The Labor-Management Organization for IUOE Local 825
Building Our Future

September 16, 2019

The Honorable Joseph L. Fiordaliso
President, Board of Public Utilities
44 South Clinton Ave, 3rd Floor, Suite 314
Trenton, New Jersey 08625-0350

**Subject: New Jersey Energy Master Plan Final Comments**

Thank you for the opportunity to submit comments, participate in the stakeholder process and offer our unique insight toward shaping the roadmap of New Jersey's energy future.

The Engineers Labor-Employer Cooperative is a labor-management trust that represents the combined interests of the nearly 7,200 members of International Union of Operating Engineers Local 825, and the signatory union contractors who employ them. As a multi-state organization, ELEC focuses on promoting economic development and advocating for investments in infrastructure – not only to provide work opportunities, but to ensure that our members, contractors and their families have the quality of life they deserve as residents of New Jersey.

IUOE and contractors invest millions annually, hosts and operates two state-of-the-art training campuses and are making significant advancements and investments in STEM higher education for our members to keep up with equipment technology, software and hardware, internal computers, GPS and other advanced features, which will be required to build the energy of the future. As we plan the energy mix of the future, it is critical to keep in mind that organizations like ours have already begun putting the pieces in place to ensure our membership is up-to-date and ready to work.

**EXECUTIVE SUMMARY**

In order to build a stronger and fairer economy that works for everyone, New Jersey must invest in a diverse energy mix that pulls from all available natural and renewable resources. While we are striving to reach a 100% renewable goal by 2050, we must remember that it is 2018. Incremental progress is what will prove to be the most successful; we should not take any options off the table.

Unfortunately, the draft EMP, which could have served as a true energy road map to the future, lacks a plan for real progress. This summary outlines five major themes that are most concerning

when looking at New Jersey's ability to reliably and affordably provide an energy future that grows our economy and puts us on the path to more renewable and sustainable sources.

In addition to gambling on New Jersey's ability to meet its energy needs via untested and not-yet-discovered technologies, the draft EMP readily admits that natural gas is 50% cheaper than all other forms of energy. The report claims that, although rates will initially increase, the cost will be offset by other means without further explanation or outlining a timeline for realizing those savings.

*Ignores the enormous role clean natural gas plays in New Jersey*
More than 75% of all homes in New Jersey are heated using natural gas, which is half as expensive as electric heat. Nearly 50% of NJ homes are powered by natural gas, and that number continues to grow. In order to replace natural gas entirely, New Jersey would need to develop a solar field the size of Passaic County, simply to meet the existing power needs in our state.

*Reliance on technology that does not exist yet*
This draft is betting on advancements and invention of technology instead of utilizing existing generation resources as the bridge. For example, our present battery storage technology does not meet our present energy needs. That means, when the sun isn't shining, or the wind isn't blowing at a consistent rate – we will not have the ability to turn the lights on or power our devices without interruption. As mentioned above, the space requirements for solar technology are unrealistic. Additionally, the amount of wind energy anticipated by 2030 only meets about 10% of our current needs – assuming no population growth, advance manufacturing plant influx or business expansion.

*Incorrect Demand Assumptions*
As part of the overall EMP, an Integrated Energy Plan is being drafted, which will be the comprehensive modeling study used to determine whether future projects meet a new threshold of necessity and/or financial prudency. Unfortunately, even before this model is actually completed, the EMP dangerously assumes a "decrease in the demand of natural gas." All national models, studies and common-sense show demand will increase significantly – especially when juxtaposed against the current cost for clean natural gas.

*Underlying cost burden that will be shouldered by residents*
The 'Murphy New Home Tax' – the EMP suggested targeting New Construction to demand a transition from clean natural gas to electric based heating. As is clearly outlined by the draft's own graphs and tables – this essentially becomes a new and regressive tax on those building or buying a new home.

Furthermore, consumers should shoulder the burden of transitioning their homes from oil or propane heat to electric – at a cost that could easily be in excess of $10,000. There is no plan to cover the costs other than offering vague and undefined 'incentives' from the Board of Public Utilities.

*New Jersey cannot Fight Climate Change Alone*

When looking at the Energy Master Plan draft, it is important to note that New Jersey has been one of the leading states when it comes to combatting climate change, and the United States has been one the global leaders on this issue. New Jersey cannot fight climate change alone, so it is imperative that we do not cut off our nose to spite our face as we are drafting the road map to a sustainable, feasible and affordable energy future.

ELEC825 and IUOE 825 supports energy policy that includes a diverse energy portfolio that grows capacity and increases reliability while reducing costs and emissions. This includes expansion of clean natural gas and zero-emission nuclear power to be prominently used as a bridge to the future as we develop the technologies needed to make renewables, like wind, a reality.

**STRATEGY 1: Reducing Energy Consumption and Emissions from the Transportation Sector**

The Engineers Labor-Employer cooperative believes that in order to meet our future energy goals, New Jersey needs to develop strategies and invest in technologies that provide energy – regardless of sector – in a more efficient and effective way. This hold true for the transportation sector specifically as outlines in the Energy Master plan.

Understanding that the transportation sector makes up 46% of the state's greenhouse gas emissions, it is important that we layout clear, concise and diversified goals to achieve realistic reductions. Unfortunately, this is where the current draft falls drastically short by only setting a goal of the having the "transportation sector almost entirely electrified by 2050," without answering how it will handle the increase in demand for electricity this would cause.

Two major areas of concern are the infrastructure related to electric vehicle operations and charging, as well as the impact they will place on existing roadways without a plan to capture needed revenue for maintenance and repairs.

It is no secret that we can reduce emissions by switching from combustion-based engines to something battery powered and rechargeable. According to the US Federal Highway

Administration there are a total of 6,628,080 vehicles registered in New Jersey of which 3.9 million of which are cars (as opposed to large trucks and other large commercial vehicles). This would require billions of dollars to fund the infrastructure improvements required to provide the amount and level of charging to drive uninterrupted. Given the importance of cars for commuters across the state – especially in the central and southern portions where access to public transit is scarcer – this provides a significant problem that the EMP does not address. There is no mechanism to collect fees, taxes or revenues in order to fund this type of major infrastructure investment.

Additionally, transitioning the aforementioned 3.9 million vehicles to an electric based system would put strains on the existing grid at levels never seen or even theorized before. These also does not take into account how to generate the required power for these vehicles. Overnight charging, as most would likely do, would drastic shift peak load demand to hours when renewable energy, like solar, would not be available.

Lastly, while unrelated to the Energy Master Plan, incentivizing the purchase and usage of electric vehicles, transitioning public transportation to electricity and encouraging more commercial usage would place the same level of strain and wear on our streets, highways, and bridges. It cannot be overstated that a revenue strategy to reinvest in roadwork is almost as essential – and as nebulous in the draft EMP – as the energy grid needed to charge these electric vehicles.

**Strategy 2: Accelerating Deployment of Renewable Energy and Distributed Energy Resources**

We are already working to ensure our members will be prepared to work on the next generation of energy technology including offshore wind and solar. While these sources are an important part of NJ's energy future, the technology is not advanced enough to provide stable energy to power our estimated annual demand. For example, solar fields generate about 1 MW for every 2.8 acres of land.

Our organization has always supported an "all-of-the-above" strategy as it pertains to energy generation. There is no denying the impacts of emissions on our environment, however we do not support knee-jerk policy initiatives that fail to properly plan our transition from fossil fuel-based energy generation to renewable-based energy generation. This is where Strategy 2 and the entire EMP draft falls very short.

Setting a goal of a 50% renewable portfolio by 2030 is admirable – but when the details are examined, this clearly becomes unrealistic and in fact places New Jersey is a worse economic

position. This goal includes the often-discussed 3,500 MW of offshore wind. ELEC825 strongly supports the continued investment and expansion of offshore wind. Unfortunately, the draft is wholly unrealistic in its timelines. At present in Q3 of 2019, New Jersey as built 0 MW of offshore wind generation and has only awarded the first 1,100 MW. We find it very unrealistic that the currently permitted 1,100 MW could be built, online, and connected to the existing grid at full capacity by 2030, let alone an additional 2,400MW. We would support any major investment that could make that possible – but the EMP fails to articulate how that will become a reality.

Additionally, as it pertains to investments in solar generation, we support the development of this generation source as well. However, proper siting and the major shortcomings of solar – it doesn't generate electricity when the sun isn't shining, battery technology doesn't meet current needs, and the massive space requirements provide a real challenge in our densely-populated state – are not addressed in any detail. Instead, the EMP draft sets the precedent for a major unfunded mandate to use available community space. This would be a major cost shouldered by the taxpayer. Without any details of funding, detailed incentives or other roadmaps for success, we would find it difficult to support.

ELEC825 understands the need to develop substantial energy storage capacity – in theory we support this type of infrastructure investment. However, what is outlined in this draft is betting on future technology advancements that do not presently exist instead of utilizing existing generation resources as the bridge. This is not a future that Operating Engineers are willing gamble on.

While we support the critical investments needed to make sustained renewable energy generation a reality, the current plans also misses a critical component. There is no mention, plan or process surrounding how the newly generated energy will be accepted and used in the existing PJM grid. ELEC825 supports a regional planning approach that takes multiple states and grids into account. However, there is no plan here whatsoever and that is very troubling.

The present shortcomings of current renewable technology and the mandates by Governor Murphy and the Energy Master Plan for a 50% renewable portfolio will force New Jersey to lose its significant competitive advantage as an "net-exporter" of energy to become an importer. That means we will forgo our own energy generated in-state to purchase "clean" energy from another state in order declare our goal accomplished on paper. We do not support this typical political shell game. This will increase ratepayer costs that will adversely affect those in minority, lower socio-economic and inner-city communities more prevalently. We do not support the creation of a regressive-tax that this would cause.

**Strategy 3: Maximizing Energy Efficiency and Conservation and Reducing Peak Demand**

At present, electric and gas utilities are mandated by the Clean Energy Act to reduce electric and gas consumption by 2% and 0.75% respectively – this is acknowledged in the draft Energy Master Plan. Our utilities possess several unique advantages in delivering energy efficiency programs to customers, including established customer relationships, expertise administering energy efficiency programs, ability to offer on-bill repayments, and access to usage data to identify energy savings opportunities and monitor the impact of energy efficiency projects.

ELEC825 supports setting realistic and attainable goals and empowering the utility companies to serve as the lead administrators of the energy efficiency programs designed to achieve the Clean Energy Act's goals and targets. Helping customers reduce energy usage is critical to lowering emissions; without cost-effective energy efficiency programs spearheaded by utilities, this will be very difficult to achieve. Leading states in energy efficiency rely on a utility-driven model because utilities are best positioned to manage complete energy efficiency program portfolios that account for the unique customer class mix within their service territories.

Just as we must take into account how new energy generation sources play into the PJM energy grid, the same goes for reduction of peak demand and efficiency. ELEC825 supports a regional approach to our energy future and the current plan does not take this in account. The currently plan also fails to address in detail the shift in peak demand caused by a grid reliant upon renewables sources that may be unreliable… Simply shifting the peak time is not a realistic strategy. To address this, we support investments in infrastructure to harden the grid against spikes, storms and other occurrences.

Currently, New Jersey ratepayers pay nearly $1 billion annually in Societal Benefits Charges, of which approximately $350 million is annually earmarked for energy efficiency programs, through the New Jersey Clean Energy Program. Additionally, ratepayers pay approximately another $250 million annually, built into utility rates, for utility-sponsored energy efficiency programs. These State-run and utility-run programs sometimes are redundant, at times overlap, and often cause confusion for ratepayers and yield few cost efficiencies. The draft EMP proposes increased funding for a continued public relations campaign that will undoubtedly be mismanaged and misused for political purposes instead of educational purposes. ELEC825 does not support allowing state agencies to increase public relations funding and would much prefer the money be placed into capital investment where ratepayers would see tangible benefit.

We would also support a mechanism that would enable utilities to recover costs associated with mandated energy efficiency program offerings and lost revenues. In many other states, there are mechanisms that allow utilities to recover lost revenues resulting from energy efficiency

programs to prevent market forces from disincentivizing the implemention of energy efficiency programs. Recovered revenue could be used for on-going and much needed capital infrastructure investment. A successful program that takes into account reliability, safety, affordability and resiliency will help New Jersey meet its clean energy and greenhouse gas reduction goals.

**Strategy 4: Reducing Energy Consumption and Emissions from the Building Sector**

As a matter of organizational principle, ELEC825 supports regulation that encourages development and provides for increased standards of quality and safety. We do not support creating barriers that are counterproductive, would stifle future development and harm economic benefits.

As we continue to rely more and more on technology, the need for electricity and energy is only going to increase. This is a fact that cannot be ignored. Whether electric heat, electric cars or electric razors for shaving – we are moving toward a more electrified society and trying to stigmatize the most cost-effective means of generating energy. We emphatically do not support this attempt by the administration to stigmatize clean natural gas.

We also urge the BPU to proceed with extreme caution as it pertains to the Uniform Construction Code. This was painstakingly drafted in a way to conform with nationally recognized standards and was intended to provide uniformity across all municipalities. Drastic changes being proposed by an agency with no construction experience or background would cripple any competitive advantage New Jersey has for attracting development.

Highlighting Table 1 embodies the primary issue with incentivizing away from clean natural gas. At present, NJ utilities are filing with the BPU to reduce rates on customers because of the abundance of clean natural gas and, and these utilities now have the ability to pass the savings onto the consumer. This should not be stifled by political animus toward a generation source.

**Table 1: Average Consumer Expenditures for Heating Fuels in the 2017-2018 Winter in the Northeast U.S.**

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| Natural Gas | $742 |
| Heating Oil | $1,376 |
| Electricity | $1,406 |
| Propane | $1,856 |

While we understand the need to reduce emissions, ELEC825 does not support placing the "Murphy New Home Tax," on new construction by requiring the electrification of heat in new homes. This will cost the consumer more than double and will create an especially onerous burden for those in minority, lower socio-economic and inner-city communities.

ELEC825 opposes the plan to cut incentives for natural gas as proposed in the master plan.

As mentioned in the draft master plan, "*Notably, electrification of traditionally fossil fuel-dominated sectors will result in two significant shifts: the substantial increase in electricity demand over time, and a corresponding decrease in natural gas and petroleum consumption over the same period."* Unfortunately, the increase in electricity demand will result in the need for additional generation – which presently cannot be met using renewable sources. Currently, the EMP has no plan to address this increase in demand and does not provide any fact-based detail to support the claim natural gas demand will decrease.

ELEC825 also believes the plan is misguided in its belief that it can juxtapose the transition from oil and propane fueled heat pumps, water heaters and other appliances – which presently makes up only 10.3% of total residences – into a plan to transition away from natural gas. This is simply farcical and would prove economically devastating to the state. Politically driven rhetoric should not be included in critical documents like the Energy Master Plan and significant time, resources and the expertise of academics and industry professionals should be convened separately to study this issue. Simply saying a 10% plan will help us with the remaining 90% is unacceptable and irresponsible.

Much of the residential construction industry is already beginning to adhere to the National Green Building Standards – which was already led to a 40% reduction in energy use in buildings over the past 30 years. Over the past decade, clean natural gas has played a critical role in lowering carbon emissions and reducing energy cost for residents.

**Strategy 5: Modernizing the Grid and Utility Infrastructure**

As mentioned previously IUOE 825 and ELEC825 support investments in infrastructure that provide reliability, resiliency, and redundancy. These investments are the critical foundation for a more interconnected system. From generation to distribution, we support significant investment in this area. However, we are troubled by a master plan that discusses upgrading utility infrastructure on the one-hand, while current infrastructure investment rate cases brought by utilities attempting to do the right thing, and totaling nearly $12 billion in utility work, are being held up, opposed or reduced on the other hand.

Local 825 Operating Engineers invest millions annually in training and education to ensure a high-quality workforce dedicated to professionalism, safety and excellence. We work directly with the utilities to ensure projects are done safely and efficiently. Gas utility companies also invest millions in technology to identify areas in need of repair as well as regular maintenance. ELEC825 supports fast-tracking these projects.

Since even before Super-Storm Sandy, NJ has faced increasing occurrences of extreme weather that have wreaked havoc on our already strained and aged energy infrastructure, causing outages. Not only does this put the public safety and health of our residents at risk, it crushes small businesses and local economies. Unfortunately, many local municipalities have pushed back against the very projects that would provide reliability.

An additional issue comes when looking at our regional energy grid and distribution. Recent publications have documented that states are not consulting with PJM – the regional transmission association – for how new energy generation sources will connect and the role they will play in the larger regional grid. This is another mission-critical element needed as we look toward our overarching energy needs and distribution challenges. This is completely ignored in the existing plan. Additionally, ELEC825 believes that any additional oversight over transmission should be done from a larger-scale regional perspective and authority should not be placed with a single state agency. More than 1/3 of our existing bridge infrastructure is in need of repair with no long-term plan or timeline to address – are we expected to believe that we will be able to manage this in the energy sector?

Currently, NJ is a "Net Energy Exporter." This means that almost all of the energy consumed in NJ is generated here and that we export more energy into the regional PJM grid than we take out. That is good economically for our State and provides reliability and stability for our residents and businesses. However, because NJ belongs to a regional multi-state power grid, there is a concern that regulations that restrict non-renewable sources like natural gas and nuclear, will drive NJ generation prices up, hampering our ability to compete in the regional market. This means more of our energy will have to be purchased from State's that produce cheaper energy from sources like coal and petroleum. This "leakage" is bad for our environment and our economy. We must consider the importance of energy independence and look at outcomes rather than intentions, in nuanced environmental-energy policy.

**Strategy 6: Supporting Community Energy Planning and Action in Low-and Moderate-Income and Environmental Justice Communities**

We applaud decision makers for proposing lofty goals with high hopes, however the reality of our energy situation is not addressed in the EMP. We simply need to look at National Grid moratoriums in New York City to see the impact natural gas shortages have on our communities and the development of low-income housing. At the time of this writing, development of new low-income housing is officially on hold as utility providers cannot ensure energy will be available due to the lack of natural-gas capacity. The need for expansion of clean natural gas pipelines and subsequent infrastructure must be addressed before any social justice and

community initiatives can be undertaken. Without doing so, these policies will place these communities in an even more dire position.

With respect to urban and low- and moderate-income communities, it is misguided to invest significant resources to build electric vehicle charging infrastructure in areas or communities that statistically have a lower percentage of vehicle ownership. This needs to be studied in an analytical nature to determine the best return on investment before any state capital dollars are invested. ELEC825 supports utilizing newly adopted public-private partnership opportunities to make this investment.

**Strategy 7: Expanding the Clean Energy Innovation Economy — provide the framework upon which New Jersey will achieve 100% clean energy by 2050.**

ELEC825 in principle believes that utilizing existing programs, agencies, infrastructure and mechanisms that are currently successful or can be easily improved upon is preferable to developing additional government agencies, new regulations and processes. IUOE and contractors already invest millions of private sector dollars annually, host and operate two state-of-the-art training campuses and are making significant advancements and investments in STEM higher education for our members to keep up with equipment technology, software and hardware, internal computers, GPS and other advanced features, which will be required to build the energy of the future.

It is critical to keep in mind that organizations like ours have already begun putting the pieces in place to ensure our membership is up-to-date and ready to work.

Currently, the New Jersey Board of Public Utilities commits nearly $350 million dollars annually to the development and delivery of clean energy programs. However, these funds go unspent and/or are then siphoned off to plug gaps in the State's general operating budget on a regular basis. Properly using the existing funds dedicated to this purpose should be the objective. New Jersey already has a successful "green bank" that works. ELEC825 wholeheartedly supports utilizing the existing New Jersey Infrastructure Bank to fill the role proposed in the draft energy master plan. It would be foolish to create a duplicative agency when one already works well and drastic waste of taxpayer dollars. In a sense, this parallels other key flaws in the EMP: It proposes government intervention for its own sake, in an unproven capacity, when many of the tools at our disposal can already meet our needs and bring us closer to our goals with proper expert administration at a lower cost.