reduced utility expenses, increased property value and provides a long term solution for long term projects.

Ann Marie Cuneo with the PUCN asked in terms of method of financing why it gets transferred with the property and the obligation and why the lien would not be paid off when the property is sold.

Mr. Farkas stated, it potentially makes the property more marketable to have those payments deferred because the savings from those improvements accrue over time, and therefore the requirement to pay them upfront is the very problem we're trying to address. The whole point of financing these are that improvements result in incremental savings over time. There is a fund of money to originate loans for certain types of improvements. PACE potentially would create a streamlined underwriting process for those types of loans as well.

Vice Chair Taylor made a recommendation to Chairman Davis that as the committee goes through the presentations today we look at a series of questions that members should all ask ourselves and have responses prepared for the next meeting. This way, members can look at each proposal and determine if it's something they want to bring forward to the Task Force on May 26th.
Chairman Davis stated that would help narrow our discussion for the next meeting. On this agenda we have a possible action under each of these items and his intention would be to gather information today and at the May 16th meeting. This would be something that may be included in a questionnaire for the next meeting.
Mr. Joe Johnson with Sierra Club moved to accept Vice Chairman Taylor's recommendation to create a series of questions and responses for the next meeting. Mr. Tom Polikalas seconded. The motion passed unanimously.

5. Policy Solutions to Accelerate Advanced Energy Deployment: Ms. Maria Robinson, Senior Manager of Energy Policy and Analyses used a power point to inform the members about Advanced Energy Economy (Attachment II). Ms. Robinson gave an overview of the three potential policy approaches that would help to speed the development of advanced energy deployment. The first would be fixes to the existing Renewable Portfolio Standard (RPS), remove barriers to corporate access to clean energy and development of a competitive procurement process. The goal is to open the markets to increase competition and allow a wide variety of technologies to compete. There are several large purchasers within the state who would be interested in purchasing 100% renewable energy. Expanding corporate access to clean energy with a market driven approach, provides the consumer with energy choices.

Nevada does have a green tariff provision in place, but right now that option is not aggressively marketed to consumers. All sources are renewable energy, natural gas, energy efficiency, storage, and demand response. The design of this type of program ensures the process is fair and objective, allows market competition among all resources, consider all relevant price and non-price factors , and conduct RFP process in a timely and efficient manner.

Mr. Polikalas with Southwest Energy Efficiency asked, as for competitive procurement, could Ms. Robinson provide the committee an estimate of the cost of energy efficiency resource.

Ms. Robinson stated that she could provide more specific information, but generally speaking it does depend somewhat on how much energy efficiency already been taken up by the state. Nevada hasn't had a significant statewide energy efficiency potential study done in the recent past, but she could give the sub-committee a general sense of those costs.

Vice Chair Taylor asked if there are existing statutes that need revision or deletion in order to implement a broad policy of clean energy prioritization. If so, what statues does the TAC think based on Ann Marie's presentation that we need to take a look at and propose to the Task Force for next session?

Chairman Davis stated the sub-committee should have this on the menu for a potential recommendation and framing at our next meeting.

Vice Chair Taylor moved to make that the questions posed to the TAC for response for our May 16th meeting. Mr. Josh Nordquist seconded.

Chairman Davis asked for discussion.

Starla Lacy with Nevada Energy made an addendum to the motion to have additional questions we may want to add.

Vice Chair Taylor clarified that her idea with the motion was that the sub-committee come back on May 16 with the specific proposals and to have this list of questions with responses due back in time for the May 16th hearing.

Calling for a vote, the motion passed unanimously.

6. Discussion of Clean Energy Market Potential: Mr. David Gibson, Sierra Club Toiyabe Chapter, gave a power point presentation to the members (Attachment III). Nevada has an incredible natural resource to produce renewable energy. In 2013 our neighboring states spent over $200 billion for the energy they consumed. All of these states will transition to renewable energy whether through their own mandates or through the requirements of the Clean Power Plan or other federal actions. Providing just 10% of the energy to each of our neighboring states is a $22 billion market each year. We could provide the backbone for the west coast energy grid of the next century. We can also provide energy services for the region, like storage and redistribution between states.

Nevada spends billions of dollars for the energy we consume each year. Currently 90% of our energy resources are fossil fuels imported from out of state. In 2013, we spent $8 billion on the fuels imported from outside of Nevada. We must transition away from coal by 2020 and transition away from natural gas in the electric sector by 2030. Please note the $8 billion market opportunity in Nevada is in addition to the $22 billion market in our neighboring states, bringing the total market potential to $30 billion annually.

The Sierra club supports ambitious efficiency programs that assist multi-family buildings, low income and providing a just and equitable transition for all Nevadans. Electrification of the transportation sector must be a top priority. We need to stop building new roads and highways which is further entrenching ourselves in the car base transportation system of the 1950's and instead develop a comprehensive mass transit system for the next century, including light rail, and maglev trains powered by our local and renewable energy sources. This could save billions of dollars on energy imports each year.

Mr. Gibson stated that we must pass legislation to retire the Valmy Coal Plant by 2020 and schedule the retirement of all our natural gas power plants by 2030. We can reinvest billions of dollars in Nevada and the Public Employee Retirement System has over $3 billion invested in fossil fuel holdings that are out of state investments, which all could be divested from fossil fuels and reinvested in Nevada's renewable energy economy. Divestment and reinvestment will have a greater impact when combined with the Green Bank. Currently being studied by the Governor's Office of Energy and the Interim Legislative Energy Committee. The Green Bank will use public funds to leverage private capital into efficiency and renewable energy sector. In addition, implement a statewide carbon tax to ensure those who generate the most pollution are paying for this statewide economic transition to renewable energy. The faster we can transition to 100% renewable energy, the sooner we can retain $21 million each day and create thousands of new jobs in Nevada.

7. Accounting for All of the Benefits of Renewable Energy Production: Mr. Josh Nordquist, Ormat Technologies used a power point presentation to exhibit benefits of renewable energy (Attachment IV). He stated his proposal is to consider a study that would be used to evaluate the true value of renewables as we go forward in our decision process. He suggested a study that could be used by the commission in their decision process for new resources in the future.

The premier value of renewable energy is the fact that it is green and it reduces or eliminates fossil fuel generation. That value is mandated through our renewable portfolio standards in each state as well as the Federal Clean Power Plan. Renewables can be produced or built basically anywhere, but in this state we have to be environmentally conscious of the lands used, as we move forward. Nevada resources are home grown and can be for local consumption, and for exports. In fact export is an important part of our future, even with projects that export their energy to other states.

Mr. Nordquist's proposal is to establish an evaluation study in the state through the Office of Energy or a 3rd party based on actual data from real projects. To evaluate the value of all levels of renewables and to determine the economic benefits of renewable technologies and provide clear

direction to the utility and the PUC in the preference of Nevada resources and power generation decisions in the future.

Mr. Nordquist fielded a variety of questions from the sub-committee members.

8. Discussion of Policy Ideas Relating to Renewable Portfolio Standard: Chairman Davis stated that he would like to defer this item to our next meeting on May 16th given time constraints.

Vice Chair Taylor stated this may be a good opportunity to look at some specific RPS questions so that we can discuss it at the May 16th meeting. Should we revise or expand the RPS, if so, what would be the proposal? What are the impediments to revising or expanding the RPS? Are there specific issues with the RPS, like phasing out banked credits? She thought these questions would be appropriate for the TAC to analysis and draft answers to before we meet on May 16th.

Vice Chair Taylor moved to have 3 questions for the TAC to analyze and draft answers to before we meet on May 16th. And those 3 questions be part of the next set of meeting materials with responses from the TAC.

Chairman Davis stated that if there are recommendations to email him as chairman and he would incorporate other ideas. Mr. Dennis Laybourn seconded. The motion passed unanimously.

9. Discussion of Policy Ideas Relating to the Renewable Portfolio Standard: Mr. Tom Polikalas, Southwest Energy Efficiency Project (SWEEP), used a power point for his presentation to the members (Attachment V). Mr. Polikalas stated that energy efficiency encompasses a broad array of technologies and programs for more efficient homes, with lighting, HVAC, Wi-Fi thermostats, and air conditioning. The American Council for an Energy-Efficient Economy, ACEEE does illustrate that efficiency is our cheapest resource. Generally ACEEE indicates efficiency costs on the order of one half to two-thirds of the cost of supply side resources. What that means for Nevada in terms of economic opportunity is that one of the ways jobs can be created in energy efficiency is in the manufacture of products that help save energy and money. We're seeing a growing cluster of manufactures that are making our economy more efficient, including Electra Therm Inc., a company based in Reno which takes waste heat and then generates electricity.

Policy recommendation 1: Provide the PUCN with additional tools to adopt revenue decoupling for NV Energy if it determines that doing so is in the public interest and direct the PUCN to consider adopting revenue decoupling in future rate cases or via a rulemaking. Revenue decoupling ensures that a utility's authorized revenues or revenues per customer are collected, no more and no less. It establishes an annual true-up to adjust collected revenues so that they are equal to authorized revenues. True-up can be refund or surcharge.

Policy Recommendation 2: To prioritize energy efficiency in integrated resource planning. Direct the PUCN and the regulated utilities to make energy efficiency improvement and DSM programs the top priority in Integrated Resource Planning and environmental compliance planning, given that energy efficiency improvement provides a wide range of economic, environmental and social benefits in Nevada.

Policy Suggestion 3: Modify the primary demand-side management (DSM) cost effectiveness test. Direct the PUCN to revise the primary cost effectiveness test it uses to evaluate DSM programs, in particular, directing the PUCN to adopt either the utility cost test or a version total resource cost test. We think it has enough merit for legislators to be aware of. It has also been adopted by a number of states including the State of Utah.

Policy Suggestion 4: Increase utility efforts/programs to help low-income Nevadans. Cost-effectiveness tests for low-income efficiency programs can be given a multiplier and programs can be bundled with EE programs overall cost effectiveness. Low-oncome energy efficiency programs may offer other economic benefits to Nevada through the Clean Energy Incentive Program.

Policy Recommendation 5: Require a State Energy Efficiency strategy, direct the Governor's Office of Energy to convene key stakeholders and prepare a state energy efficiency strategy that would achieve at least 20% energy savings by 2030. Take a look at how we can make the Nevada economy a much more productive economy in terms of being more efficient in energy and generating more jobs and replace some energy use with labor, water savings and carbon emission reduction.

Chairman Davis asked for discussion.

Mr. Emme asked what the PUC's position on the decoupling issue.

Ms. Cuneo stated the she can't speak for the PUC, but she could speak for staff. It's an option that we do for Southwest gas. For example if we has a really cold winter and people use a lot more gas than they had forecasted then after that winter people, we'll see a lower rate on their bill because Southwest Gas made more sales than what they were expecting. Conversely if the winter is warmer, and people don't use as much then you'll see the rates go up as a result of that. It's another way of recovering rates. Southwest Gas only does this for residential customers.

Mr. Polikalas stated that there have been advocates trying to advance decoupling as a general policy that would be beneficial to energy efficiency. There was an investigatory docket fairly recent in the 2015 timeframe that was under the purview of Commissioner Rebecca Wagner and solicited some perspectives to replace the policy known as the lost revenue adjustment mechanism. In that docket, a number of entities, Sierra Club, NCARE, and PUC Staff supported the idea of decoupling, but in a separate docket that Commissioner Noble Chaired they went back to the Legislative intent and deemed that it was not something the utility and commission was permitted to do and hence the desire to confirm that at the next Legislature.

Mr. Polikalas said they fully support the Green Bank as well as the PACE legislation.

10. Discussion of Policy Ideas Relating to Electric Vehicles: Mr. Tom Polikalas again presented another power point to the members (Attachment VI). He stated we can build on the success and improve our environment and economy through the electrification of transportation in Nevada and the nation. An important benefit of electric vehicles is that they make a significant contribution to the national security of the United States. Electric vehicles offer the best opportunity to reduce our dependence on foreign oil and bring the United States closer to energy independence.

We are spending a tremendous amount on importing fossil fuels into the state since we don't have oil refineries for gasoline. Our estimates on economic benefits of electric vehicles in the state are based on those that have received a federal tax credit. Electric vehicles have retained money through the federal tax credit and kept that in state. In aggregate, it is approximately $14,000,000, which has the derivative economic benefits of money being spent locally. The environmental benefits of electric vehicles in the SWEEP study looked at Clark County and Washoe County that show the benefits of reducing smog emissions with electric vehicles compared to gasoline and internal combustion engines.

Policy Recommendation 1: Establish transportation electrification as a state goal and encourage greater utility involvement and expanding the deployment of electric vehicles. Declare that there is a public interest in expanded use of electric vehicles, and direct the PUCN to work with the regulated utilities to develop plans and programs that will accelerate the adoption of electric vehicles in Nevada by the end of 2017. Similar legislation has passed in 2016 in Utah and Oregon.

Policy Recommendation 2: Create consumer financial incentives for electric vehicles; experience from other states shows that a modest financial incentive, either as a tax credit or point of sale rebate, has a significant impact on increasing electric vehicle sales; Nevada could create a state sales tax rebate, capped at a maximum of $2,500 per vehicle. Based on 2015 Nevada electric vehicles, and assuming this would increase sales an additional 50% on average, the cost to the state will be approximately $2.25 million per year. We recommend a point of sale rebated program that would be in effect for four years, 2017-2020.

Chairman Davis asked for discussion.

Ms. Cuneo commented that one of the issues that a lot of states have to deal with respect to electric vehicles was the loss of revenue from the gas tax for the state and local counties. She believes that is something that would have to be incorporated into this solution. The PUCN and the utility are not possibly the limiting factor and there may be some larger issues the sub-committee would need to look at.

Mr. Polikalis stated electric vehicles currently represented approximately 1/10 of 1% of vehicles on the road. Funding roads is a broader discussion to deal with the situation imposed by the 99.9% of other vehicles. However there should be a corresponding way to have electric vehicles pay their fair share. One way that's accomplished in the state of Colorado is an add-on fee at the time of registration and that a portion goes to road construction. Currently under Colorado law there's another portion that goes to fund electric vehicle infrastructure. Our recommendation would be after a certain amount of time, after vehicle charging infrastructure is sufficient, then roll the additional registration fee into road construction.

Mr. Polikalis fielded a number of questions by the sub-committee members and stated he would provide more information on state sales tax.

11. Set time and date for June meeting: The June meeting was set for June 6, 2016, 9 am to 12 pm.

12. Public comments and discussion: Mr. David Gibson, Sierra Club Toiyabe Chapter, mentioned job creation, currently $7 billion are spent on out of state on fossil fuels a year, that's equal to over 100,000 jobs a year out of state. It is very significant and retaining that funding in the state would create an enormous number of jobs.

The Smart GRID that we're currently building allows us to match our energy demands with energy that is being produced. It would be easy for utilities to have car charging stations. If there are thousands of charging stations across the state, that can be an effective way to reduce demand. Integrating that into our EV planning can be a very effective way of both matching our demand with the renewable energy production and integrating EV's into the GRID. The Crescent Dunes solar plant has put its first power into the GRID in the middle of night, so renewable is capable of storage and is the first of its kind. It's expensive power, but hopefully the price will come down over time. We're at a point where every new building in the state could be net zero energy and if we're going to implement and require a new building code statewide, we should go to a net zero energy requirement.

13. Adjournment: Meeting was adjourned at 4:28 PM.

A full account of the meeting was captured in an audio recording, available on the Governor's Office of Energy's website.