Jersey Strong
Coastal Coalition
Waves Not Blades

www.jerseystrong.org

Members, NJ Senate
Members, NJ Assembly

August 29, 2025

RE: **NEW JERSEY ENERGY MASTER PLAN**

Dear Legislators:

We are a growing coalition of more than 70 New Jersey counties, municipalities and citizen groups representing almost a million of your constituents. We are deeply concerned about the cost of electricity to our residents and businesses. In his January 14 State of the State address, Governor Murphy doubled down on his support of the NJ Energy Master Plan (EMP) which calls for achieving 100% carbon free electricity in the state by 2035. He has recently renewed calls for the legislature to codify that current executive policy into law in the current lame duck session.

In our view such an action would be a mistake of epic proportions, dooming NJ ratepayers to pay enormous premiums for unreliable power while causing irreparable harm to the state's environment and economic well-being. In furtherance of Governor Murphy's EMP goal and his focus on offshore wind, over 2500 MW (17%) of in-state generation has already been prematurely retired, including 650 MW at Oyster Creek, which had provided round the clock carbon free nuclear power since 1969. As a result, New Jersey now relies on other states in the regional PJM grid to supply over 25% of our power in order to keep the lights on and AC running when needed most and this dependence is expected to grow to 50% by 2035 to meet increased demand from electrification and new data centers.

This EMP policy has had direct economic consequences, since ratepayers must pay PJM for the additional capacity to be available as needed. Because PJM itself is short on capacity, the capacity price paid has increased ***nine-fold*** from 2024 to 2025 which has resulted in ***a 20% rate increase*** to hit electric bills this year. This situation is expected to result in continued further rate increases as our dependence on PJM grows and the price paid for capacity increases.

While some have attempted to blame the neutral, non-for-profit PJM organization for this rate hike, make no mistake: **The current EMP policy is a self- inflicted wound that is directly responsible for these rate hikes because it has destroyed our ability to generate enough power instate to meet our own needs.**

In any event, the current EMP is not going to achieve its objectives. Recent developments have revealed that goals for offshore wind development in NJ will not be met. BPU approved projects have been cancelled or delayed such that there is no active offshore wind construction. The BPU Fourth Solicitation was cancelled so there is no pipeline of projects in the planning and permitting phase. Thus, the offshore

wind targets for 2030, 2035 and 2040 are all expected to be missed with the likelihood that no projects will be developed in NJ before 2045, if ever.

While the current EMP is neither technically nor economically feasible, there is a need for an energy plan that can ensure that the state's growing energy needs can be met with reliable, affordable resources that will minimize emissions. The analysis presented in the attached report indicates that expansion of in-state natural gas and nuclear capacity, rather than intermittent renewables or reliance on PJM imports, would best serve the energy needs of NJ over the next ten years and beyond.

Natural gas is affordable and reliable and relatively clean with low carbon emissions. Dispatchable base load and peaking plants can be deployed quickly within the next few years at existing sites without significant transmission system upgrades. This would reduce or eliminate reliance on PJM imports while providing construction jobs and permanent employment to thousands of NJ residents.

Nuclear power offers the potential for reliable base load and carbon free power. The state currently gets 20% of its generation from instate units and more capacity could be added at existing sites. The cost of new nuclear capacity employing advanced small modular reactors has the potential to be affordable in the next decade but needs to be demonstrated. NJ should consider undertaking such a demonstration in partnership with the Federal government and developers at an existing site by 2035. This would create many high paying professional and union jobs and establish the state as the center of a US nuclear power industry renaissance.

We would be happy to come before any legislative body to discuss this matter and provide further support for the information provided herein.

Attachment: Wanted: A New Jersey Energy Policy that Works and is Affordable, August 2025

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Wanted: A New Jersey Energy Policy that Works And is Affordable

by

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WHITESTRAND Consulting LLC

August 2025

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1.0 Introduction

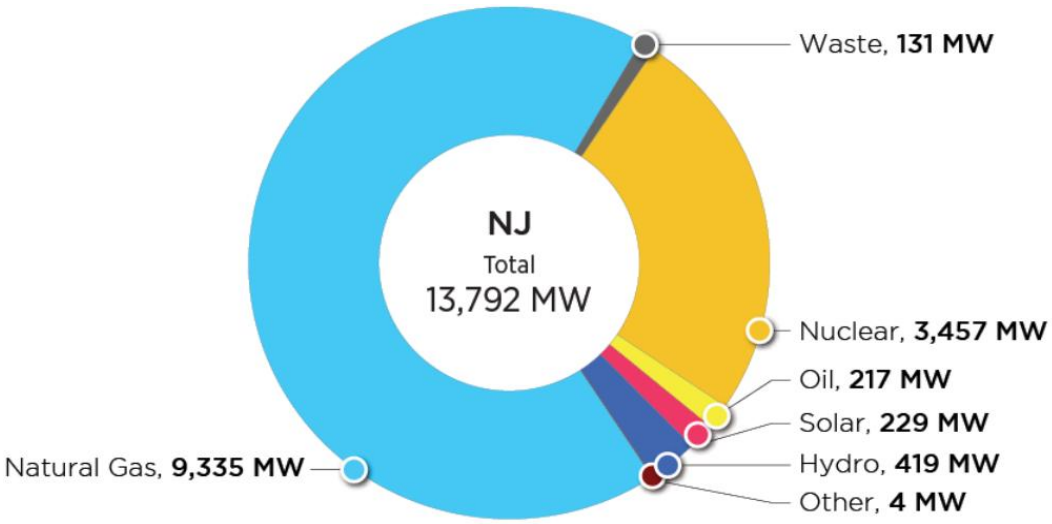
Since 2019 energy policy in New Jersey has followed Governor Murphy's Energy Master Plan (EMP) that calls for elimination of all in-state fossil generation and a ban on gasoline cars by 2035, and increased electrification of homes, businesses and transportation.

This program envisions increasing reliance on intermittent renewables, particularly offshore wind, solar and batteries to replace the existing reliable baseload generation in the state. In furtherance of these goals, over 2500 MW (17%) of generation has already been prematurely retired, including 650 MW at Oyster Creek, which had provided round the clock carbon free nuclear power since 1969.

2.0 New Jersey Capacity Shortfall

Currently NJ has a mix of generation resources as shown below.

Figure 2.1 – NJ Electric Generating Capacity[1]

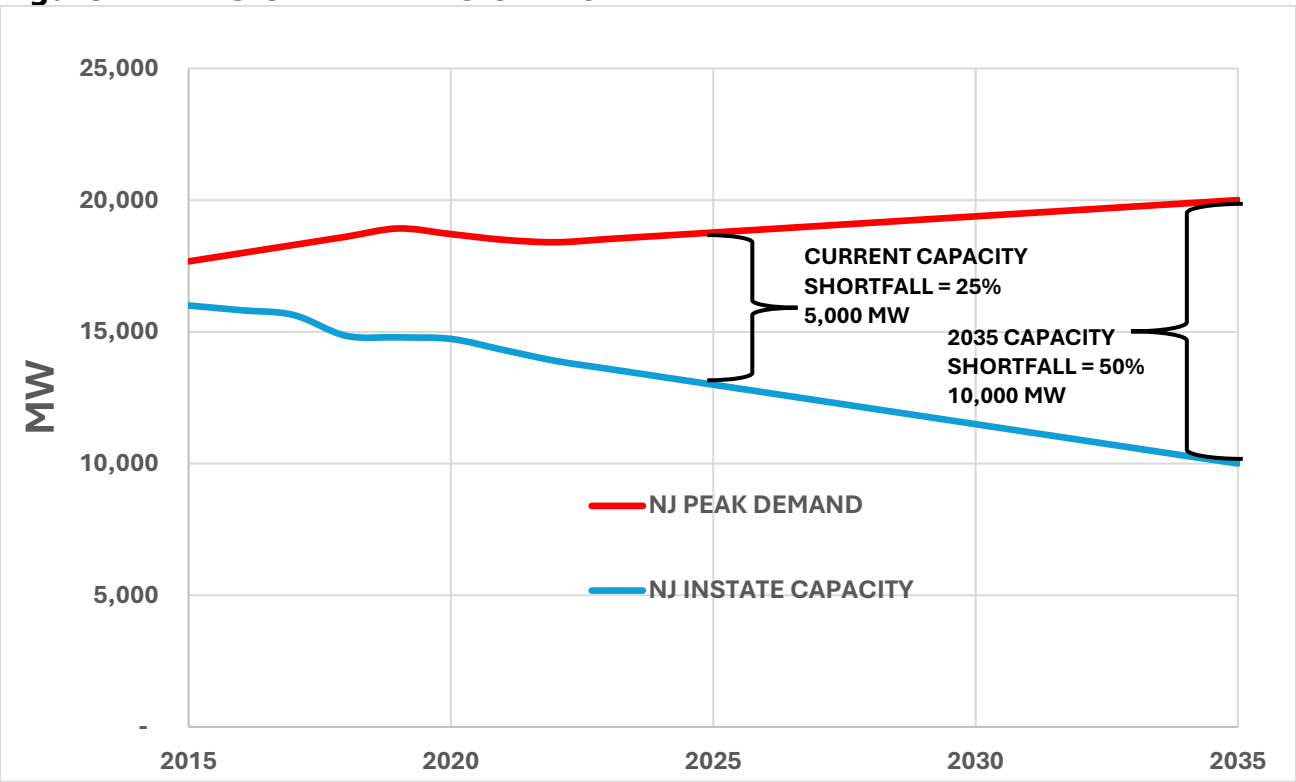


The direct result of the NJ EMP policy has been to increase out-of-state power imports from the regional PJM grid to meet peak demand during the critical summer months and throughout the year. New Jersey now relies on PJM to supply over 25% of our power in order to keep the lights on and AC running when needed most.

[1] NJ State Infrastructure Report, PJM June 2024.

The following chart projects how the state's reliance on PJM imports is expected to increase in the next ten years as demand from electrification and new data centers grows and instate fossil resources are reduced per the EMP. As indicated, PJM imports will grow from 25% (5000 MW) of the state's needs in 2025 to 50% (10,000 MW) by 2035[2].

Figure 2.2 – NJ GENERATING CAPACITY AND PEAK DEMAND



This EMP policy has had direct economic consequences, since ratepayers must pay PJM for the additional capacity to be available as needed. Because PJM itself is short on capacity, the capacity price paid has increased ***nine-fold*** from 2024 to 2025 which has resulted in ***a 20% rate increase*** to hit electric bills this year. This situation is expected to result in continued further rate increases as our dependence on PJM grows and the price paid for capacity increases.

Ironically, the increasing amounts of imported power from other PJM states is generated primarily by fossil resources, including coal units which supply more than 20% of PJM power. This belies the notion that the EMP will decarbonize electric generation. NJ is simply outsourcing emissions that know no state boundaries.

[2] Analysis of the New Jersey Energy Master Plan, Whitestrand Consulting, May 2025.

3.0 Effect of Continuation of the EMP Policies

The capacity shortage situation is going to be exacerbated by the failure of the EMP plan to replace fossil generation with offshore wind. The plan to have 7500 MW of offshore wind in operation by 2035 is in tatters, with no project expected to be built by then, if ever. But the EMP has not been abandoned, In fact, the Governor has called upon the legislature to codify into law the EMP goal of zero carbon electricity by 2035[3].

Given the failure of the offshore wind program, the EMP would now have to rely on massive amounts of new solar or onshore wind backed up by Battery Electric Storage System (BESS) capacity to provide power during the night and extended periods of low wind availability.

Because it only provides maximum power mid-day and not during the late afternoon – early evening peak, PJM only credits solar generation with 10% of its rated capacity for being available at peak demand[4]. Thus, to displace the current 9,500 MW of baseload fossil generation and serve an additional 10,000 MW of demand by 2035 would require installing a total of 195,000 MW of solar capacity.

There is simply not enough suitable space in the Garden state to make that a practical solution and its cost would be astronomical assuming the supply chain could even provide that much solar cell capacity. The removal of Federal tax credits and the imposition of tariffs on Chinese imports is expected to result in a severe reduction in the availability of solar cells either from domestic or foreign sources.

Likewise, onshore wind is credited by PJM with only 38% of nameplate capacity so that a total of 51,000 MW of onshore wind would be required to meet peak demand. There are just no suitable onshore wind sites in NJ for even a small fraction of that. So any combination of these renewables is just not capable of replacing the existing 9,500 MW of fossil generation, much less adding the 10,000 MW of new capacity needed to meet peak demand through 2035.

And when the sun sets or the wind doesn't blow, what would provide power? Current BESS technology can provide at most a 4 hour supply when fully charged. Installing sufficient battery capacity to back up solar or wind would cost hundreds of billions[5], if the battery supply chain could even support it which it can't. And siting fire-prone

[3] State of the State Address, Governor Murphy, January 14, 2025.
[4] Effective Load Carrying Capability (ELCC) Class Ratings for the Third Incremental Auction, PJM 2025.
[5] Making PJM all Wind and Solar Would Cost Over $2.4 trillion on Battery Backup, CFACT July 12, 2025.

lithium BESS facilities throughout the state would pose unacceptable risks to nearby residents and businesses. Batteries also have a useful economic life of 10-20 years so the need to constantly replace them also poses unacceptable environmental problems since the resulting toxic waste streams can't be disposed of in standard landfills.

In addition, connecting that much dispersed solar, wind and battery capacity to the grid would also require extensive and costly transmission system upgrades which would add significantly to ratepayer bills.

For all these reasons, a proposed energy policy based on renewables as envisioned by the EMP is both technically and economically a non-starter which cannot be taken seriously.

4.0 A Workable and Affordable Energy Policy

So if not offshore wind, solar and batteries what is the solution? Any state energy strategy must be judged on its ability to provide electricity to the state's residents and businesses that is: (1) Reliable; (2) Affordable and (3) Effective in minimizing carbon emissions.

Simply put, such an energy policy for NJ must involve jettisoning the EMP mandates for carbon free emissions by any artificial date, lifting the ban on gas powered vehicles and allowing homes and businesses to choose the means of heating their premises and cooking their food, whether electric or gas.

In the electricity sector we must reclaim the ability to generate enough power in-state to break the dependence on PJM and being held hostage to its increasing capacity prices. While solar, onshore wind and batteries can provide some marginal capacity, they can't solve the problem as illustrated above.

Only by retaining existing natural gas and nuclear resources and adding at least 10,000 MW of new reliable baseload or dispatchable capacity by 2035 – (10 GW in 10 years) will address the problem. This would employ proven and cost-effective solutions including:

<u>Natural Gas</u>

- NJ currently gets 60% of its power from in-state natural gas plants. There is sufficient capacity to add thousands of additional MW of baseload or dispatchable combined cycle or gas peaking units at existing and formerly used generating sites with the transmission infrastructure already in place.

- The levelized cost of energy (LCOE) of such new gas units is $78/MWH compared with $300/MWH for offshore wind, $115/MWH for solar and $194/MWH for battery storage[6].
- Natural gas has relatively low emissions compared with coal or oil and less than emissions associated with PJM imported power.
- Natural gas plants can be deployed relatively quicky using domestic supply chains capable of bringing this capacity online within 2-6 years, creating thousands of good paying jobs in the state.
- Expanding NJ natural gas pipeline capacity will allow import of sufficient fuel for the new generation as well as ensuring supplies for industrial and residential use.

<u>Nuclear Power</u>

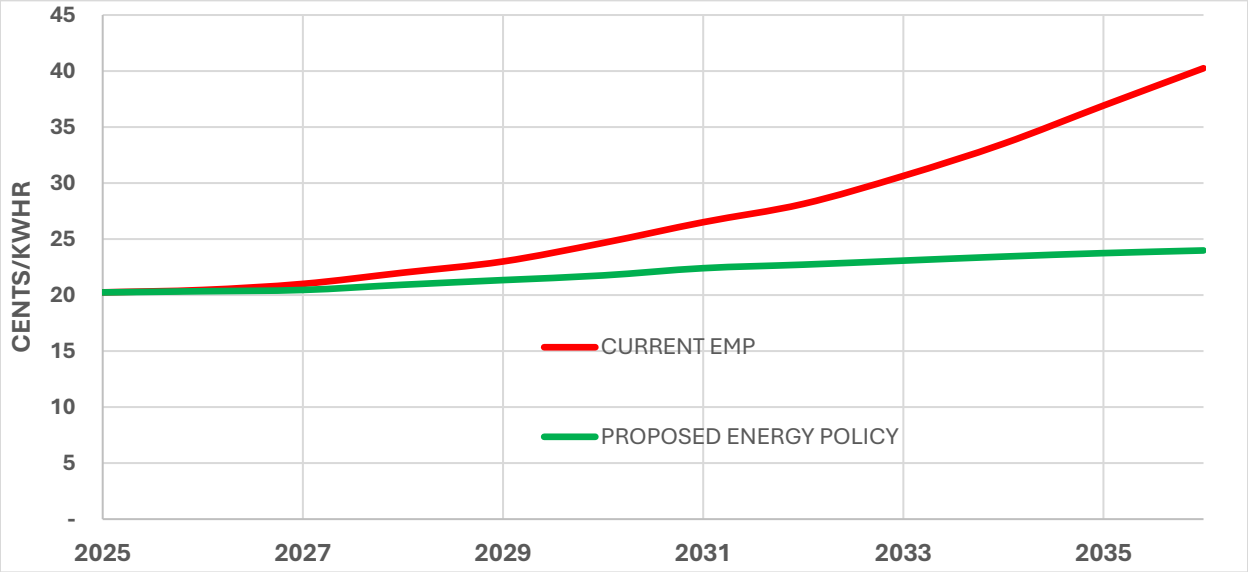
- NJ currently gets 20% of its power from nuclear units at Salem and Hope Creek. There is sufficient capacity to add several thousand MW at these sites as well as at Oyster Creek with existing transmission infrastructure.
- New capacity can be added, employing the next generation of advanced small modular reactors (SMRs). These designs employ passive safety features rendering them even less likely to experience any accidental release of radioactivity than the existing large-scale units at Salem and Hope Creek which have operated safely for almost 50 years.
- As with existing reactors, spent fuel can be safely stored on site for indefinite periods until a Federal waste repository, storage or reprocessing site is available.
- The LCOE for SMR plants is expected to be about $101/MWH, less than for offshore wind, solar and battery storage.
- Nuclear power is carbon free, dramatically reducing total emissions by displacing PJM generation which emits 730 lbs/MWH of CO2[7].
- Nuclear plants operate at 95% capacity factor for 80 years or more, amortizing the initial capital investment over a much longer period than renewables.
- SMRs can be deployed in 6-10 years using domestic supply chains and factory production of key components which can be installed onsite in a modular fashion to add capacity as needed.
- NJ can be at the forefront of a nuclear renaissance bringing investment and many more long-term jobs into the state than renewables ever could.

[6] A Comparison of the Levelized Cost of Energy (LCOE) of Various Generating Sources, Whitestrand Consulting, January 2025. (These LCOE values include tax credits, grid backup and transmission costs.)
[7] Emissions Rates in PJM, PJM Inside Lines, March 28, 2024.

5.0 Ratepayer Impacts

Affordability is of paramount importance to NJ residents and businesses. As indicated on the chart below, it is estimated that residential rates would double from the current 20 cents/kwhr to 40 cents/kwhr by 2036 if the current EMP plan to replace existing fossil baseload capacity with renewables were followed. This is due to the additional ratepayer subsidies required as well as the cost of additional transmission needed to connect those wind and solar resources to the grid.

Figure 5.1 – NJ Residential Electricity Cost



In contrast to renewables, natural gas generation requires no ratepayer subsidies as it sells its power at competitive wholesale market rates. It also can be located at sites with existing transmission infrastructure. These factors account for significant ratepayer savings compared with the EMP's subsidized, dispersed renewables.

Nuclear plants, although higher in levelized cost than natural gas ($100/MWH vs $77/MWH) will benefit from Federal tax credits and also require little or no transmission upgrade if located at existing nuclear sites. In any case, expected nuclear costs are also below those needed for solar, offshore wind or BESS facilities.

As a result, as indicated on the chart above, the proposed energy policy of retaining 9,500 MW of existing fossil units while adding 10,000 MW of new natural gas and nuclear generation by 2035 would only increase residential rates to about 24 cents/kwhr, an annual increase of 1.5%/yr. Rates for commercial and industrial users would see similar reductions as for residential customers compared with the current EMP.

Conclusion

NJ has an electricity supply crisis that is resulting in unacceptable ratepayer cost increases and diminished reliability leading to potential power outages. This is the result of failed EMP mandates for renewables and increasing our dangerous and costly reliance on PJM imports. With the complete failure of the offshore wind program, reliance would have to now be placed on massive and unattainable amounts of solar, onshore wind and battery storage. For the reasons described above, this is neither technically nor economically feasible. The current EMP, even if it were achievable, would double rates in ten years and make NJ unaffordable for residents and businesses.

NJ needs to take charge of its own energy destiny with reliable, affordable proven technology like natural gas and nuclear power and break the cycle of dependence on PJM. The alternative energy policy proposed herein, in which existing fossil generation is retained while adding 10 GW of new baseload or dispatchable natural gas and nuclear capacity in the next ten years will achieve the desired result – reliable, affordable power while minimizing carbon emissions.

It is hoped the NJ legislature will recognize the need for a new workable, affordable energy policy such as described herein and reject calls for a continuation of the failed NJ EMP.

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The Author

Edward P. O'Donnell is a principal in Whitestrand Consulting LLC. He has spent 35 years in the nuclear power industry as an engineer, manager and executive with responsibilities for design and licensing of numerous plants in the US and abroad. He was also responsible for corporate planning and rate matters for a NJ nuclear utility and has testified in utility rate proceedings before the NJ BPU.

He was responsible for managing the successful sale of nuclear units in NJ and PA and as a consultant for advising clients on the sale and purchase of nuclear plants. In this role he forecasted future costs and performance of plants for re-financing as merchant power suppliers in a de-regulated electrical energy market and performed analyses of the economic viability of nuclear plants in comparison with alternative fossil and renewable energy facilities.

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