STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

NEW JERSEY 2019 ENERGY MASTER PLAN: Clean and Reliable Power Discussion

New Jersey Solar Energy Coalition Responses to Discussion Questions

About NJSEC:

The New Jersey Solar Energy Coalition is composed of a diverse group of firms involved in all facets of the solar industry. Our members include accounting firms, engineering firms, and law firms specializing in this renewable energy resource along with SREC market traders, project developers, material vendors, and firms that provide both the capital and financing to make it all work. NJSEC seeks to provide public policy support for New jersey's solar industry through legislative and regulatory advocacy, outreach, education, and the development of policy alternatives that align with the fiscal and social circumstances unique to New Jersey. NJSEC has worked successfully to help develop public policy that works for New Jersey by understanding the rhythms of the state and the careful social. economic and environmental balance that must be achieved.

Discussion Points

General

1. For the purposes of the Energy Master Plan (EMP) and reaching Governor Murphy's goal of 100% clean energy usage in New Jersey by 2050, how should clean energy be defined?

While it is clear that the 2030 goal of 50% renewable energy usage is attainable, the technology to achieve 100% renewable energy by 2050 will depend largely upon technological advances in areas of battery storage, energy efficiency gains and other areas needed to support this goal. It is important, therefore, to define clean energy in a broader context in order to exploit opportunities with existing technologies and to allow new and emerging technologies to be defined as renewable.

There are existing technologies that will reduce carbon production and increase energy efficiency during our transition to 100% renewable. For example, Combined heat and power facilities and fuel cells while not defined as renewable resources can make a significant contribution toward our goals with proven existing distributed energy technology that is a cleaner alternative to coal during this transition. These resources need to be supported more fully in order to seize

these benefits until such time as more technologically advanced renewable energy schemes can be devised. We believe, therefore, that placing a strict limitation on the definition of clean energy sacrifices good in the pursuit of perfection. Simply put, renewable should be defined as not requiring fossil fuel for electric generation.

2. Should the definition of clean energy contain flexibility between now and 2050 to allow for transitional fuels to be used and phased out over time? What intervening steps should be taken to complete the transition?

Clearly, the abundance of low-cost natural gas coupled with its relatively clean burning characteristics will be needed as a transitional resource over the next several decades. It must be recognized however that the sustained low cost of this fuel, while good for the consumer, is frustrating to the development of renewable energy resources. Transitional fuels can be helpful in the path to 100% clean energy, but it should be in support of clean energy. That support should not be confused with transitional energy sources such as natural gas being clean energy. While a definition of clean energy should be broad and flexible, it should also not be so broad as to include energy sources that emit harmful amounts of greenhouse gas emissions. New Jersey's reentry into the regional greenhouse gas initiative is a positive step to helping rebalance energy economics. We should also be looking to the federal government for leadership in instituting a carbon tax on a national level.

3. What is the most significant obstacle to getting to 100% clean energy by 2050? How can the state address it?

With the continued development of New Jersey solar energy resources, achieving the 3500 MW of offshore wind and, the purchase of out-of-state land-based class I certificates will together serve to accomplish the administration's goal of achieving 50% renewable energy by 2030. However, the remaining 50% will be far more difficult to achieve. It will require significant cost and the further development of advanced technologies – particularly in the area of battery storage. There is very little that the state of New Jersey can do by itself to significantly influence these areas of technological change.

However, as the industry advances its technology New Jersey can address several challenges clean energy faces in parallel. Clean energy needs to be deployed and online to match energy load, especially during peak load periods. Project siting will become a greater issue, as there will need to be technological advances to deploy energy sources like solar on the built environment (ie. rooftops not originally

designed for solar) in a cost-effective manner. Additionally, the goal of 100% renewable deployment will require deployment of large scale solar and expanding the types of land that may be used for renewable technology to include farmland and forested areas will be a key component of reaching these goals. This will allow for significantly lower cost of construction, meet land requirements to reach the RPS goals – there is no path to 100% with solar being limited to brownfield, parking lots, and rooftops, and in some cases the ability to move the project close to customer loads.

Lastly, investment in energy efficiency to reduce peak demand and thereby reducing the capacity targets for 100% renewable will be required.

Transition and Technology

4. How can the State immediately begin to transition to clean energy production and distribution? What intervening steps should be considered to clean existing technology? How should stranded costs be addressed?

Utility interconnection costs continue to rise in New Jersey as a renewable energy penetration picks up a larger and larger share of distribution circuits. State policies that encourage utility investment in distribution infrastructure that will support distributed generation from renewable resources will be vital to continue development in this transitional period.

5. How should the state analyze the construction of additional fossil fuel infrastructure during the transition? How can the state plan to accommodate this infrastructure in both its short-term and long-term clean energy goals? What statutory or regulatory changes will be needed for the state to make and implement these determinations?

Merchant generation on a large scale should be the last option considered. Combined heat and power facilities should be favored in view of the substantial energy efficiency gains and reduced carbon that results from implementation of these resources. There should be a particular effort to engage in “peak shaving” where the peak load decreases and flattens. That will not only reduce the need for older, dirtier peaking power plants, but it will fundamentally reduce the need for additional fossil fuel infrastructure. Utilities and balancing authorities plan to meet a system’s maximum needs plus excess capacity to address reliability concerns. A flatter state load curve will require less generation capacity overall. That will mean that new clean energy generation will meet a higher percentage of the state’s electricity needs in a shorter time.

6. How should the state invest in and encourage innovative technologies for renewable energy and energy efficiency?

The state should allow clean energy facilities to be compensated for grid services that they provide – especially clean energy generation that is paired with energy storage. There is a wide range of clean energy and electric grid technology currently being invested in the private sector, however there is additional work to be done to bring these products to market and be commercially viable. Regulatory reform that allows distributed generation (with or without paired storage) to earn revenue beyond energy sales can be a key step towards commercializing new electric grid technologies.

State Policy

7. Evaluate existing clean energy policies and programs: where are they most/least effective, and are they aligned with the 100% clean energy by 2050 goal? If not, what modifications can be made, if any?

The current solar renewable energy credit program has been among the most successful and effective programs ever undertaken by the state of New Jersey, deploying roughly 3 GW of solar capacity in the state. While the continuing changes to the core structure of this program continues to demand our attention to modifying the metrics accordingly, no state program nationally can as yet be pointed to as a model that could be effectively introduced in New Jersey in the near term. While we should continue to evaluate alternative models as they are proven, we would be jeopardizing the jobs of 7000 New Jersey families if we move precipitously to an unproven platform. If we are to achieve our goals in both 2030 and 2050 the state must move in a deliberative fashion that will continue to give investor's confidence that New Jersey is fair about providing

reasonable opportunities for a return on investment and that New Jersey is committed to renewable energy over the long term.

One of the least effective clean energy policy models for distributed generation is the procurement model. It stifles project volume, and deployed capacity, because it creates roadblocks for clean energy developers to participate. Homeowners cannot take advantage of procurements and choose to avoid the hassle of such auctions. Companies who are interested in going solar, for example, also can be dissuaded because procurements create risk and uncertainty. Consumers do not know how they can save money on their energy bills. There is an unclear financial value proposition.

8. How should the state integrate low use property, such as brownfields and blighted zones, into new clean energy economy development?

Clearly, brownfields, landfills, and other low use properties have been and continue to be attractive locations for solar energy deployment. While land-based wind can be considered, it is unlikely that many of these properties would have suitable wind resources for active consideration. And, given the amount of parking lots and low-density commercial development, the state should also investigate how to maximize the potential of parking lots to host clean energy generation. Solar carports are already online in New Jersey and other major solar markets, but these are among the most expensive types of solar development (due to the additional structures required to build over parking spaces).

9. How should the state address the baseload needs v. intermittent elements of clean energy generation? What is the role of energy storage in the conversion to 100% clean energy?

Battery storage currently represents one of the few resources available to "firm" the intermittent nature of clean energy generation. Simply stated, without a robust infrastructure of energy storage the transition to 100% clean energy is not possible.

Planning and Zoning

10. How can clean and reliable power support the expansion of clean transportation?

Electric vehicles, and in particular electric buses and other electrically powered mass transit vehicles are vital to our goal of reducing carbon and achieving our clean energy goals in the future. We are in the early stages of developing electric vehicle goals and charging strategies for New Jersey, but clearly these efforts will go a long way to achieving our goals. Clean energy generation paired with storage can also be deployed for mass transit, such as NJ Transit. This can help with load reduction, voltage regulation, and other electricity-related costs.

11. Is there a role for communities in local energy planning and, if yes, what should it be? Are there opportunities for public-private partnerships to aide communities undertaking this planning?

Local communities can clearly take a leadership role in energy planning on a local level. Municipal government account aggregation as has been provided for in the new law needs to be further explored with pilot programs that will engage local communities on a more active level in creating renewable resources to help service their communities' electrical needs. There are many opportunities for public-private partnerships to assist in the development of these projects. Municipal governments can also proactively plan for hosting local solar systems on open land, if desired.

12. What portfolio mixtures can the state utilize in achieving its 100% clean energy goal? What can a transition portfolio mixture resemble in 2030 and what portfolio mixtures can the state utilize in 2050?

The state needs to embark on a comprehensive resource analysis in order to set a transition portfolio mixture to achieve the 50% goals by 2030. This includes not only fuel diversity, but a diversity of clean energy system sizes. Large-scale clean energy systems that are interconnected to transmission offer a different, but overlapping, set of benefits to the grid and public to smaller, distributed generation systems. Due to the significant requirement for advanced technologies in moving from the 50% to 100% goals it is difficult if not impossible to offer any opinion regarding a transitional resource analysis that far into the future.

13. Should changes be made to zoning and planning laws and requirements to allow for the development of clean energy generation?

Zoning and planning laws need to be as flexible as possible and recognize the inherent benefits in the development of renewable technology. More importantly however municipalities and counties need to recognize the significant impact that local permitting cost and delays have on the development of these renewable resources. These costs and delays are becoming significant problems to the deployment of solar energy in particular in the state of New Jersey. This area needs to be addressed as soon as possible particularly in view of the need to develop these resources at the lowest possible cost to New Jersey ratepayers.

Economic Growth and Workforce Development

14. How should the state address the workforce development needs associated with the transformation to 100% clean energy?

Grow New Jersey programs that provide for tax credits and other incentives for the creation of new employment opportunities need to be targeted to firms that specialize in the development of these renewable resources. Grants can also be offered to community colleges within the state to offer training courses and certification programs for clean energy careers.

15. How can the transition to 100% clean energy grow New Jersey's economy and create new innovative and high paying careers for New Jersey residents?

Most importantly, New Jersey now spends more than $100 million annually out of state to support high-paying jobs in the creation of renewable energy in other states. Our new law will increase that spend by $50 million in 2025 assuming that the market price of class I renewable energy credits remains constant. If the state of New Jersey wants to grow its economy and create new high-paying renewable energy jobs it needs to significantly reduce the flow of these ratepayer dollars out of state. It is time that New Jersey continues to pay only its rightful share of carbon reduction within PJM and not shoulder more than 50% of the responsibility for all PJM member states.

16. How can the State encourage, require, or otherwise develop a robust supply chain for all clean energy industries?

No opinion.

Environmental Justice

17. How will the State consider and integrate overburdened communities into clean energy advancements?

18. What efforts are most successful towards making clean energy and energy efficiency measures affordable and accessible to all?
19. How can the state play a role in ensuring that disproportionately impacted communities receive opportunities and benefits connected to the clean energy economy?

17., 18, & 19. In order to encourage renewable energy development in low- and moderate-income communities, the state should consider modifying the current solar energy renewable credit system to include factoring that would increase the value of the solar energy renewable credit when generated at a location within these communities. This could go a long way to create the incentives necessary to provide an economic advantage to locating these facilities in these communities.