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GOVERNOR'S OFFICE OF ENERGY

**MINUTES
NEW ENERGY INDUSTRY TASK FORCE
TECHNICAL ADVISORY COMMITTEE on DISTRIBUTED GENERATION AND
STORAGE**

April 14, 2016

The TAC on DG and Storage held a public meeting on April 14, 2016 beginning at 9:00 AM at the following locations:

LAS VEGAS

Grant Sawyer State Office Building
555 East Washington, Room 4412
Las Vegas, Nevada 89101

CARSON CITY

Nevada Legislative Building
401 S. Carson Street, Room 3137
Carson City, Nevada 89701

1. Call to Order and Roll Call.

Chair, Jeremy Susac called the meeting to order. Roll Call was taken and it was determined a quorum of the Distributed Generation and Storage TAC was present.

TAC Members Present

Jeremy Susac, Chair
Bo Balzar
Matt Tuma
Jason Geddes
Marco Velotta
Dale Stransky
Jessica Scott
Bobby Hollis
Jack McGinley

TAC Members Absent

Adam Kramer
Diarmuid O'Connell
Tom Ewing

2. Introductions

Individuals from the TAC introduced themselves at the request of the chair.

3. Public comments and discussion.

Mr. Greg Clark made comments about the use of chemicals at wastewater treatment facilities and the use of treated effluent to cool energy facilities. He commented on the need to reduce carbon dioxide emissions in the environment. He had a rooftop solar system put on his house which did not qualify for a rebate and has had problems with his third-party installer. Mr. Clark concluded that his unit produced more than enough power to net out his usage and he has made several home improvements to net out power usage throughout the calendar year and reduce his carbon footprint. Mr. Clark's system was installed in 2014 and he would like to see buy back rates set at a fair and reasonable level.

Mr. Doug Bennett made comments that he has a rooftop solar system. He believes that customers were misled to install systems and are now being priced out of participating in this program. He believes that the participants of rooftop solar are responsible for a considerable amount of the existing solar energy for the State. He thought that customers would be protected under Nevada NRS and thinks it is unfair how the PUCN decision affected his solar customers.

Mr. Tom Dudas introduced himself as a longtime resident of Las Vegas. He does not agree with the PUCN decision on Net Metering and made comments about the need to look more in-depth at NV Energy ownership and transmission systems. He made comments that profits should not be made at the expense of ratepayers and that it is not environmentally sound to install large scale solar facilities throughout the state.

Ms. Marcia Bollea introduced herself as a Net Metering customer and is upset that her reimbursement rates have gone down. She said that she puts more power onto the grid and feels that the PUCN decision was an attack on solar power. She is upset about the uncertainty which has been created for NEM customers and installers. She believes that NEM customers should be treated the same as other customers and are not subsidized by other ratepayers.

Mr. David Gibson introduced himself as a Reno resident who lives in a net zero home. He made home improvements to make his home more efficient. He discussed Nevada's importation of fossil fuels for energy and the need to support clean power produced in the house. He believes that energy efficiency programs need to be part of any recommendation.

Mr. Paul Caratto introduced himself as a Carson City resident and NEM customer. He proposed that a more rigorous analysis of the impacts of NEM customers should be taken into account. He does not think that NEM customers are subsidized by other ratepayers and thinks these claims need to be further scrutinized. He would like to see policies to change which govern Net Metering and that previous rates be reinstated.

Mr. Tom Polikalas introduced himself as the Nevada representative of the Southwest Energy Efficiency Project. He would like the state to pursue a policy of decoupling and that the PUCN be given the authority to do so. This removes the link between electricity sales and profit. He would also like to see policies to support waste heat recovery, electric cars, and storage.

Mr. Fred Volts introduced himself. He believes that ratepayers and taxpayers have already invested too much money in solar energy without enough data to support it need. He believes that solar

energy does not work out economically without subsidies and that this should not continue. He does not think that subsidies end and the industry.

4. Review of Governor Sandoval's Executive Order 2016-04, and the Governor's Accord for a New Energy Future

Ms. Angie Dykema introduced herself as the Director of the Governor's Office of Energy and Chair of the New Energy Industry Task Force. She thanked the TAC members for their service on the Committee. The NEITF was created in 2009 with 9 seats prescribed by law and 3 additional seats at the discretion of the Director. The NEITF was last convened in 2011 and Director Dykema was directed by Governor Sandoval to reconvene the Task Force in an Executive Order on February 23rd. Director Dykema established three TAC's for each of the three policy areas. The Distributed Generation and Storage TAC was established to provide recommendations to support distributed generation and storage with a specific focus on rooftop solar and net metering. The Task Force has two important deadlines. First, the Task Force shall deliver a report on or before September 30th, 2016 with recommendations and findings. Second, and more urgently, bill draft requests are due to the Governor's Executive Office by June 1st so that request can be prioritized and the Governor can decide which requests to present to the Nevada Legislature. This means that the Technical Advisory Committees are tasked with determining what if any legislative changes may be necessary in order for the Task Force to carry out its charges from a policy perspective. The assignment for the Technical Advisory Committee is to come up with recommendations to provide to the Task Force at its next meeting in May. The Task Force will in turn recommend what will ultimately be submitted as Bill Draft Requests for the Governor's consideration. Other recommendations and issues may be discussed up until September, but the immediate urgency is to decide what to take back to the Task Force by May 26th for them to vote on as bill draft requests. Director Dykema gave an overview of the comments the Governor's Chief Strategy Officer, Dale Erquiaga gave to the Task Force. This Committee is not the PUC, and is not here to re-litigate the decision that has been made or set rates for energy customers. That being said, the Governor has stated that he would have preferred guidance for protecting the rates of the existing or "grandfathered" customer, or those customers with net metering systems already installed prior to the date the cap was met. Additionally, recommendations on what data and information is necessary to set energy policies are important and what policies for new technologies are necessary. Director Dykema called attention to the Governor's Clean Energy Accord with 16 other Governors and the need to use this as a guiding document for policy recommendations.

Marco Velotta asked how many BDR's are expected from the Task Force. Director Dykema said that at least 3 are expected but that is subject to what the Task Force brings forth at the next meeting and other opportunities to introduce legislation.

Jeremy Susac asked if language or concepts is required by the June deadline. Director Dykema said that only concept language is due by June and specifics can be refined at a later date.

5. Grandfathering

a. Overview of Nevada's current NEM customers

Mr. Jesse Murray introduced himself as the Director of Renewable Energy Programs and is responsible for administering the Renewable Generations Program. Mr. Murray provided an overview of installed capacity which has been intertied with the grid and pipeline capacity which

represents customers pursuing an interconnection. Mr. Murray discussed installed and pipeline capacity had two major spikes; in 2011 and in 2014/2015. Currently, NV Energy has about 200 MW of installed distributed generation and about 70 MW in the pipeline of approved projects. About 72% of NEM applications were received after Jan 1, 2015 and 47% were received after SB 374 passed on June 5, 2015. Mr. Murray discussed distributed generations contributions to the State's Renewable Portfolio Standard. Additional details were given in his presentation on the current customer and capacity counts, installed NEM systems by technology and the size of solar PV systems. Mr. Murray then gave an overview of the Renewable Generations program, capacity, ownership and funding breakdowns of incentives by installation type and rates.

b. Committee Discussion

Mr. Bobby Hollis asked if there has been a drop off of NEM applications in 2016. Mr. Murray said that there has been a significant drop in applications but they continue to receive a small number.

Mr. Marco Velotta asked if there have been a lot of customers who asked to stop participating

Mr. Jeremy Susac asked if there has been a significant drop off of applications in the pipeline. Mr. Murray said that they continue to see cancelations mostly through expiration after 12 months of not moving forward, not necessarily folks actively withdrawing applications.

Ms. Jessica Scott asked what percent of projects in the pipeline would be interconnected. Mr. Murray could not estimate what the attrition rate would and that the decision would be made with the participants.

Mr. Bobby Hollis asked for details on the 2016 installs after the PUCN decision. Mr. Murray said that they continue to install 3-4 MW per week from the backlog of 2015 applications.

Mr. Jeremy Susac asked what caused the 2011 and 2014/15 spikes. Mr. Murray said that several large installations that went on line due to positive incentives. The majority of 2014 applications were residential systems.

Mr. Bo Balzar asked for an update of Renewable Generations program goal of installing 250 MW of capacity. Mr. Murray said that they will be able to make the 250 MW goal with 40 MW remaining in the pipeline.

Mr. Hollis asked where the state stands on the 3% capacity of peak capacity goal. Mr. Murray answered that the 235 MW capacity was derived from the 3% mandate and there remain more

Mr. Jeremy Susac asked for follow-up data on the attrition of projects in the pipeline. Mr. Murray said that that information could be provided.

Mr. Tuma asked for details of how NEM bills have changed. Mr. Murray provided the change from a 1 to 1 exchange of energy capacity but now new banking will occur. NEM customers are now subject to some additional fees and receive a monetary payment for energy put onto the grid. Currently the new rates are about 20% less than retail rates.

Mr. Susac clarified the number of NEM customers with systems installed and those in the pipeline. Mr. Murray said that they continue to receive applications and about 2-3% of their customers participate in Net Metering.

Dr. Geddes clarified which new rates are reflected on NV Energy's website.

6. Overview of the uses of data in developing energy rates

a. Role of cost of service studies in setting energy rates

Dr. Carl Linvill, introduced himself from the Regulatory Assistance Project and his background as Energy Advisor to former Governor Guinn and service as a PUCN Commissioner. He provided an overview of the Governor's New Energy Accord to diversify with renewables, efficiency, and conservation while modernizing infrastructure, encouraging clean transportation and planning for the transition. He discussed major principles to diversify into clean energy and efficiency, promote cost effectiveness, promote reliability and resilience, support innovative American companies, empower and engage customers, encourage independence and competitiveness, and work with other states. Dr. Linvill gave an overview of the Cost of Service Study. He outlined the costs recovered by the utility is targeted to cover revenue requirements for production, transmission, distribution, admin costs, fuel costs, and taxes. He identified that embedded costs are backward looking and marginal costs are forward looking. He identified the general classes of customers in Nevada and the categories of allocated costs. Dr. Linvill discussed different methods to calculate rates and project impacts on the grid by different classes. He concluded with

Mr. Jack McGinley asked about if it is appropriate for demand charges to be used for residential customer. Dr. Linvill said that they should customers should be subject to costs associated with their burden on the system but that it would likely be complex result in minimal cost recovery. He said that time of use charges are probably more appropriate.

Mr. Jack McGinley asked for clarity about stability of long term jobs for DG installations or the economic impact of raising energy rates for all customers. Dr. Linvill clarified the desire to create new energy technology jobs requires some investment and discussed that people feel differently about any subsidy.

Mr. Bobby Hollis asked how Nevada's overall system relates to other states. Dr. Linvill said that he was not in a position to make that comparison.

Mr. Bo Balzar asked for clarification for differing rates for different classes of customers. Dr. Linvill used the example of multi-family units and single family homes have different costs for providing service causing the creation separate classes.

Mr. Jeremy Susac clarified that there are some shared costs depending on geographic proximity to generation facilities and the Federal incentives to aggregate costs. Mr. Jack McGinley clarified that every customer has a different cost associated with delivery of energy which is very complex and has resulted in customers being divided into general classes and costs are averaged.

b. Cost of Service Study relied upon by PUCN

Ms. Anne-Marie Cuneo introduced herself as Director of Regulatory Operations for the PUCN. Ms. Cuneo provided an overview of embedded and marginal costs. She gave an overview of the principal of cost causation and the regulations for the development of marginal cost of service studies. Ms. Cuneo provided an overview of costs for generation, energy, transmission, and distribution. These considerations go into how the PUCN determines rates in General Rate Cases. Details were provided on customer cost inputs, and allocation costs to different customer classes. Marginal transmission and distribution demand was discussed for probability of peak costs responsibility and how those costs are reconciled. The PUCN is required to charge some variable costs in a non-variable way and described what considerations are made in a rate case for all customer classes. An overview was provided on what different parties participated in the NEM cost of service study. Ms. Cuneo identified that incremental changes will need to be implemented in the upcoming PUCN rate cases and that any avoided costs will cause NEM rates to go down.

Dr. Geddes asked for clarification whether GS1 and GS2 will be considered in new rate cases, as the most recent decision only impacted GS1. Ms. Cuneo indicated that that will be driven by the utilities' filings with the PUCN.

Dr. Geddes asked for clarification of the benefits of NEM to be considered in the previous and upcoming rate cases. Ms. Cuneo indicated that the PUCN has asked for additional values to be discussed in upcoming dockets.

Dr. Geddes asked for clarification for the residential and commercial load uses and how those differ for NEM customers. Ms. Cuneo identified that any costs avoided by different users should be reflected by future rates going down.

Mr. Marco Velotta asked for clarification on residential time of use regulation. Ms. Cuneo identified that the PUCN is prohibited from mandating time of use billing for customers but that it is offered on an optional basis.

Mr. Bo Balzar asked for clarification of the increased base service charge for NEM customers. Ms. Cuneo explained that the increase was due to decreases in volumetric charges and that this fee could go down in future rate cases.

Mr. Bobby Hollis asked about the value of surplus energy fed back into the grid. Ms. Cuneo explained that it is difficult to put a cost to that benefit because it is more of a value and that it can be re-evaluated in future cases.

Mr. Jeremy Susac asked for clarification on the benefits which were not covered in the NEM decision. Ms. Cuneo discussed the other states which identified additional factors to determine the benefits of other components of NEM to be considered under the new integrated resource plan. Mr. Jeremy Susac asked who the burden of proof is on for determining the additional values of distributed solar. Ms. Cuneo responded that the initial burden is on the utility but that any intervenor can introduce new data and incremental changes can be implemented over time.

Mr. Dale Stransky asked for a clarification if additional costs are assigned to benefits provided by NEM. Ms. Cuneo answered that those costs would be passed on to all energy customers, not just residential.

Dr. Geddes clarified who can submit comments and data in the PUCN process. Ms. Cuneo said that impacted customers are allowed to intervene in each rate case and that intervention requirements for the integrated resource plan are fairly low and intervention will likely be granted. Ms. Lina Tanner, from the PUCN, clarified the process that interveners must be approved by the PUCN.

Mr. Bo Balzar asked for clarification of the excess energy credit and how these fees were calculated and the cost shift to non-NEM customers. Ms. Cuneo discussed the non-variable rates for energy component and how those costs would be impacted by additional benefits of NEM customers. It was identified that the value of NEM would impact the costs shifted to other customers.

Mr. Bobby Hollis asked about the move in other states to a demand charge and whether that would be a valuable tool in Nevada. Ms. Cuneo said that demand charges are a good price signal for energy costs but that there are objections due to the complexity of identifying rates.

Mr. Bo Balzar asked if there were large changes in energy usage by NEM customers after they installed systems. Ms. Cuneo identified that some customers did change their behavior to utilize generation from NEM systems.

Mr. Jeremy Susac asked advice on ways to make policy alternatives for smart developments that produce distributed generation. Ms. Cuneo identified that any lowering costs should be reflected in the rates and that there are many ways to encourage NEM systems.

c. Review on Nevada Net Energy Metering Impacts Evaluation

Mr. Zach Ming introduced himself representing Energy and Environmental Economics who produced a study of NEM impacts for the PUCN in 2014. He provided of an overview of E3 and the study to look at the costs and benefits of NEM in Nevada. Mr. Ming provided an overview of key study questions and ratepayer impact measures. Detail was provided on the input assumptions of the study and the major sources of power for Nevada. He outlined the study's base case impact measure results for installations before 2013, during 2014/15, and those in 2016 and later to identify the costs and benefits for the systems and NEM's impacts on the State's Renewable Portfolio Standard. Mr. Ming identified Nevada's total resource cost and benefits look and the sensitivity of the results to changing energy prices and circumstances. He identified many of the changes which can impact the amount of cost and benefits identified in the study and the need to regularly update those figures.

Mr. Jack McGinley clarified the sensitivity about the price of large scale solar in the study. Mr. Ming identified that the lower the cost of large scale solar, the lower the value of distributed generation.

Mr. Jeremy Susac clarified the established the costs for existing load and asked for clarification of the difference for NEM systems on existing homes versus new home construction. Mr. Ming

identified that there are different costs when the energy load need changes and new homes would need a new analysis to see if there is a cost shift.

Mr. Marco Veolotta asked to clarify on the impacts of storage on the benefits of NEM. Mr. Ming identified that storage is incentivized most when there are price signals are given through time of use fees and the reduction of usage during peak times.

Mr. Bobby Hollis asked to clarify on changes to the costs depending on the total NEM capacity and how that will impact with higher penetration. Mr. Ming identified that significant diminishing returns on NEM impacts are more likely when it reaches the 5-10 percent of load.

Mr. Jack McGinley identified that we don't have much experience in Nevada evaluating the impacts of storage and asked what lessons from other states would be good to know. Mr. Ming identified that storage is most impactful to utilize storage during peak grid times. Mr. McGinley identified the possible value of allowing the utility to manage distributed storage during peak demand times.

Mr. Dale Stransky asked for clarification on the low cost of large scale solar and natural gas loads and how those would impact ratepayers. Mr. Ming identified that those changes and additional ones will impact the value of NEM systems both up and down depending on the area of change.

7. Effect of Distributed Generation on Existing and Future Grid

Ms. Jessica Scott introduced herself as the Regional Director from Vote Solar. She gave an overview of the current inefficiencies in our electric system and that 67% of supply is lost in electricity supply and delivery. An overview was given to the ability to improve natural resource management and reduce the carbon and water intensity of power generation. Ms. Scott identified many of the benefits of distributed generation which were not considered by the PUCN decision. Many of these benefits are consistent with the Governor's Energy Accord and identified other states that are grappling with this issue. Additional benefits of storage were identified which can further the positive benefits of distributed generation. Vehicle integration programs should be considered along with other storage and distributed generation programs. Ms. Scott identified that appropriate price signals should be sent to customers to influence better system management. Other states were identified that have found that the benefits of solar exceed costs and have a net benefit. The benefits of solar are often comprehensive and accrue over time. Ms. Scott presented the need to plan for a distributed grid in the future and proved more efficient systems.

Mr. Jack McGinley asked what performance cost data exists for the benefits of storage. Ms. Scott said that utilities are starting to analyze the impacts of storage. Mr. Jim Bach added that this emerging area needs more data to identify the true benefits of various storage opportunities.

8. Discussion and possible action on future agenda items, schedule and goals through September 2016.

Mr. Jack McGinley identified storage as an emerging technology which we need to develop supportive policies around and additional data is necessary. Mr. Jeremy Susac identified the possible need for cost recovery of any pilot programs.

Mr. Dale Stransky identified some of the incentives in other states for utilities to use and support distributed generation resources. Mr. Jeremy Susac and Ms. Jessica Scott identified this issue as a potential to find cost recovery mechanisms and rate of return for utilities. This would be a look at how to make distributed resources financially palatable for utilities.

Mr. Jeremy Susac identified that the Grandfathering issue needs to be addressed including an application date, size, term, tariff rate, and parameters for the recommendation. Comments were made on how to approach this by Mr. Marco Velotta, Mr. Jack McGinley, Ms. Jessica Scott, Mr. Dale Stransky, Mr. Bobby Hollis, Mr. Matt Tuma, Mr. Bo Balzar, and Dr. Jason Geddes.

Mr. Jeremy Susac identified the need for the use of data for shaping rates and what types of qualitative and quantitative information is needed to set rates in the future. There was initial discussion over which benefits, if any, should be identified and utilizing other states as examples for how to set priorities.

Dr. Jason Geddes identified the desire to get more information on smart meter integration and the impacts of advanced inverter uses in combination with smarter grid management.

Mr. Marco Velotta identified time of use as a potential area for recommendation for NEM systems.

Mr. Jeremy Susac identified that a presentation on storage during following meetings. Mr. Bo Balzar offered to connect with storage vendors he works with to make a presentation.

Mr. Matt Tuma suggested that committee members submit written recommendations for the committee to consider. Mr. Jeremy Susac set the date for initial recommendations by April 22nd.

9. Discussion and possible action on assigning a Co-Chair

Mr. Jeremy Susac made a motion to make Mr. Matt Tuma Co-Chair, Dr. Jason Geddes seconded and the motion was approved.

10. Set time and date of next meeting.

Mr. Jeremy Susac set the next meeting on April 28th and a meeting poll to be sent out to schedule a third meeting at prior to the next Task Force meeting at the end of May.

11. Public comments and discussion.

Ms. Judy Trigal introduced herself as a 30 year Nevada resident and NEM customer. She would like to see her system grandfathered but would like to see the continuation of distributed solar installations.

Ms. Louise Helton introduced herself as the owner of a solar installation and electric company. She indicated her support of NEM systems and updated the policy to make it more financially feasible to install projects.

Mr. Blake Guinn offered comments that the grandfathering options should stay with the system and not the house.

Mr. Dennis Sian offered comments that he is upset with the PUCN decision regarding NEM customers. He believes that the process should be simplified and policies should be put in place to support further distributed solar development.

Mr. Fred Volts added additional to his earlier public comments. He identified the environmental problems with lithium mining and the supply chain costs associated with distributed generation and storage. He added that he does not think that storage is an important

Mr. Travis Miller introduced himself from the Great Basin Solar Coalition. He supports grandfathering projects for 25 years which is the warrantee of many solar systems and should follow the system or home.

12. Adjournment.

Mr. Jeremy Susac adjourned the meeting at 4:18 PM.

DRAFT