**DISTRIBUTED GENERATION and STORAGE TAC RECOMMENDATIONS – 09/12/2016**

1. The Task Force recommendation on PACE programs is expanded to include battery storage systems.

**Background:** As the Task Force recommended the Legislature revisit PACE-enabling legislation, broadening definitions to include battery storage technologies will expand the impact of programs.

2. A recommendation that all energy codes (IECC) adopted after June 1, 2017 have three performance paths: (1) Prescriptive; (2) Performance; (3) Alternative Compliance.

a. After July 1, 2018 all jurisdictions in Nevada must have adopted the three performance paths if they have not adopted a new IECC since the effective date of the bill;
b. Both performance and Alternative Compliance-based paths must use a "net score" that takes into account energy producing features that have been installed on a home via the Dynamic Scoring matrix.

**Background:** Currently, Nevada mandates adoption of the International Energy Conservation Code (IECC) and there have been challenges with prescriptive green building programs. The IECC has become more prescriptive and energy savings returns on each dollar spent on code compliance is diminishing. The one-size-fits all approach of prescriptive requirements for new residential construction does not fit with many of the performance drivers for Nevada's climate. Aligning regulations with performance will allow for market driven compliance and the use of installed energy producing and storing features would be accounted for in the rating of the home.

3. A recommendation that the 2017 Legislature consider a bill that would define "energy storage" technologies in NRS, and require that energy storage be considered in utilities' generation, transmission, and distribution planning processes. Sample definitions from states including Oregon, California, and Massachusetts should be used as a starting point.

**Background:** There remains uncertainty in what exactly constitutes energy storage technologies, and how energy storage technologies should be included in utility planning processes. This proposal would remove ambiguity in the definition and allow energy storage to be more fully considered as an option to traditional grid investments in generation, transmission, and distribution. Following are some sample definitions in legislation from other States which should be used as a starting point:

Oregon's HB 2193 (2015)

> (2) "Energy storage system" means a technology that is capable of retaining energy, storing the energy for a period of time and delivering the energy after storage.

California's AB 2514 (2010)

> (1) "Energy storage system" means commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy. An "energy storage system" may have

any of the characteristics in paragraph (2), shall accomplish one of the purposes in paragraph (3), and shall meet at least one of the characteristics in paragraph (4).

(2) An "energy storage system" may have any of the following characteristics:

(A) Be either centralized or distributed.

(B) Be either owned by a loadserving entity or local publicly owned electric utility, a customer of a loadserving entity or local publicly owned electric utility, or a third party, or is jointly owned by two or more of the above.

(3) An "energy storage system" shall be cost effective and either reduce emissions of greenhouse gases, reduce demand for peak electrical generation, defer or substitute for an investment in generation, transmission, or distribution assets, or improve the reliable operation of the electrical transmission or distribution grid.

(4) An "energy storage system" shall do one or more of the following:

(A) Use mechanical, chemical, or thermal processes to store energy that was generated at one time for use at a later time.

(B) Store thermal energy for direct use for heating or cooling at a later time in a manner that avoids the need to use electricity at that later time.

(C) Use mechanical, chemical, or thermal processes to store energy generated from renewable resources for use at a later time.

(D) Use mechanical, chemical, or thermal processes to store energy generated from mechanical processes that would otherwise be wasted for delivery at a later time.

Massachusetts's H 4568 (2016)

"Energy storage system", a commercially available technology that is capable of absorbing energy, storing it for a period of time and thereafter dispatching the energy and which may be owned by an electric distribution company; provided, however, that an energy storage system shall: (i) reduce the emission of greenhouse gases; (ii) reduce demand for peak electrical generation; (iii) defer or substitute for an investment in generation, transmission or distribution assets; or (iv) improve the reliable operation of the electrical transmission or distribution grid; and provided further, that an energy storage system shall: (1) use mechanical, chemical or thermal processes to store energy that was generated for use at a later time; (2) store thermal energy for direct heating or cooling use at a later time in a manner that avoids the need to use electricity at that later time; (3) use mechanical, chemical or thermal processes to store energy generated from renewable resources for use at a later time; or (4) use mechanical, chemical or thermal processes to capture or harness waste electricity and to store the waste electricity generated from mechanical processes for delivery at a later time.

4. A recommendation that the 2017 Legislature consider a bill to update NRS Chapter 704 to include energy storage procurement targets to serve all electric customers so that Nevada may unlock opportunities to utilize cost-effective energy storage on the electric grid. The bill would include targets for storage interconnected to each point of the grid – customer-connected, distribution-connected, and transmission-connected. Further, storage procurement targets should increase over time with targets starting no later than 2020, as to ensure that lessons learned from earlier procurement inform subsequent procurement.

**Background:** Energy storage on the electric grid can increase grid efficiency, integrate renewable energy, reduce greenhouse gas emissions, offset the need for costly grid investments, improve grid resiliency, and increase energy independence. However, significant barriers to deploying energy storage exist in the many legacy grid procedures and tariffs that do not contemplate the use of energy storage on the electric grid. Specifically, utility planning, valuation, operations, procurement, interconnection, and rate design do not systematically incorporate energy storage. The best way to update grid processes and unlock opportunities for the state to benefit from storage is to learn by doing. By demonstrating a commitment to utilize energy storage, storage procurement targets will shape grid processes that fully incorporate energy storage and thus will allow the state to uncover where storage is a more cost-effective investment than traditional grid infrastructure.

Storage procurement targets for utilities should be set for each point of the grid – transmission, distribution, and customer-located – to ensure that utility processes impacting each point of the grid are updated to include storage. Procurement targets should increase over time to allow for lessons learned to inform future procurement. For example, a small amount of storage procurement should occur by 2019, a larger amount by 2021, and a substantial amount by 2023. The Public Utilities Commission should oversee the utilities' storage procurement activities, including reviewing biannual compliance reports to be filed by utilities on their progress towards achieving their storage procurement targets.

No additional costs would be incurred by Nevadans as a result of the state adopting storage procurement targets. The bill should propose the procurement of *cost-effective* energy storage so that there is only upside for Nevadans. If, after thorough investigation including a request for offers, utilities cannot find cost-effective opportunities for energy storage on the grid, then utilities could defer their storage procurement.

5. A recommendation that the 2017 Legislature consider a bill to give one agency or joint agencies specific authority to adopt regulations to oversee the development of distributed resources. The authority to address consumer complaints regarding business practices in the delivery of distributed generation to be consolidated and develop regulations with input from stakeholders.

**Background:** Distributed generation is and likely will continue to be a growing source of electricity for the State. The authority to regulate this growing industry has been piecemeal and focused on encouraging the initial development of distributed resources. The use of Net Metering was initially only offered to 100 customers in the north and south, and has grown substantially since that initial legislation. The authority to regulate this emerging industry

should be added to a single agency without characterizing distributed generation providers as public utilities. Nevada consumers currently do not have a centralized agency to file complaints regarding the distributed generation industry. Complaints are often received by the PUCN, BCP, Contractors Board, NV Energy, and others. This lack of clarity on oversight has created confusion for customers seeking to make complaints. SEIA has established an advisory Business Code to promote transparency, good faith, and understanding in the solar energy industry. Any new regulations should be developed through a stakeholder process to avoid duplication, inform consumers, and coordinate education outreach campaigns.

6. A recommendation that the 2017 Legislature consider a bill to specifically direct the PUCN to create a Value of Distributed Solar structured around quantifying the known and measurable impacts both positive and negative internal to the utility of the following benefits and costs:

i. Avoided Energy
ii. Line Losses
iii. Avoided Generation Capacity
iv. Ancillary Services
v. Transmission/Distribution Capacity
vi. Avoided $CO_2$ Emission costs
vii. Voltage Support
viii. Avoided Criteria Pollutants costs
ix. Fuel Hedging/Diversity
x. Environmental costs
xi. Utility Administration costs
xii. Utility Integration costs
xiii. Participant Bill Savings

**Background:** Net Metering has been based on the exchange of energy at the retail rate with a focus on increasing the number of customers participating in the program. As distributed generation has grown to a larger share of energy generation in the State, a more specific and permanent method of quantifying the net benefits and costs of distributed energy resources should be established. The PUCN has begun evaluating these costs and benefits when evaluating all resources (including distributed generation) in dockets in the State's Integrated Resource Plan and General Rate Case.

7. A recommendation that the 2017 Legislature consider a bill to direct the PUCN to ensure that customers investing in distributed energy resources be reasonably certain that future changes in policy and rate design will not significantly lessen the economics of their distributed energy resource investments

**Background:** The potential for sharp changes in policy and rate design makes customers and developers that offer distributed energy resources to customers hesitant to invest in distributed energy resources. Many distributed energy resource investments are long-term investments, for which customers will not breakeven for 10-20 years. If there is a risk that partway through the investment payback period policy changes will make their investments uneconomical, then customers will be less likely to invest in distributed resources. For example,

uncertainty of excess energy compensation rates for solar has, in part, resulted in a drastic drop-off of new distributed generation customers. Power purchase agreements establish compensation rates (often for periods of 20 or 25 years) and facilitate financing for capital investment. Similar long-term agreements could be put in place for distributed generation customers. One way to accomplish this could be to create annual tranches of distributed energy resources for which residential and small commercial customers are guaranteed the a rate structure or compensation rate set by the PUCN.

8. A recommendation that the 2017 Legislature consider a bill to authorize a reasonable minimum bill structure as a compromise interim measure (until the PUCN has a final decision in the Value of Solar Dockets for both Sierra Pacific and NV Power) to resurrect the residential and small commercial solar market in Nevada. The bill would reinstate retail rate net metering and restore solar DG customers to their prior rate classes. In return, solar customers would pay a minimum bill not to exceed $25 per month to ensure a minimum customer contribution from all ratepayers and to reduce the potential impacts of customer cross-subsidization.

**Background:** Minimum bills are charges that set a billing threshold under which a customer's monthly bill cannot be further reduced through the application of net metering credits or consumption reductions. Minimum bills differ from other bill mechanisms such as customer charges and demand charges in that they are designed to only impact a limited segment of utility customers, leaving rates and charges for customers who regularly exceed the minimum bill unaltered. Minimum bills are common practice in a range of industries including water, sewage, and telecom. A number of other investor owned utilities, municipal utilities, and states have either implemented or are actively exploring implementing minimum bill mechanisms. Policies that have been implemented range from $10 per month for California's largest investor-owned utilities (PG&E, SCE, and SDG&E) up to $25 per month in Hawaii. These states have some of the most robust solar markets in the United States, suggesting that minimum bills, as implemented, are not fundamentally incompatible with solar market development.

9. A recommendation that the 2017 Legislature consider enabling legislation and to authorize the PUCN to adopt appropriate guidelines to implement community solar (also called Shared Solar, Community Solar Gardens, Solar Gardens) with a focus on expanding solar access to communities of color and low income neighborhoods.

**Background**: The traditional panels-on-your-roof approach to solar simply doesn't work for a majority of Americans. A majority of Americans face physical barriers that keep them from installing solar on their own rooftop. A report from the National Renewable Energy Lab and Navigant Consulting found that 73-78 percent of homes cannot host solar due to tree shading, orientation or other factors. Moreover, 52 percent of residents nationwide live in multi-unit buildings or homes with shared roofs.

Renters have difficulty participating in rooftop solar even if their home is suitable. The sheer diversity of ways in which tenants receive and pay for their electricity makes solar participation complex. Some pay their own utility bills, some share a meter and split payments with other renters, and in other cases the landlord pays for utilities and passes a portion of those costs on to the tenant. In all of these cases, there is a fundamental disconnect between the

entity that would benefit most from the utility bill savings of solar (the tenant) and the entity who would need to make or approve the solar investment (the property owner).

These issues are particularly pronounced for low-income households, which are more likely to live in multifamily housing, have unsuitable roofs or rent their homes. Community solar addresses these barriers by allowing consumers to subscribe to a local clean energy project and receive credit on their utility bills for their portion of the clean power produced. Fourteen states and the District of Columbia have community solar policies in place, and many more are considering programs to expand consumer access to clean energy.

10. A recommendation that the 2017 Legislature consider a bill to authorize the use of uncommitted Renewable Generations funding to promote the implementation of new technologies, battery storage projects, low income residential solar, and community solar gardens as determined in a stakeholder process.

**Background:** The Renewable Generations program was created in 2003 and modified in subsequent Legislative Sessions. The program provides incentives to offset installation costs for solar, wind, and hydro distributed generation systems. Current projections show a surplus of $38.2 million in the Renewable Generations program which could be reprogramed.

11. The New Energy Industry Task Force recommends that the 2017 Legislature consider a bill to incentivize Next Generation Communities (NextGen). The bill will create NextGen communities that are comprised of solely new solar-home and complimented with either large-scale and/or small-scale residential battery storage or a combination of both. The bill would require an investor-owned utility to offer new net metering to customer-generators within a NextGen community in a manner consistent with systems under NRS Chapter 704 as it existed before the enactment of Senate Bill 374 by the 78th Session of the Nevada Legislature and notwithstanding any statute, rule, or determination of any kind by the PUCN to the contrary for a period of five (5) consecutive years. These customers would be grandfathered for 20 years and the rate would run with the home.

NextGen communities are an all-solar community and comprised of twenty solar-homes or more with the solar technology that is incorporated into the building envelope shortly after the construction of the home and uses large and/or small-scale battery technology. The NextGen community automatically qualifies for rebates used to offset a certain percentage of the batteries' cost as determined by a stakeholder process. Funding for the battery rebate program shall come from the RenewableGenerations Program, and funding shall be determined by a stakeholder process for each solar community. The NEM applicant will certify that it is part of a NextGen community in the application process with the utility. The utility shall petition the PUCN for cost recovery of utility-scale batteries. The PUCN shall have 120 days to examine, approve, deny or modify the utility's petition.

Prior to the conclusion of five consecutive years, the PUCN shall review the relevant data to determine the cost savings, if any. The PUCN's analysis shall continue to promote net metering customer-generators in a NextGen community and shall take into account the value of solar and include, but not be limited to: Avoided Energy, Line Losses, Avoided Generation Capacity, Ancillary Services, Transmission/Distribution Capacity, Avoided $CO_2$ Emission costs, Voltage

Support, Avoided Criteria Pollutants costs, Fuel Hedging/Diversity, Environmental costs, Utility Administration costs, Utility Integration costs, and Participant Bill Savings.

**Background:**

Benefits of Proposal

- Transitions an already-evolving grid into a more reliable, resilient and innovative grid;
- Enables new solar home communities to serve a dual function, and provide redispatching function to neighboring communities during outages and/or peak hours;
- Add fuel and generation diversity to a state that is largely relying a single fuel, natural gas, for future generation;
- Continues to facilitate new platforms for new technologies and innovation;
- Reignites an industry that has largely been killed off (e.g., 15 applications for NEM); and
- Increases consumer choice and gets people back to work.