

<b>CLEAN ENERGY SOURCE TAC RECOMMENDATIONS - 09/12/2016</b>
<p>1. The NEITF recommends that the Nevada Division of Environmental Protection (NDEP) reconvene the Clean Power Plan Technical Advisory Group to assist NDEP in the development of a state plan for compliance with the Clean Power Plan that is in the best interests of Nevada citizens and businesses, including exploring Nevada’s voluntary participation in the Clean Energy Incentive Program (CEIP).</p>
<p>2. Based on early technical analyses and presentations made to the Clean Energy Sources TAC, the NEITF finds that Nevada utility customers could benefit from interstate cooperation and participation in regional energy and carbon markets that result in the lowest cost of compliance. Such markets could present opportunities to trade or sell allowances or other compliance instruments thereby reducing costs to Nevada customers. Therefore, the NEITF recommends that NDEP develop a state implementation plan that enables Nevada to trade compliance instruments with other states for the benefit of Nevada customers.</p>
<p>3. The NEITF recommends that the Governor’s Office of Energy continues working collaboratively with western states on regional energy issues that maximize opportunities to advance the development of Nevada’s renewable resources, reduce air pollution, and lower costs for consumers.</p>
<p>4. The NEITF recommends legislation comparable to that passed in New Mexico in 2013, and as presented at the 8/15/16 CESTAC meeting. It should, for any entities providing power to Nevadans, both those existing and those that may provide such services in the future:</p> <ol style="list-style-type: none"> <li>a. Provide for no less than 5% of utility DSM spending, over a three-year horizon, be directed to help low-income Nevadans become more energy efficient;</li> <li>b. Direct the PUCN to utilize the Utility Cost Test in lieu of the Total Resource Cost Test, their current practice.</li> <li>c. Evaluate the utility’s DSM programs’ cost-effectiveness as a whole, so that the entire portfolio passes the Utility Cost Test without individual programs having to meet that standard</li> <li>d. Recover the costs of these programs in a non-bypassable charge that must be assessed by all utility providers.</li> </ol>
<p>5. The NEITF recommends that the PUCN work with the regulated utilities and the Governor’s Office of Energy to develop a state plan and programs to accelerate the adoption of electric vehicles, including recommending any legislative changes needed.</p>
<p>6. The NEITF recommends that the Governor’s Office of Energy work with the Nevada Department of Transportation to propose financial incentives to stimulate the purchase of electric vehicles.</p>

<b>DISTRIBUTED GENERATION and STORAGE TAC RECOMMENDATIONS - 09/12/2016</b>
<p>1. The Task Force recommendation on PACE programs is expanded to include battery storage systems.</p>
<p>2. A recommendation that all energy codes (IECC) adopted after June 1, 2017 have three performance paths: (1) Prescriptive; (2) Performance; (3) Alternative Compliance.</p> <ul style="list-style-type: none"> <li>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;</li> <li>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.</li> </ul>
<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>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:</p> <ul style="list-style-type: none"> <li>i. Avoided Energy</li> <li>ii. Line Losses</li> <li>iii. Avoided Generation Capacity</li> <li>iv. Ancillary Services</li> <li>v. Transmission/Distribution Capacity</li> <li>vi. Avoided CO<sub>2</sub> Emission costs</li> <li>vii. Voltage Support</li> <li>viii. Avoided Criteria Pollutants costs</li> <li>ix. Fuel Hedging/Diversity</li> <li>x. Environmental costs</li> </ul>

<ul style="list-style-type: none"> <li>xi. Utility Administration costs</li> <li>xii. Utility Integration costs</li> <li>xiii. Participant Bill Savings</li> </ul>
<p>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</p>
<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>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.</p> <p>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</p>

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<sub>2</sub> Emission costs, Voltage Support, Avoided Criteria Pollutants costs, Fuel Hedging/Diversity, Environmental costs, Utility Administration costs, Utility Integration costs, and Participant Bill Savings.

**GRID MODERNIZATION TAC RECOMMENDATIONS - 09/12/2016**

1. The New Energy Industry Task Force recommends that the State of Nevada, through the Governor's Office of Energy and other state agencies, will commit to work with the Administration, Department of Defense and various Federal Agencies in partnership on the Section 368 corridor designation process to address renewable energy development and transmission corridor land use requirements, growth priorities, and long-term energy planning needs. In turn, the State of Nevada expects this collaboration to be a cooperative effort and consultation process that is ongoing, substantive, and respectful of Nevada's energy policy priorities and expertise.

2. The New Energy Industry Task Force recommends that the 2017 Legislature consider a funding bill to incentivize one or more demonstration project(s) that integrate distributed energy resources (DER) into Nevada's electric grid using DER resources compatible with a Nevada energy provider's data platform, security, operations and control, communication systems, and interconnection requirements. Distributed energy resources in this context include but would not be limited to energy storage, electric vehicles, renewable generation and other clean energy resources as well as the integration of such resources into microgrids and/or larger systems.

**ADDITIONAL POLICY RECOMMENDATIONS – Senator Spearman**

Expand geothermal energy projects using existing mining resources. Examine potential public and private partnerships, where appropriate, and develop a plan of action to bring closed or closing mines into the New Nevada Energy Industry as part of the state’s renewable energy resources.

**Background:**

Geothermal heat pumps remain an underutilized resource, in part, because the initial investment is significant. Competitive pricing in the fossil fuel industry adds to the static development of geothermal energy as part of a robust and sustainable renewable resource strategy (Shortall, Davidsdottir, & Axelsson, 2015). In addition to addressing environmental concerns and energy independence, developing more geothermal energy projects provides a positive social impact for the surrounding community. Social impact examples include job creation to reduce poverty, revitalizing depressed communities, improvements to education, and infrastructure development (Shortall et al., 2015).

## Clean Energy Sources TAC Recommendations

1. **Recommendation:** The Task Force recommends that the Nevada Division of Environmental Protection (“NDEP”) reconvene the Clean Power Plan Technical Advisory Group to assist NDEP in the development of a state plan for compliance with the Clean Power Plan (“CPP”) that is in the best interests of Nevada citizens and businesses, including exploring Nevada’s voluntary participation in the Clean Energy Incentive Program (“CEIP”).

**Background:** This recommendation came from the CES TAC as part of a policy proposal work session. In February, NDEP convened a group of stakeholder experts to comprise, on a volunteer basis, the Nevada Clean Power Plan Technical Advisory Group (“NVCPP-TAG”) to assist NDEP in developing a state plan, assist with public meetings and provide input on planning from a number of segments of the community. The NVCPP-TAG met once prior to the Supreme Court’s Stay of the CPP, and started important planning work, including discussions of the CEIP, which could provide additional economic opportunities. Nevada was in a very good position to meet interim and final CPP goals prior to the stay, and the continued work of the NVCPP-TAG will not only allow the state to be proactive in its planning for CPP compliance, but continue to move the state toward the clean energy goals set out by the Governors’ Accord for a New Energy Future and Nevada’s Strategic Framework.

Despite the stay of the CPP, many states continue to work on their plans because they feel it is a “prudent step for states that feel they still must plan” for final court determinations upholding the rule. The majority of Western states, for example, that had been attending planning meetings at the Center for the New Energy Economy in Colorado, specifically, ten of these thirteen original Western states, are still planning, in part, because they want to continue to work on a model for carbon trading.

[http://www.eenews.net/interactive/clean\\_power\\_plan/column\\_posts/1060036556](http://www.eenews.net/interactive/clean_power_plan/column_posts/1060036556).

Nevada should continue work on its state plan under the CPP to stay in step with its Western neighbors and be proactive in its energy policy and carbon reduction goals.

2. **Recommendation:** Based on early technical analyses and presentations made to the Clean Energy Sources Technical Advisory Committee (“CES TAC”), the Task Force finds that Nevada utility customers could benefit from interstate cooperation and participation in regional energy and carbon markets that result in the lowest cost of compliance. Such markets could present opportunities to trade or sell allowances or other compliance instruments thereby reducing costs to Nevada customers. Therefore, the Task Force recommends that NDEP develop a state implementation plan that enables Nevada to trade compliance instruments with other states for the benefit of Nevada customers.

**Background:** In February, the Nevada Division of Environmental Protection (“NDEP”) convened a group of stakeholder experts to comprise, on a volunteer basis, the Nevada Clean Power Plan Technical Advisory Group (“NVCPP-TAG”) to assist NDEP in developing a state plan, including discussions of trading mechanisms, assist with public

meetings and provide input on planning from a number of segments of the community. The NVCCP-TAG met once prior to the Supreme Court's Stay of the Clean Power Plan ("CPP"), and started important planning work. Nevada was in a very good position to meet interim and final CPP goals prior to the stay, and in a position to work in a regional market to assist its neighbors with CPP compliance, as well as integrate additional renewable resources into Nevada's energy portfolio. This type of regional energy and carbon markets support the goals of the Governors' Accord for a New Energy Future and Nevada's Strategic Framework.

Despite the stay of the CPP, many states continue to work on their plans, including state trading plans, because they feel it is a "prudent step for states that feel they still must plan" for final rulings upholding the rule. The majority of Western states, for example, that had been attending planning meetings at the Center for the New Energy Economy in Colorado. Specifically, ten of these thirteen Western states, are still planning, in part, because they want to continue to work on a model for carbon trading.

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Nevada should continue work on its state plan under the CPP to stay in step with its Western neighbors, be proactive in its energy policy and carbon reduction goals, and to take advantage of opportunities to trade or sell allowances or other compliance instruments thereby reducing costs to Nevada customers and further developing Nevada's renewable energy resources.

- 3. Recommendation:** The Task Force recommends that the Office of Energy continue working collaboratively with Western states on regional energy issues that maximize opportunities to advance the development of Nevada's renewable resources, reduce air pollution, and lower costs for consumers.

**Background:** This recommendation came from the Clean Energy Sources Technical Advisory Committee ("CES TAC") following both a policy proposal work session and a presentation by California Independent System Operator's ("CAISO") Stacey Crowley, Vice President Regional and Federal Affairs and Phillip Pettingill, Regional Integration CAISO. This recommendation mirrors the broad energy goals set out by the Governors' Accord for a New Energy Future and Nevada's Strategic Framework to become the nation's leading producer of clean and renewable energy. As Nevada's neighbors increase their demand and need for clean and renewable energy as a result of state and federal policies and regulations, Nevada needs to continue to be part of an increasingly regional market to which Nevada can sell its clean and renewable energy resources. Nevada has the opportunity to do this through avenues like CAISO and market trading under the Clean Power Plan.

- 4. Recommendation:** The Task Force recommends legislation comparable to that passed in New Mexico in 2013, and as presented at the 8/15/16 Clean Energy Sources Technical Advisory Committee ("CES TAC") meeting. These recommendations should apply to

any entities providing power to Nevadans, both those existing and those that may provide such services in the future:

- a. Provide for no less than 5% of utility DSM spending, over a three-year horizon, be directed to help low-income Nevadans become more energy efficient;
- b. Direct the PUCN to utilize the Utility Cost Test in lieu of the Total Resource Cost Test, their current practice.
- c. Evaluate the utility's DSM programs' cost-effectiveness as a whole, so that the entire portfolio passes the Utility Cost Test without individual programs having to meet that standard
- d. Recover the costs of these programs in a non-bypassable charge that must be assessed by all utility providers.

**Background:** This recommendation came from the CES TAC following a presentation by Steve Bean of Public Service of New Mexico ("PNM"), the largest investor-owned electric utility in New Mexico.

There is currently a program in Nevada that helps a limited number of low-income Nevadans pay their energy bills when they are unable to do so on their own; however, there are very few resources made available to helping low-income customers become more energy efficient in order to lower their energy bills outright. Thus, low income customers pay a much higher percentage of their available income on energy bills, limiting their ability to buy other goods and services.

The current test used by the Public Utility Commission of Nevada ("PUCN") to evaluate efficiency programs has not appeared conducive to implementing utility energy efficiency programs targeted toward lower-income Nevadans for the following two reasons:

- 1) The PUCN currently uses the "Total Resource Cost Test" (TRC) to evaluate the cost effectiveness of energy efficiency programs. This test is deemed by some utility analysts to not fairly compare a utility's cost of supplying energy with the cost of its saving energy. By not providing a "level playing field" to compare the costs of supply-side resources to the cost of Demand-Side Management (DSM) programs, the PUCN's current policy encourages more energy production than would likely be the case under a different, and more levelized, method of analysis.

This recommendation directs the PUCN to use the Utility Cost Test (UTC), a policy already in place in Utah, New Mexico, and other states, that compares only the utility's cost of saving energy against its cost of supplying energy. This comparison of supply-side versus DSM expenditures could help offset the need for more costly supply-side resources and future power plant construction, benefiting all ratepayers.

2) Under Nevada's policy currently, each individual energy efficiency program must meet the TRC cost test. In the example of New Mexico's legislation, utility energy efficiency programs can be aggregated together to analyze their costs and benefits, so that an entire portfolio of energy efficiency programs are being evaluated for their cost-effectiveness. This opportunity to aggregate program costs and benefits together for evaluation as a portfolio enables more programs for low income utility customers.

The CES TAC noted, in recommending to dedicate no less than 5% of a utility's total energy efficiency program expenditures to low-income customer programs (evaluated on a 3-year basis), that low-income customers have been paying the surcharge on utility bills for energy efficiency programs without having energy efficiency programs available to them.

By enabling low-income Nevadans to access energy efficiency programs, and save on their utility bills, advocates expect additional positive economic effects from this policy as these low-income customers will have additional income to spend outside of their utility bills. One utility study (Entergy 2008) found that each dollar spent on a low-income energy efficiency program generated \$3.90 in positive economic impacts in the local economy.

To facilitate a level playing field in the contingency of retail competition being implemented in Nevada, the recovery of the costs of these energy efficiency programs would be accomplished through a non-bypassable surcharge that must be assessed by all utility providers, both those currently in the Nevada energy market and those which may under under this possible scenario.

5. **Recommendation:** The Task Force recommends that the Public Utilities Commission of Nevada ("PUCN") work with the regulated utilities and the Office of Energy to develop a state plan and programs to accelerate the adoption of electric vehicles ("EV's"), including recommending any legislative changes needed.

**Background:** This recommendation came from the Clean Energy Sources Technical Advisory Committee ("CES TAC") as part of a policy proposal work session, and additional materials presented regarding the electrification of vehicles. This would establish transportation electrification as a state goal and encourage greater utility involvement in expanding the deployment of electric vehicles. This recommendation recognizes that there is a public interest in expanded use of EV's, and that it supports the goals of the Governors' Accord for a New Energy Future and Nevada's Strategic Framework. Additionally, discussions in the CES TAC recognized that tailpipe exhaust from Internal Combustion Engines now comprises a significant portion of Nevada's carbon emissions, which can be reduced by using electricity as a fuel. The CES TAC heard studies specifically addressing pollution from vehicles in Clark and Washoe counties that indicated electric vehicles substantially reduce emissions of carcinogenic

Volatile Organic Compounds and Nitrous Oxide, both of which are ozone precursors, a topic of increasing importance to both counties. The CES TAC also heard economic analysis that indicated that by reducing the importation of gasoline into Nevada, EVs offer an avenue to create jobs and boost Nevada's economic output. As such, this recommendation directs the PUCN and the Office of Energy 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.

An electric vehicle plan may include investments in or customer rebates for charging infrastructure, in a manner that stimulates competition and customer choice in charging infrastructure; appropriate tariffs for both consumer electric vehicles and heavy duty electric vehicles; consumer or midstream vehicle incentives; and a plan to market the benefits of electric vehicles. The PUCN would review any submitted plan to determine if it is reasonable and will benefit all of its customers and review how costs of the implementation of the plan shall be recovered. Similar legislation passed earlier in 2016 in Utah and Oregon. Increasing the adoption of electric vehicles falls squarely within the Governors' Accord for a New Energy Future and Strategic Framework, and in particular work in synergy with the completion of an "electric highway" system to serve the entire state. More specifically, the Accord calls for Nevada to encourage clean transportation options by supporting automakers' market expansion for these new vehicles to expand consumer choice, lessen dependence on petroleum and reduce pollution. By supporting needed infrastructure development, incentives and policies when appropriate, Nevada will encourage expanded use of these new technologies. Additionally, the Strategic Framework, goals, specifically, 7.2.3 which seeks to reduce carbon emissions to a level at or below accepted federal standards, and, currently, one of Nevada's most significant sources of carbon emissions is tailpipe emissions.

- 6. Recommendation:** The Task Force recommends that the Office of Energy work with the Nevada Department of Transportation ("NDOT") to propose financial incentives to stimulate the purchase of electric vehicles ("EV's").

**Background:** This recommendation came from the Clean Energy Sources Technical Advisory Committee ("CES TAC") as part of a policy proposal work session, and earlier materials presented regarding the electrification of vehicles. This recommendation creates consumer financial incentives for EV's. 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 EV sales. Nevada could create a state sales tax rebate, with a cap, for example at a maximum of \$2,500 per vehicle. Based on 2015 Nevada EV sales, and assuming this would increase sales an additional 50% on average, the cost to the state could be approximately \$2.25 million per year. In order to limit this ongoing cost impact, the tax credit or point of sale rebate program could have a sunset provision, for example be in effect for four years between 2017-2020, and/or be capped at a certain number of EV's entering the market. Increasing the adoption of EV's falls squarely within the Governors' Accord for a New Energy Future and Strategic Framework, and in particular works in synergy with the completion of an "electric highway" system to serve

the entire state. It aligns with the goals of the Accord's call to encourage clean transportation options by supporting automakers' and fueling companies' market expansion for these new vehicles to lessen dependence on petroleum and reduce pollution. By supporting needed incentives Nevada will encourage expanded use of these new technologies. It also supports the Strategic Framework goals, specifically, 7.2.3 which seeks to reduce carbon emissions to a level at or below accepted federal standards, and, currently, one of Nevada's most significant sources of carbon emissions is tailpipe emissions.

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## **Distributed Generation and Storage TAC Recommendations**

1. **Recommendation:** 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. **Recommendation:** 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. **Recommendation:** 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 load-serving entity or local publicly owned electric utility, a customer of a load-serving 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. Recommendation:** 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. Recommendation:** 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. **Recommendation:** 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<sub>2</sub> 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. **Recommendation:** 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 rate structure or compensation rate set by the PUCN.

8. **Recommendation:** 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. **Recommendation:** 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. **Recommendation:** 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. **Recommendation:** 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 CO2 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 the proposal include the following:

- 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.

## **Grid Modernization TAC Recommendations**

1. **Recommendation:** The New Energy Industry Task Force recommends that the State of Nevada, through the Governor's Office of Energy and other state agencies, will commit to work closely with the Administration, Department of Defense and various Federal Agencies in partnership on the Section 368 corridor designation process to address renewable energy development and transmission corridor land use requirements, growth priorities, and long-term energy planning needs. In turn, the State of Nevada expects this collaboration to be a cooperative effort and consultation process that is ongoing, substantive, and respectful of Nevada's energy policy priorities and expertise.

**Background:** The State of Nevada is aware that the Bureau of Land Management (BLM) and the U.S. Forest Service (FS), with technical input from the Department of Energy (DOE), will be responsible for potential (re)designation and revision of Section 368 energy corridors and for the incorporation of those designated energy corridors into land use plans. As Nevada seeks to expand the development and use of clean renewable energy resources, the construction and maintenance of a robust and well connected electricity transmission infrastructure has become critically important and represents a key energy policy priority for the State. The high percentage of federal land under various agency jurisdictions in Nevada also requires close state and federal cooperation on all matters which can impact large-scale clean energy project development and implementation.

2. **Recommendation:** The New Energy Industry Task Force recommends that the 2017 Legislature consider a funding bill to incentivize one or more demonstration project(s) that integrate distributed energy resources (DER) into Nevada's electric grid using DER resources compatible with a Nevada energy provider's data platform, security, operations and control, communication systems, and interconnection requirements. Distributed energy resources in this context include but would not be limited to energy storage, electric vehicles, renewable generation and other clean energy resources as well as the integration of such resources into microgrids and/or larger systems..

**Background:** Distributed energy technology continues to evolve and become more competitive in price. As these technologies shift and change, the ability to integrate them seamlessly into the existing Nevada grid becomes more challenging. Pilot projects will assist Nevada's energy providers to better understand these challenges and help them plan and enhance their systems to more appropriately accommodate these resources going forward.