

I/M/O DRAFT 2019 NEW JERSEY ENERGY MASTER PLAN

POLICY VISION TO 2050

JUNE 10, 2019

COMMENTS OF THE NEW JERSEY LARGE ENERGY USERS COALITION

These Comments are presented on behalf of the New Jersey Large Energy Users Coalition (“NJLEUC”) regarding the Draft 2019 New Jersey Energy Master Plan (“Draft EMP”). NJLEUC appreciates the opportunity to provide the following observations for consideration by the Governor’s Office, Board of Public Utilities and other agencies that are responsible for the Final Energy Master Plan and its implementation.

The Draft EMP has variously been described as “bold”, “comprehensive” and “ambitious”. It is all of these things and more. Taken together, the proposed recommendations are truly breathtaking in scope, and have the potential to cause a seismic shift in how we generate, distribute, consume and conserve energy, how we work and how we conduct our daily lives. The Draft EMP adopts a sweeping and holistic approach to a host of policy issues to be addressed as part of a comprehensive response to the challenges of global climate change.

NJLEUC members share the concerns expressed regarding the threats associated with climate change, and the need to limit the state’s carbon footprint and control the emission of greenhouse gases and other harmful pollutants. We fully understand the challenges that lie ahead and support the State’s efforts to address those challenges. NJLEUC’s members were among the first in the State to develop renewable energy resources and to pursue energy efficiency and other usage and demand reduction initiatives in an effort to reduce their carbon footprint, improve and modernize their energy infrastructure and reduce energy costs. As early adopters of solar generation and sophisticated energy efficiency and carbon reduction techniques, NJLEUC

members have been at the forefront of the development of responsible energy initiatives that promote clean energy and reduce energy usage, peak demand and greenhouse gas emissions.

Given our extensive background and knowledge of the energy markets, we could provide a valuable resource to the Administration in this process. Our collective knowledge could be particularly useful to the State as it was gained through the actual experience of sophisticated energy managers for some of the State's largest businesses, as well as two decades of experience with a broad range of energy regulatory issues. Because of our extensive "hands-on" experience with energy issues, NJLEUC is uniquely qualified to provide valuable input to those tasked with the development and implementation of the State's energy goals and we are willing to do so.

We stand ready to actively assist the Administration in pursuing viable energy goals that properly balance the interests of all stakeholders, and establishing effective paths to achieve those goals. We recognize that the implementation of the EMP will require a considerable and prolonged effort to assure its success and we are prepared to roll up our collective sleeves to be an active and integral part of that effort. We encourage you to foster maximum opportunities for ongoing stakeholder input into the EMP process as it evolves so that the State can avail itself of the collective knowledge, wisdom and experience that our members and the resources available to us and others can contribute to this worthy effort.

We offer the following initial comments regarding the Draft EMP to reflect our views regarding the development of responsible energy policy goals and effective means to achieve them.

The EMP and New Jersey: The Need to Achieve an Appropriate Balance

Given the momentous changes the EMP would bring to New Jersey, it is important for the EMP to be developed and implemented in a manner that will maximize the benefits of a clean

energy economy without causing disruption to our energy infrastructure and the business community, or imposing inordinate financial burdens on ratepayers. Implementation will necessarily occur over many years, during which time new storage, metering and smart grid technologies will be introduced, improved and integrated into the State's energy infrastructure. The State and national economies will vacillate, as will the ability of our citizens to adapt to and incorporate the proposed energy initiatives. The EMP should take these and other market forces into account and be crafted and implemented as a "living" document, adaptable as necessary to changing market and economic conditions and, in particular to the realities of the demographics, populace and politics of New Jersey.

While the proposed goals of the Draft EMP are commendable, it is important that the goals that are finally established, and the paths chosen to achieve them, be realistic and sufficiently flexible to enable the State's energy policies to develop and evolve over time, as the State weighs its ability to tolerate change and adapt to the new energy paradigm. In particular, it is important that our citizens be receptive to change and to be willing and active participants in the process. The State must not only maintain active and ongoing communication with all stakeholders, through meaningful stakeholder processes, to secure their input and acceptance of these initiatives, but also be sensitive to feedback that may challenge the State's assumptions or information that provided the basis for the EMP initiatives.

The State must also be circumspect in establishing the EMP's various goals, tempering them when necessary to conform to market, economic, stakeholder and other realities that influence whether or to what extent the goals can be achieved. Of equal importance is the need to establish a clear pathway and plan of action to achieve each goal. The State should avoid the temptation to establish lofty goals that are unlikely to be achieved in the near or long term, but

should focus instead on realistic goals that are achievable and supported by those who will be affected by them.

There will no doubt be considerable public support for initiatives designed to combat climate change in the current environment. This is as it should be, as we are confronted with a very serious issue that requires a serious response. Numerous commenters have already made known their strongly-held beliefs that the Draft EMP does not go far enough and should, among other things, implement an immediate ban on all fossil fuels and fossil generation, and direct that New Jersey Transit be powered by solar generation. However great the temptation to accommodate these interests and adopt the strong measures they advocate, it is critical that the EMP adopt a more reasoned and realistic approach to the issues at hand, particularly during the transition to a clean energy economy during which the continued reliability of our energy infrastructure will be a critical concern. We must be able to assure that the lights will continue to go on when we flip the switch, the trains will continue to run when the sun doesn't shine and that our citizens and businesses will be financially, technologically and temperamentally able to absorb the EMP's initiatives.

While fossil fuels may be out of favor, the fact remains that continued reliance on natural gas will be necessary in the near and long term to maintain the reliability of the power grid. Solar penetration is currently at about 5% of total generation, energy storage technologies are still in their incipient stages of development, wind power is years away, and many policy issues addressed in the Draft EMP, including the future role of the utilities and the nuclear plants, will take years to resolve. At the end of the day, the development of the Final EMP and its implementation will require that certain realities be acknowledged, certain assumptions be challenged, certain goals be modified and the various policy issues addressed in the EMP be continually reviewed. It will also

require the active input of all affected stakeholders, and the State should facilitate active and ongoing stakeholder processes so that all issues are resolved in an informed and responsible manner.

In these comments, NJLEUC will provide observations regarding some of these issues and discuss the facts and circumstances we believe should be taken into account when resolving them. We would be happy to provide further information and thoughts regarding these subjects.

Expansion of the Renewable Portfolio Standard

The Draft EMP sets forth the goal to achieve 100% clean, carbon neutral electric generation by 2050. While NJLEUC supports the goal of clean energy, the goal must be viewed pragmatically, through the prism of market realities and known constraints. One such reality is that although our solar program is now almost two decades old, has cost hundreds of millions of dollars to date to implement, and currently costs about a half a billion dollars annually to support, solar resources currently generate only about 5% of the total electricity generated within New Jersey. It is fair to state that the introduction of solar and other renewable generation has been a slow and expensive process, this despite the fact that our solar program is one of the most successful in the country.

A fair question is therefore presented how the renewable energy penetration rate is reasonably expected to increase to the projected 21% rate by 2020—one year from now-- particularly given that the approved offshore wind resources are not projected to be in commercial operation until 2023. Achieving the near term expedited RPS goal would appear to be a daunting task, particularly given the Draft EMP's acknowledgement that the current RPS is being satisfied, in part, through the purchase of renewable energy certificates for out-of-state generation. This fact should fairly cast doubt on whether the State will have the ability to so dramatically increase its

production of renewable energy in a single year and whether the utility distribution systems have the current and near term capability to incorporate significant additional intermittent power generated within their service territories.

It goes without saying that New Jersey's ability to achieve the EMP's 2020, 2030 and 2050 RPS goals will be determined in large measure by the State's demographics and political culture. We are a small, densely populated Northeastern state with inconsistent weather patterns, limited open space, restrictive land use and municipal zoning laws, and have enacted statutory and other restrictions applicable to large solar installations and the areas where they may be located. (*See, e.g. N.J.S.A. 48:3-87(s)*). There exist only a finite number of landfills, brownfields, residential and commercial properties and rooftops that are capable of housing solar arrays. It is also assumed that as SRECs are phased out, the financial incentives available for residential roof top solar installations will be reduced, which has the potential to make solar less attractive to homeowners.

Similar conditions in other states have created unanticipated impediments to clean energy initiatives developed to satisfy similar energy goals. For example, in Massachusetts, local authorities denied permits for underwater transmission cables needed to serve the Vineyard Wind offshore wind project, while local opposition caused the denial of other transmission projects that were viewed as detrimental to the local tourist industry. In California and Washington State, clean energy projects have been subjected to rigorous scrutiny by local authorities charged with enforcing land use and municipal zoning requirements. The recent New York law that adopted aggressive clean energy goals apparently did not amend the laws relating to the siting of electric generation facilities, thus enabling local zoning authorities to continue to exercise broad approval authority over proposed energy projects.

New Jersey has had a similar history with occasional dissonance between local zoning laws and statewide energy policy. For example, utility transmission projects are commonly opposed by local residents who would be affected by the proposed lines, causing transmission projects to become political “hot potatoes” that are not favored by local zoning boards. N.J.S.A 40:55D-19 was enacted to enable aggrieved utilities to appeal the denial of such matters to the Board, which is empowered to overrule the local boards and authorize projects that are found to be “necessary for the service, convenience or welfare of the public”.

However, even at the Board level, the disposition of transmission line matters has been mixed. For example, although there appeared to be little question regarding the need for the Susquehanna-Roseland Transmission Line in light of NERC’s dire predictions of impending brownouts and blackouts, local opposition to the line was strong and protracted litigation resulted. In addition, due to the interstate nature of the line, several additional approvals were required, including one from a reluctant Delaware River Basin Commission to traverse the Delaware Water Gap. While the Board ultimately found that the line was necessary, the various approval processes caused construction of the line to be delayed for a prolonged period of time. More recently, JCP&L’s petition for approval of the Monmouth County Reliability Line was rejected both at the local level and by the Office of Administrative Law and Board. The disapproval of the line was the result of severe local opposition by residents and their elected representatives due to the intrusiveness of the line through a densely populated residential area and the utility’s failure to affirmatively demonstrate that the line was needed under the relevant standards.

Against this background, there is good reason to question the validity of the apparent working assumption of the Rocky Mountain Institute (“RMI”) Integrated Energy Plan Modeling Scenarios that New Jersey can easily double our interstate transmission system capacity from 7

GW to 14 GW to import additional Midwestern renewable energy needed to satisfy the expanding RPS requirements. Given the difficulties in approving past transmission lines, and in particular interstate lines like Susquehanna-Roseland that traverse the Delaware Water Gap, it can reasonably be questioned whether transmission development on such a mass scale would be tolerated at the local or state levels, recognizing as well that approvals will also be required from all intervening states, which may or may not be inclined to expand the transmission lines within their boundaries, particularly if their purpose is largely to benefit New Jersey, and PJM must be actively involved in planning all needed upgrades.

Moreover, at an assumed average cost of \$2 million per mile to install the additional transmission lines, assuming all necessary approvals are obtained and regulatory issues resolved, it is likely that such an undertaking would entail considerable costs that would be incremental to the costs associated with the very active transmission development that has occurred in recent years within New Jersey. PSE&G's transmission projects alone have resulted in a more than 450% increase in its transmission rates in recent years. Given the distance that renewable energy from the Midwest would have to travel to get to New Jersey, it is fair to question whether the power would be deliverable at a cost that is reasonably economic. We therefore strongly support the thoughts expressed in the Draft EMP regarding the potential for the State to assume a greater role in assessing the need for and siting of transmission, perhaps through a renewed certificate of need-type requirement.

Here, as elsewhere, there is a limit to what ratepayers will be able to tolerate. This is particularly so where initiatives like RPS expansion require significant transmission costs to be incurred to facilitate the importation of out-of-state renewable generation--assuming that sufficient generation is under contract or sufficient RECs are created--and available for consumption in New

Jersey. While we do not question the environmental benefits associated with this clean generation and its favorable downstream impact on New Jersey air quality (assuming that the intervening states also adopt clean energy goals consistent with New Jersey's), the fact remains that this arrangement will result in New Jersey ratepayers providing significant subsidies that support economic activity in other states, diverting dollars that could otherwise be invested in New Jersey. The Final EMP must therefore take the practical, legal, regulatory and financial implications of these proposals firmly into account if it is to foster RPS policies that are both reasonable and prudent and achieve their intended purpose.

Role and Treatment of the Utilities Going Forward

i) Transition in Role

The Draft EMP contemplates dramatic shifts in the role of the electric utilities and how they will be compensated for the modified services they will provide in the future. The Draft EMP also contemplates significant upgrades to, and modernization of, the utility distribution and transmission systems to support the EMP's other initiatives, including the electrification of building and transportation sectors and integration of additional renewable generation and distributed energy resources.

Despite the brevity of the treatment given to this issue in the Draft EMP, the proposed transition of the utilities to function as "platforms" and "air traffic controllers" for distributed resources and renewable generation would be tantamount to a second restructuring of the electric industry, analogous to the New York "Reforming the Energy Vision" (REV) proceeding and the restructuring proceedings that occurred in New Jersey from 1995 to 2002. The role of the electric utilities would essentially change from distribution companies that largely deliver grid-based

power to function, in part, as active and indifferent “enablers” of various forms of distributed generation, microgrids and other energy sharing arrangements such as community solar. We note that the future role of the natural gas utilities is not addressed, but will obviously be a significant topic of conversation as the State implements its 2050 clean energy goals.

As was the case with the electric and gas industry restructuring that occurred during the Whitman Administration, the transition of the electric utilities as envisioned in the Draft EMP will require the resolution of a multitude of issues, many of which may be unanticipated at this point. The most difficult of these issues will be the development of new methods to compensate the utilities, which will be necessary to overcome the utilities’ current resistance to the expanded use of distributed energy resources, including microgrids, as contemplated by the Draft EMP.

We caution the State against the adoption of general rate decoupling or lost revenue devices that would credit the utilities for energy efficiency outcomes that were not caused by utility actions, and provide guaranteed revenues and windfalls to utility shareholders. Instead, the utilities should be compensated only for the services they provide and outcomes they achieve, and made whole only for actual losses sustained as a direct result of utility actions taken in furtherance of particular EMP initiatives. No credit should be afforded for exogenous events such as changes in the economy, the efforts of third parties or other causes unrelated to utility action. We note that electric utility rate decoupling and efforts to obtain similar forms of guaranteed revenue recovery have been highly controversial for more than a decade, remain unresolved and will continue to be strongly opposed by ratepayers.

ii) Infrastructure Upgrades

To the greatest extent possible, utilities should continue to be encouraged to upgrade their distribution infrastructure in the normal course, as part of their continuing obligation to provide

safe, adequate and proper service, and to recover their costs through base rates, as opposed to accelerated rate recovery devices that increase costs and shift project risks to ratepayers. There is no legal or policy reason that prevents utilities from implementing needed upgrades to their systems when appropriate, and this includes automation systems and smart meters that replace standard meters that have reached the end of their useful lives. These upgrades should also be subject to appropriate prudence review to assure that they are necessary and appropriate and to avoid the unnecessary creation of stranded costs.

NJLEUC supports the EMP's call for utilities to develop Integrated Distribution Plans ("IDPs"), which would assist in the identification and prioritization of proposed grid upgrades and opportunities to integrate distributed generation resources. We have already seen instances where utility infrastructure filings have progressed far beyond addressing high priority post-Sandy system hardening initiatives such as replacing flooded electric substations and at-risk distribution wires, and have entered the realm of billion dollar "nice to have" projects that cannot be justified as necessary, let alone as priorities. Given the many billions of dollars that have already been invested in these systems, care must be taken to critically study and authorize only meritorious "must have" projects that are required to achieve specific EMP goals, as it is clear that the further hardening and modernization of the electric utility delivery systems, if not closely monitored and controlled, could cost tens, if not hundreds of billions of additional dollars.

It should be noted that these costs will likely be exacerbated by the creation of new classes of stranded costs, as groups of existing assets in utility rate base are eliminated or retired prematurely. As was learned in the last electric restructuring proceeding, stranded costs can be considerable (about \$3 billion in stranded costs were paid) and these costs weigh heavily on utility rates for extended periods of time. This consideration further underscores the need for extensive

application of IDPs and other infrastructure studies to properly prioritize projects, consider all available alternatives, conduct appropriate cost-benefit analysis and, generally, control these costs to the greatest extent possible.

A further stranded cost question will be presented with regard to the State's natural gas utilities and gas infrastructure generally. As the State transitions towards the electrification of the building and transportation sectors and away from reliance on fossil generation and the use of fossil fuels generally, the issue of gas utility stranded costs will become a significant issue, given the "regulatory compact" that exists between these utilities and the State for the provision of gas service. The gas utilities will not simply disappear, and the creation of well-devised compensation and transition plans will be necessary, ideally through a formal stakeholder proceeding. We note that the Draft EMP is silent with regard to the treatment to be afforded to the natural gas utilities.

iii) Role of Utilities in Delivering EMP Programs

Recently, PSE&G sought to implement an expansive energy efficiency program that was intended to substitute for the programs currently offered by the BPU's Clean Energy Program. PSE&G also sought authorization to be the exclusive provider of energy efficiency programs within its service territory. The PSE&G proposal was strongly opposed by NJLEUC, Rate Counsel and BPU staff, among others, and we continue to strongly argue against the adoption of such an approach.

NJLEUC notes that the programs discussed in the Draft EMP are broad-ranging and will require an "all hands on deck" approach to implementation. Particularly as it relates to energy efficiency programs, it is essential that existing and future programs take various forms and should be implemented through multiple parties, with no "exclusives" given to any party. This will help to insure that all competitive and other delivery options are thoroughly exploited, and that only

meritorious programs proven to be cost effective will be pursued by the party(ies) best suited to deliver them efficiently and at the lowest possible cost.

There should be no question that energy efficiency programs can be designed to essentially pay for themselves through the savings achieved from energy efficiency projects. The self-funded approach should be emphasized as much as possible, as it is without question the most effective way to reduce energy usage without burdening ratepayers. Utility programs that rely on high returns on equity, costly administrative fees, vendor markups and accelerated cost recovery mechanisms should not be favorably viewed as high costs are hard to justify in this context. Alternatives to utility financing of programs, such as the use of a Green Bank, revolving funds and public-private partnerships, should be encouraged to minimize program costs.

As contemplated by the Clean Energy Act, all energy efficiency programs should be evaluated for effectiveness, using common metrics, and only programs demonstrated to produce positive results, justified through rigorous cost-benefit analysis, should be approved. Both utility and Office of Clean Energy programs should be evaluated using the same common metrics, an exercise that has not occurred to date. Based on this analysis, determinations should be made regarding which programs to continue in current form, which should be continued but modified, which new programs offerings to pursue and which programs should be abandoned.

Preference should also be given to approaches like that in the Energy Savings Improvement Programs (ESIP) law which promotes self-funded energy efficiency programs that do not require up-front capital contributions from eligible participants. As it is universally acknowledged that energy efficiency programs can be self-sustaining and provide the most “bang for the buck”, it should be unnecessary and inadvisable to pursue energy efficiency programs that have high program and administrative costs.

Program delivery should occur through the Office of Clean Energy, the utilities and third party providers, based upon a determination which is best suited to efficiently deliver the programs in the most cost-effective manner. No monopolies should be afforded to utilities within their service territories, particularly because not all utilities have demonstrated the same level of interest in such delivering programs or a capacity to do so. Exclusives in this context could result in vastly different offerings being made available in the different service territories, creating the potential for customer and trade partner confusion, vendor favoritism and significant gaps in coverage. In a similar vein, it would not be advisable to allow one utility to offer programs in the service territory of another utility.

The utilities should, however, be encouraged where appropriate to leverage their customer relationships and ability to offer promotions such as on-bill financing (which cannot be provided by OCE or third party providers) as a means to deliver programs and as a complement to the OCE programs.

Enhanced Building Codes and Standards

The Draft EMP indicates that buildings are responsible for more than 60% of the State's end-use energy consumption, and advocates that the building sector be decarbonized and electrified by 2050. To accomplish this, the Draft EMP recommends the implementation of enhanced building codes and appliance standards for new and existing buildings and the development of "net zero carbon" homes and buildings in the near and longer term.

While NJLEUC agrees that buildings are an appropriate focus of the EMP's energy conservation efforts, we urge that it is critical for the State to adopt realistic building-related policies and efficiency requirements that (i) are achievable, (ii) are not unduly costly or disruptive

of business operations, (iii) do not diminish the value of buildings or impede the ability to buy or sell them, and (iv) recognize that the proposed conversion from natural gas to electric represents a seismic shift that will create significant operational and implementation issues.

We note that here, as elsewhere, the Draft EMP does not contain an analysis of the costs associated with the conversion from fossil fuels to 100% clean energy in the building sector. Specifically, the Draft EMP does not contain an analysis regarding the cost—in capital, time and inconvenience/business disruption—to retrofit commercial and industrial buildings that are 20, 30 or more years old. This type of analysis is necessary and appropriate and should be undertaken by a qualified expert in such matters in the context of a formal stakeholder process involving affected businesses.

NJLEUC reiterates that the State's large businesses were early adopters of energy efficiency as a tool to improve their facilities, reduce their carbon footprint and lower their energy usage and associated costs. It is therefore fair and equitable that any new building and appliance codes adopted as part of the EMP credit such businesses for their efficiency efforts to date, giving appropriate recognition to their prior usage and demand reduction accomplishments. It should be noted that as a result of their prior efforts, businesses may not be able to further reduce their energy usage by significant amounts, having already achieved a high level of efficiency based on the cumulative effect of past efficiency projects. This factor should be taken into account to avoid application of energy reduction requirements that cannot be achieved by facilities that are already efficient under LEED and other standards.

It must be recognized that the costs associated with upgrading buildings—particularly older ones—to comply with enhanced building and appliance codes can be considerable. It has been estimated by a substantial New Jersey-based REIT that if the 2% annual reduction mandated by

the Clean Energy Act and the electrification requirements set forth in the Draft EMP were to be applied to their existing commercial buildings, this could result in capital improvement costs that exceed \$13 per square foot, exclusive of the costs associated with the conversion of fossil fueled heating systems to heat pumps. The cost estimate includes, among other things, the costs associated with conversion to LED lighting systems, variable frequency drives for all motors, building automation systems with grid demand response, ice thermal storage, additional roof insulation, and installation of EV charging stations to serve an assumed percentage of building tenants.

When applied to companies that own significant commercial space in New Jersey, the \$13 per square foot number could result in upgrade costs in the tens of millions of dollars or more. We note that in the case of office buildings, building owners may have to assume these costs as they may be precluded from transferring these costs to tenants under the provisions of their leases. In such instances, the owners of large office parks could suffer a significant reduction in the overall value of their real estate portfolio.

The suggestion in the Draft EMP that New Jersey should advocate for net zero carbon building standards for new residential construction in the near term is also a concern to NJLEUC, and should be to ratepayers generally. When combined with the stated goal to significantly expand the number of light duty electric vehicles (which will presumably require the installation of one or more charging stations at each home), net zero carbon homes would have the potential to significantly increase intermittent short-term demands made on the electric distribution grid, which could trigger the need for substantial distribution system upgrades to accommodate the additional demand.

It is anticipated that the combination of full home electrification and the addition of one Level 2 EV charging station per home (which would be expected to increase nighttime demand by

7 kW), will result in a doubling of residential electric energy use and a quadrupling of the electricity demand that will occur in winter when heat pumps are at peak demand and lowest efficiency. In order to facilitate nighttime heating and EV charging during winter, it is assumed that the capacity of a home solar PV array for a net zero electric energy home would have to be substantially higher than for existing homes and coupled with sufficient battery storage system capacity to enable the home to operate on a net zero carbon basis.

While net zero carbon homes would nominally be expected to meet their own demand and energy needs with sufficiently sized PV solar arrays (which may require the use of back yard ground mounted arrays to supplement rooftop units), the homes will still require the availability of backup power when solar irradiance is not optimal. This would result in a need to double the capacity of the utility distribution system serving residential developments (or more than triple this capacity if EV charging is included at each home), while reducing throughput, resulting in a significant reduction in load factor that, in turn, would increase distribution costs for all ratepayers.

As a separate matter, the EMP assumes that the cost of net zero carbon buildings will not be significantly higher than comparable current offerings, and that because they will offset their own energy demand, the cost differential between natural gas heating and electric heating will be negated and quickly recovered through savings. However, we urge that when appropriate New Jersey-specific data points and baselines are utilized, new net zero carbon homes, which are presumed to include one EV charging station, would cost significantly more than assumed—likely an additional \$100,000.00 for a standard 2400 square foot single family home. These costs are associated with significant upgrades to, among others, the building envelope, triple pane windows, insulation, appliances, heat pumps and the purchase of solar and battery storage equipment. We would be happy to share our analysis of these costs at an appropriate time.

Assuming that our projections are accurate, increasing residential home prices by \$100,000 or more has the potential to cause a significant reduction in the number of homes and developments built in New Jersey, adversely affect the ability of homebuyers to secure mortgages, and reduce sales volumes experienced by real estate brokerage firms.

Increased Reliance on the Nuclear Plants

At its workshops, the Rocky Mountain Institute produced several modeling scenarios for the transition to 100% clean energy by 2050. In each of the scenarios, RMI assumed that the nuclear power plants would continue to operate through the expiration of their current permits, and potentially longer if nuclear power is the least cost supply option then available to the State. The transition scenarios therefore contemplate the continued operation of the nuclear plants through at least 2036 for Salem I, 2040 for Salem II and 2040 for Hope Creek. As of 2050, assuming continued licensure is obtained from the Nuclear Regulatory Commission—which is by no means a certainty--the Salem I and II units would be 70 and 74 years old respectively, well beyond their assumed useful lives. We note that when the Oyster Creek Nuclear Station closed in 2018 after 49 years of service, it was the oldest operating nuclear plant in the United States.

According to the testimony of Ralph Izzo in support of the Zero Emission Credits Law, as of last year the three nuclear units either were, or soon would become uneconomic. Izzo stated that the units would be closed unless the units received substantial subsidies. The ZEC Law was approved to forestall the threatened closure of the facilities and authorized the potential payment of substantial subsidies over a ten year period, subject to possible extension. The periods of time contemplated by RMI for the units' continuing operation obviously vastly exceed the ten year period in which these units are potentially eligible to receive ZECs.

It is fair to question the wisdom of developing an energy transition plan that is dependent upon the prolonged subsidization of nuclear facilities that will apparently become increasingly uneconomic and technologically obsolete with the passage of time. RMI has acknowledged that the units' continuing long term operation will require infusions of capital and the payment of additional operations and maintenance expenses, which presumably would be passed to ratepayers as further costs payable in addition to the ZEC subsidies.

As discussed below, under the ZEC Law, NJLEUC members will already be required to annually pay up to a million dollars each for the subsidy. Expanding the subsidy period for an additional 20 years, and increasing the subsidy to include infusions of capital and O&M expenses on plants that could be 20 years or more older than Oyster Creek when it closed, could represent an extraordinary financial burden that will be difficult for the business community and ratepayers generally to absorb. We note that the primary reason given for the closure of Oyster Creek was to avoid significant capital investment in new cooling towers to comply with enhanced environmental requirements. Under the RMI scenarios, would ratepayers be required to make investments in the Salem and Hope Creek stations that Exelon was unwilling to make in Oyster Creek?

It must be appreciated that only a finite amount of ratepayer capital is available to invest in energy infrastructure and the programs implemented by the EMP. It therefore makes little sense to devote inordinate and increasing amounts of ratepayer funds to support increasingly uneconomic and obsolete nuclear plants, particularly when to do so will result in less capital being available to devote to the state-of-the-art renewable and energy storage technologies being developed that will be critical to achieving the clean energy future envisioned by the Draft EMP.

Equally problematic is the fact that the long term provision of subsidies and other out-of-market financial support to the nuclear plants will continue to wreak havoc on the dispatch of

generation in the wholesale markets, which in turn will cause pricing inefficiencies that could deter new generation investment, increase costs and threaten the reliability of the power grid. We note that out-of-market subsidies are already having an unwelcome impact on the wholesale markets, underscored by FERC's recent intervention in the PJM auction. There will also be the continuing issue regarding how best to dispose of additional nuclear waste.

There has to be a better route to arrive at the desired clean energy future. If the 100% clean goal is dependent upon continuing reliance on these aging nuclear units through 2050, this is an issue that should be addressed in a formal and open stakeholder proceeding that includes the participation of appropriate experts.

Additional Issues to be addressed in the Ongoing EMP Process

It is important that the Final EMP establish responsible near and long-term goals and, of equal importance, well-considered paths to achieve those goals. In order for the EMP process to ultimately be successful, we urge that additional analyses be conducted regarding a number of considerations and variables that could have a significant impact on whether the EMP achieves its goals. The questions we suggest need to be addressed and, as appropriate, considered in formal stakeholder proceedings, should include the following:

- 1) What is the current and anticipated ability of the utility distribution and transmission systems (and PJM generally) to accommodate the various initiatives set forth in the EMP?
- 2) What planning needs to occur to assure that the short and long-term RPS and other goals will be achieved?
- 3) How will the EMP priorities be established and how will they be sequenced in the implementation phase—e.g. which aspects of the utility distribution and transmission systems must be upgraded to accommodate specific EMP initiatives and when should the upgrades occur to support the timely rollout of those initiatives (including the electrification of the transportation and building sectors, assimilation of distributed energy resources, and expansion of the RPS)?

- 4) Has the viability and cost-effectiveness of all proposed programs been supported by informed studies and cost-benefit analyses, including appropriate economic, demographic, market and price forecasts?
- 5) Will the 2050 100% clean energy system achieve the same level of reliability as currently provided by the utility distribution and transmission systems? If not, what must be done to assure the continuing reliability of the system? Will there be a continuing role for fossil fuels?
- 6) Will adequate utility-level battery storage resources be developed and available to support the RPS goals as they increase over time? Can the goals be achieved absent the widespread availability and use of utility-level battery storage capabilities? Have timing and cost projections been made regarding the widespread introduction of utility-level battery storage?
- 7) What assumptions have been made regarding the health of the underlying state and national economies during the 30 year period encompassed by the EMP? What impact would a recession or other negative economic factors have on the projected EMP implementation plans and timeline?
- 8) What would be the impact on Basic Generation Service costs over time if the BGS auction is limited to only clean energy sources? How would the EMP reconcile the likely increases in the BGS price caused by reduced auction competition and more costly clean energy sources with the concerns expressed in the EMP regarding environmental justice and LMI communities?
- 9) How many traditional (e.g. non-green) jobs are projected to be lost, displaced or put at risk as a result of the implementation of the EMP?
- 10) To what extent would the existing utility infrastructure become obsolete or unnecessary due to the EMP's projected distribution and transmission upgrades and modernization, elimination of fossil fuels, expansion of distributed energy resources, energy efficiency and demand response initiatives, and the electrification of buildings? What stranded or other costs would result from the elimination of the utility infrastructure and how would these costs be valued and recovered from ratepayers?
- 11) What is the anticipated impact on the New Jersey economy from the elimination of gasoline stations and other sources of fossil fuels? What role will the state's natural gas utilities play in the projected 2050 clean energy economy?
- 12) What, if any, fossil generation, including cogeneration, will be permitted as a transitional generation source leading up to 2050? Will distinctions be drawn between the development of major fossil-based generating plants and cogeneration facilities developed as microgrids for reliability and resilience purposes?

- 13) Are other State and local laws properly aligned with the proposed EMP policies and programs? Is there sufficient acceptance of the programs by affected stakeholders to assure their effective and timely implementation?
- 14) What type of regional and national planning coordination has occurred and is envisioned to implement the EMP? Have all state, regional and federal agencies, including PJM, whose cooperation will be required been consulted?
- 15) Does the State anticipate introducing a universal data sharing protocol for use by the utilities to facilitate all necessary forms of data transfer and information sharing between customers, the utilities and the regional grid? How will past problems associated with the inability of different utility data systems to communicate with each other be resolved?
- 16) Has the State studied the costs associated with retrofitting, to higher efficiency and appliance standards, residential, commercial and industrial properties that were constructed 20 or more years ago? How will the standards be enforced? How will the State treat property owners who refuse to incur these costs or abandon their properties?
- 17) What tools will be adopted to make certain that the proposed programs are affordable to all classes of ratepayers, recognizing that New Jersey ratepayers are already paying energy costs that are among the highest in the nation?
- 18) Have all alternative approaches to program delivery been considered, to minimize the logistical, lifestyle, work environment and other burdens implementation of the EMP will impose on the State's residents and businesses.

Some Thoughts Regarding Costs and Rate Impacts

Recently, increased attention has been paid to the cost impact of utility programs on both “average” residential ratepayers and large energy users. The large rate increases associated with recent utility infrastructure and rate cases, nuclear subsidies and initiatives such as offshore wind and enhanced renewable portfolio standards, have had significant and growing rate impacts on all ratepayers, including low income individuals and retirees who have difficulty absorbing them. It is reasonable to assume that the many transformative initiatives included in the Draft EMP will come with considerable price tags, notwithstanding RMI's assurance that only “least cost alternatives” will be pursued. We note that even least cost alternatives in this context have the

potential to result in huge rate increases, making the conspicuous absence of any cost analysis in the Draft EMP a matter of significant concern.

The recent attention paid to the cost impact of utility programs on large energy users is a welcome development because the viability of the State's struggling business community should be of considerable concern to the State. All is not well with many businesses that face stiff competition from out-of-state competitors whose energy costs are lower, as well as national companies whose New Jersey facilities must remain cost-competitive with company-owned facilities located in other, less costly states.

Because the costs associated with ongoing multi-billion dollar utility infrastructure investments, nuclear subsidies, offshore wind and other programs and initiatives are recovered on a per kilowatt or per therm usage basis, they have become enormously expensive to large energy users. What has not been fully appreciated, however, is that the combined costs of these programs currently impose annual, multi-million dollar obligations on large businesses, obligations that are payable over extended periods of time.

NJLEUC recently advised the Board that paying the statutory \$0.004/kWh ZEC subsidy alone would cost certain NJLEUC members up to \$1 million each per year. At the time, it was assumed that ZECs would be payable, at most, over a ten year period. However, the fact that RMI apparently believes that it will be necessary to continue operation of the nuclear facilities for the State to achieve its 2050 clean energy goal suggests that ratepayers may be asked to assume an annual cost burden that far exceeds the current ZEC charge, which is currently being appealed on the basis that it is unjust and unreasonable.

The costs associated with the initial phase of offshore wind development, believed to be \$1.8 billion, will have a similar rate impact. The nuclear and offshore wind subsidies alone are

expected to increase the rates paid by large energy users by up to one cent per kilowatt hour. These costs will be in addition to those associated with the previously approved multi-billion dollar utility infrastructure and renewables programs, and anticipated future filings, including \$15 billion in previously announced infrastructure and energy efficiency filings by PSE&G. These programs are typically amortized over the life of the assets they support and therefore impose costs on ratepayers for prolonged periods of time. These programs have contributed to New Jersey having the sixth highest utility rates in the country.

Against this background, the Draft EMP proposes programs of breathtaking scope that would, among other things, upgrade, expand and modernize the utility distribution and transmission systems to accommodate changes in load associated with a dramatic expansion of the renewable portfolio standard, including aggressive offshore wind and solar programs; double current interstate transmission capacity to accommodate the import of renewable energy from the Midwest; introduce “smart grid” and advanced metering technologies; restructure the electric industry to facilitate the expansion of distributed generation; implement massive energy efficiency and energy storage programs; develop a statewide electric vehicle program and associated EV charging infrastructure; and advocate net zero carbon buildings and aggressive building and appliance codes. The Draft EMP would also create a host of financial incentives and subsidies, payable by ratepayers, to support these programs.

Here, again, it is surprising and disconcerting that the Draft EMP contains no cost estimates or cost-benefit analyses for these initiatives, whose combined costs could easily be in the hundreds of billions of dollars if the costs associated with prior utility filings are used as a benchmark. Given the scope of the Draft EMP, it is important for comprehensive rate impact and cost-benefit analyses to be prepared and accorded considerable weight in fashioning the Final EMP. NJLEUC has

spoken with staff's consultants regarding their modeling approach and it appears that cost and rate impact analysis are not a primary focus for them, and that such analysis will only occur in the "policy phase" of the EMP process, which will occur after the modeling has been completed. While the consultants have focused on "least cost" scenarios, it remains unclear what this will mean in practice, the types of scenarios the consultants are considering, and the assumptions on which their analyses will be based. The further statement that certain modeling will be based on ten year energy market projections provides no comfort as projections made over such a prolonged period are generally not considered to be reliable by experts.

The RMI approach is problematic. Rate impacts should be a critical consideration that guides the development of EMP policies, as affordability must be a key concern throughout this process. Given the potential for the EMP to result in very significant rate increases to all ratepayers, we urge the consultants and the State to engage in a more comprehensive process that elevates concern regarding rate impacts and the need for added transparency regarding the policies that are now being considered for inclusion in the EMP. These scenarios should include, to the greatest extent possible, alternatives that would tend to relieve the financial burden on ratepayers, including imposing hard caps on ratepayer obligations to fund energy-related programs, emphasizing self-funding and competitive options for energy efficiency and other programs, and promoting the use of an infrastructure bank, revolving funds and private capital, including broad application of public-private partnerships for the development of energy projects involving governmental entities. The consultants should also prepare projected bill impacts for residential, commercial and industrial ratepayers so that the impact of the proposals, individually and collectively, on the State's economy, residents and business community can be properly assessed.

The Draft EMP's expressions regarding the economic benefits that are projected to flow from the creation of a new "green economy" should also be critically analyzed. While there is no question that the expenditure of many billions of dollars will spur green jobs and economic development in certain sectors, due consideration should also be given to whether the costs associated with developing certain sectors could stunt economic development in other sectors of the more "traditional" economy (e.g. companies other than PSE&G and its trade allies, who view the EMP as a business opportunity), cause the loss of jobs, and result in businesses investing less capital in their New Jersey business operations; a trend that unless reversed, could lead to the continuing exodus of businesses to other, less costly states.

To state the obvious, the dollars New Jersey businesses spend on the EMP and utility energy programs are the same dollars that they would otherwise devote to employee salaries, job creation, facility upgrades and expansions, and payment of state and local taxes. Accordingly, the additional costs imposed on ratepayers from implementation of the EMP should be viewed as a proposal for a significant tax increase as their effect on businesses and other ratepayers will not be distinguishable.

NJLEUC appreciates the opportunity to provide these comments regarding the Draft EMP. We look forward to working with the State in the continuing EMP process and to assist in the

formulation and implementation of responsible energy policies that will help achieve the State's energy goals and meaningfully contribute to our collective efforts to combat global climate change.



Respectfully submitted,

Steven S. Goldenberg
Giordano, Halleran & Ciesla, P.C.
125 Half Mile Road, Suite 300
Red Bank, New Jersey 07701

Paul F. Forshay, Esq.
Eversheds Sutherland (US) LLP
700 Sixth Street, N.W., Suite 700
Washington, D.C. 20001-3980

Attorneys for the New Jersey
Large Energy Users Coalition

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