Reliability Before Retirement:
Reassessing New Jersey's 2024 Energy Master Plan: A Framework for Affordable, Reliable Energy

A REPORT FOR THE GARDEN STATE INITIATIVE

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AUGUST 2026

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Executive Summary

New Jersey can pursue cleaner electricity without treating reliability and affordability as afterthoughts. The problem with the 2024 New Jersey Energy Master Plan (EMP) is not that it seeks lower emissions. The problem is that the current 2035 pathway asks ratepayers, businesses, and the grid to absorb execution risk before replacement resources are proven, interconnected, accredited, and affordable.

Energy strategy should be evaluated against three core objectives: affordability, reliability, and sustainability. In practice, that means ensuring replacement resources are in place before existing generation is retired. New Jersey should not retire or restrict dependable energy resources until replacement resources can provide comparable reliability, with transparent analysis demonstrating that the transition is both technically feasible and affordable for consumers. New Jersey's clean-energy transition should be grounded in current system realities: nuclear baseload generation, gas-fired dispatchable capacity, PJM market access, and a limited but expanding portfolio of renewable and storage resources.

New Jersey's 2035 clean-electricity target depends on a series of ambitious assumptions. Meeting the plan targets would require major transmission upgrades, substantially expanded storage capacity, effective demand management, dependable regional imports, preserved baseload and dispatchable resources, and a replacement strategy that no longer assumes offshore wind will arrive on schedule or at acceptable cost. Progress toward that goal should be guided by measurable readiness benchmarks, transparent cost analysis, and safeguards for reliability and affordability.

Key Findings

- **New Jersey's energy future must be grounded in the realities of today's electric grid, not the aspirations of tomorrow's**. The state generated approximately 60 million MWh of electricity in 2024, while retail sales exceeded 73 million MWh, meaning New Jersey already depends on nearly 20 percent of its total electricity from regional imports to meet demand, a number that can rise during peak periods. Any transition strategy must therefore account not only for in-state resources but also for continued access to PJM markets, interstate transmission, and dependable regional generation.
- **Natural gas remains the backbone of New Jersey's dispatchable electricity system**. The latest federal generator inventory shows approximately 10,842.8 MW of operating natural-gas summer capacity in April 2026, about two-thirds of the state's operating summer capacity. As a result, any strategy that seeks to reduce the role of natural gas must first demonstrate how equivalent reliability, capacity, and grid flexibility will be maintained.
- **Existing nuclear generation is the largest source of clean firm power in New Jersey's electricity system.** The federal generator inventory shows 3,458.9 MW of operating nuclear summer capacity. Because this output is both carbon-free and continuously available, it plays a central role in maintaining reliability while intermittent resources expand. New Jersey should build on this foundation by preserving and extending its nuclear capability for the next generation of reliable, clean electricity.
- **Storage is useful but it is not a substitute for firm capacity.** The current inventory lists 109.7 MW and 111 MWh of operating battery storage, which is just 5 percent of the EMP target of 2,000 MW by 2030. This scale gap means storage can support grid flexibility and short-duration reliability needs, but it cannot yet provide the sustained backup required during extended peak demand or low renewable output. As a result, treating storage as a replacement for firm generation raises both reliability and affordability concerns, given the cost of scaling it to system-relevant levels.
- **Affordability is already a binding constraint**. New Jersey's 2024 all-sector retail electricity price was 16.29 cents per kWh, compared with 12.94 cents per kWh for the U.S. average. Affordability concerns became more acute in 2025, when New Jersey customers faced projected electricity bill increases of roughly 17 to 20 percent, depending on service territory. While multiple factors contributed, including PJM capacity-market dynamics, supply-de-

mand imbalance, regional demand growth, and delayed interconnection of new resources, the episode provides a concrete reminder that energy policy must be evaluated not only by environmental goals but also by its effect on household bills, business competitiveness, and economic growth.

» **The regional grid forecast makes the margin for error smaller.** PJM projects a 65,733 MW increase in summer peak by 2036 and a 66,980 MW increase in winter peak by 2035/36 across its region.

» **Offshore wind should be scrutinized, not assumed.** New Jersey policy includes a 7,500 MW offshore wind goal by 2035 and a broader 11,000 MW goal by 2040; however, the project pipeline has been repeatedly disrupted by cancellations, withdrawn bids, financing stress, federal uncertainty, and exposure to transmission costs. Offshore wind should no longer be treated as a central reliability or affordability assumption for 2035 planning.

Taken together, these findings point to a practical conclusion. New Jersey does not need to abandon clean-energy goals, but it does need to change the order of operations. The state should prove affordability, reliability, and grid readiness before locking in mandates that depend on uncertain deployment.

Recommended policy posture

» Retain the state's clean-energy goals, but convert the 2035 targets into a benchmarked pathway rather than an unconditional mandate.

» Require an annual public readiness scorecard for reliability, transmission, interconnection, storage duration, retail bill impact, and capacity-market exposure.

» Preserve (and possibly increase) existing nuclear and natural gas capacity until replacement resources are accredited and deliverable during summer peaks, winter peaks, and multi-day stress events without compromising affordability or system reliability.

» Re-evaluate offshore wind's viability as a dependable energy source before making new ratepayer commitments; consider baseload needs and cost analysis, including decommission plans and costs.

» Treat affordability as a central policy outcome, not an after-the-fact bill-assistance issue.

Framing the Analysis

The central question is whether New Jersey's 2024 EMP gives taxpayers and ratepayers a realistic path to cleaner energy while keeping electricity affordable and reliable. This paper evaluates policy choices through three core criteria: affordability, reliability, and sustainability. In practice, this requires that existing resources are not retired until replacement resources can maintain system reliability. New Jersey should move cleaner resources onto the system before it eliminates dependable resources off the system. The report, therefore, treats baseload and dispatchable resources as the foundation of reliability, not as residual resources to be phased down before replacements are proven.

Strengths of the EMP

While the 2024 EMP emphasizes cleaner electricity, this paper prioritizes ensuring an affordable and reliable energy supply as the foundation of energy policy, with climate objectives pursued within those constraints. A modern energy strategy should reduce emissions, improve building and transportation efficiency, and prepare the grid for changing demand.

The EMP appropriately treats the electricity system as an integrated whole. Solar, offshore wind, storage, transmission, demand response, nuclear, natural gas, and regional imports interact continuously through PJM markets and utility infrastructure.

This system-level framing is most effective where it highlights interdependence: transmission enables delivery, demand management reduces peak requirements, storage supports variability, and firm capacity ensures reliability during all operating conditions, not only periods of favorable renewable output.

Where the 2024 EMP Overreaches

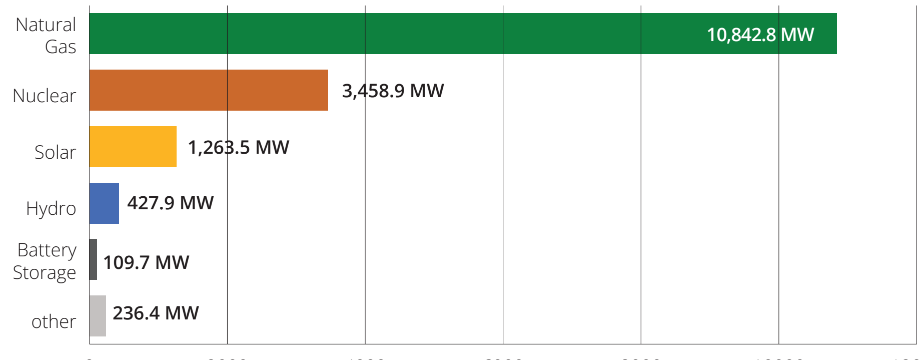
This critique should be stated precisely. The EMP does not directly mandate the retirement of fossil resources. Its Clean Electricity Standard is structured around electricity sales and functions as a mechanism to drive clean-energy investment. The practical risk arises if policy targets, procurement rules, or market signals accelerate the exit or restriction of dependable resources before replacement capacity is operating and accredited, exposing New Jersey ratepayers to avoidable reliability and affordability risks. The EMP overreaches when it treats a difficult implementation pathway as achievable without public guardrails. A 100 percent clean-electricity sales target by 2035 is a major system change. It affects household bills, business operating costs, power plant retirements, transmission construction, local siting, PJM capacity markets, offshore wind procurement, and winter reliability.

The 2035 pathway relies on a chain of assumptions: construction of the new generation must be on time, transmission must be approved, sited, and financed. Storage must scale from a small base. Electrification must increase demand without causing winter reliability problems. Regional imports must be available when New Jersey needs them. Natural gas and nuclear baseload resources must remain available enough to support reliability.

A responsible plan should include safeguards to prevent stranded costs and reliability risks from emerging before replacement resources are operating and accredited. The EMP should be structured around measurable checkpoints rather than a fixed timetable, independent of cost and delivery conditions.

FIGURE 1. NATURAL GAS REMAINS NEW JERSEY'S LARGEST OPERATING CAPACITY RESOURCE

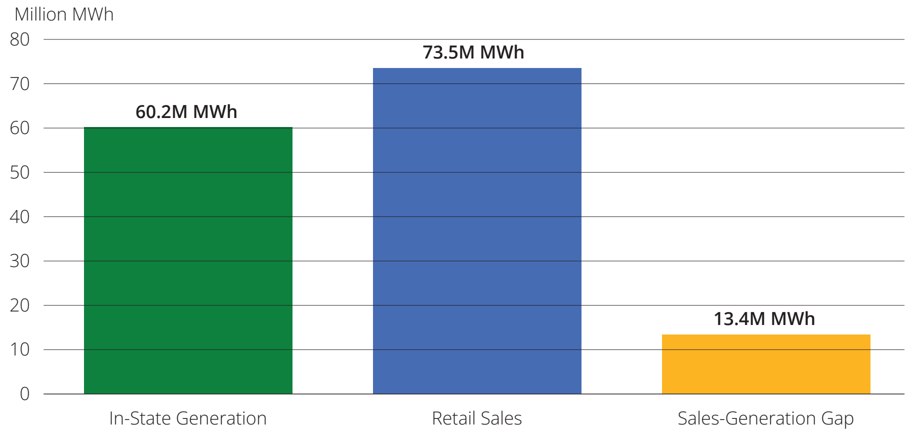
Operating Capacity by Resource, April 2026



Source: U.S. Energy Information Administration, EIA-860M Monthly Electric Generator Inventory, April 2026.

FIGURE 2. NEW JERSEY CONSUMES MORE ELECTRICITY THAN IT GENERATES IN-STATE

New Jersey Uses More Electricy than it Generates In-State



Source: U.S. Energy Information Administration, New Jersey State Electricity Profile, 2024.

The 2035 Target: An Unrealistic Mandate

The central policy question is not whether a cleaner grid is desirable. The question is whether New Jersey should mandate 100 percent clean electricity sales by 2035 before the necessary infrastructure, replacement resources, and market conditions are in place to maintain reliability and affordability. A 2035 clean-electricity system may be technically possible under aggressive assumptions. But technical possibilities are not the same as responsible public policy.

For New Jersey, reliability must be measured under the most demanding system conditions: humid summer peaks, winter cold snaps, periods of low renewable output, generator outages, transmission constraints, and times when neighboring states are competing for the same regional resources. A reliable system must perform under these conditions, not just during average operating periods. The regional grid forecast makes this point sharper. PJM, the regional grid operator for New Jersey and neighboring states, projects major growth in both summer and winter peaks over the next decade. If the whole region is short of firm capacity, imports become more expensive and less certain precisely when they are most valuable.

TABLE 1. REGIONAL LOAD GROWTH MAKES NEW JERSEY'S MARGIN FOR ERROR SMALLER

Regional forecast anchor	Scale	Implication for New Jersey
RTO summer peak forecast	222,106 MW in 2036	Peak growth tightens regional capacity conditions.
Summer peak increase	65,733 MW over 10 years	New Jersey should not assume easy access to surplus imports.
RTO winter peak forecast	204,650 MW in 2035/36	Electrification increases winter reliability risk.
Winter peak increase	66,980 MW over 10 years	Dispatchable and weather-resilient resources become more valuable.
Net energy increase	581,554 GWh over 10 years	More regional demand raises price and transmission exposure.

Source: PJM 2026 Load Forecast Report, posted January 14, 2026.

The challenge is not simply replacing the retiring generation. Electricity demand is also expected to grow substantially due to electrification, data center expansion, industrial activity, and potential broader economic growth. As a result, policymakers must replace aging capacity and add new resources quickly enough to serve a larger, more electricity-dependent economy while preserving reliability. This distinction matters because future energy planning must account not only for maintaining today's system, but also for meeting new load growth under more demanding summer and winter conditions.

Natural Gas Remains Central To System Reliability. Natural gas should not be treated as merely a temporary bridge, because it remains part of New Jersey's practical baseload and dispatchable reliability system. In New Jersey and the regional power market, natural gas provides dispatchable capacity, operating flexibility, and a price buffer when renewable output is low or demand rises unexpectedly.

This does not mean New Jersey should build gas without limits or ignore emissions. It means the state should be honest about the role of current gas generation. If the state removes or restricts gas faster than clean firm resources, transmission, storage, and demand management can replace its reliability value, ratepayers face higher risk.

The latest federal generator inventory shows 10,842.8 MW of operating natural gas summer capacity in New Jersey. That is about 66.4% of the operating summer capacity in the inventory. Since 2019, the same federal data show nearly 996.5 MW of gas summer capacity has retired. The state should not assume more retirements are harmless without a replacement test.

The practical standard should be reliability before retirement. A generation plant should only be retired when its reliability value has been replaced by resources that are built, interconnected, deliverable, and accredited for the same stress conditions.

Preserve Baseload Nuclear and Evaluate Future Development

Existing nuclear is New Jersey's most important clean baseload resource. It produces power without direct CO_2 emissions and does not depend on intermittent wind speed, sunlight, or short-duration storage. Existing nuclear capacity is one of New Jersey's most important zero-carbon, clean-energy assets. Losing that capacity would increase the scale of the challenge associated with achieving any clean-electricity objectives.

The latest federal generator inventory lists 3,458.9 MW of operating nuclear summer capacity in April 2026. That capacity should be treated as the baseload foundation of the state's cleaner electricity strategy.

New Jersey should pursue the option of future nuclear development as part of a reliable, affordable, and lower-emission electricity system. Small modular reactors and other advanced nuclear technologies are unlikely to contribute meaningfully to New Jersey's 2035 targets, but they could play an important role in the 2040s and beyond. New Jersey should evaluate future nuclear development using the same technology-neutral standards applied to other clean firm resources, including reliability, affordability, deployment timelines, and siting and licensing considerations.

Reevaluate the Role of Offshore Wind

Offshore wind should no longer be treated as a dependable centerpiece of New Jersey's 2035 electricity strategy. Its role in New Jersey's electricity system should be reassessed in light of project cancellations, withdrawn bids, transmission uncertainty, and public-trust concerns that now characterize the sector in the state. The original policy case for offshore wind rested on several promises: large-scale clean energy, economic development, jobs, transmission investment, and a path toward meeting the state's clean-electricity goals. Those benefits remain possible only in theory at this point.

The challenges facing offshore wind development in New Jersey emerged over several years rather than from a single political event. In 2023, Ørsted ceased development of Ocean Wind 1 and Ocean Wind 2. In 2024, transmission-planning uncertainty became more visible as the Board of Public Utilities paused the State Agreement Approach 2.0 process while cost-allocation and regional transmission issues remained unresolved. In 2025, New Jersey's fourth offshore wind solicitation concluded without an award after multiple withdrawals left only a single final bidder, and NJBPU cited Shell's withdrawal from Atlantic Shores, federal uncertainty, and permitting risk in concluding that an award would not be responsible at that time. By 2026, the State Agreement Approach transmission initiative was terminated after the state concluded that there were no viable offshore wind generation projects with a clear pathway to commercial operation on the timeline anticipated by state goals and related grid investments.

Taken together, this chronology shows that New Jersey's offshore wind problem is not limited to one project or one election cycle. It reflects broader concerns regarding cost, financing, deliverability, permitting, transmission planning, and execution risk.

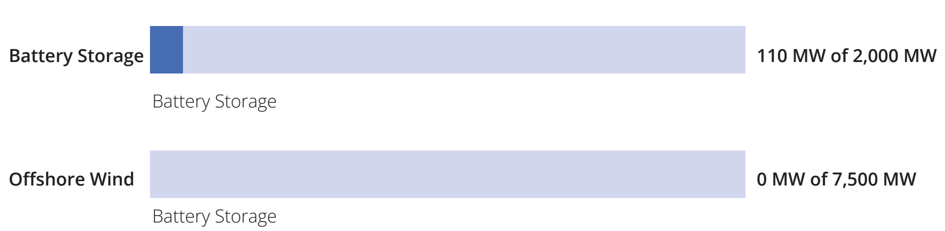
The policy conclusion is straightforward. Offshore wind should not be treated as baseload or firm replacement capacity, nor should it be used to justify the retirement or restriction of dependable resources. It should not be assumed as a bankable component of New Jersey's 2035 planning framework. Any future procurement should be based on transparent total-cost accounting, including Offshore Renewable Energy Certificate (OREC) costs, transmission requirements, cancellation and permitting risk, decommissioning costs, and full ratepayer exposure if projects do not materialize.

As with other major energy infrastructure investments, decommissioning obligations should be identified and transparently accounted for before project approval so that policymakers and ratepayers understand the full cost of the resource over its useful life. Consistent cost-accounting standards improve transparency and allow competing technologies to be evaluated on a more comparable basis.

Future development should proceed only where projects demonstrate credible financing, durable federal and state approvals, realistic construction schedules, enforceable performance security, and clear evidence that ratepayers are not absorbing speculative development risk.

FIGURE 3. CURRENT DEPLOYMENT OF SELECTED EMP SOURCES REMAIN FAR BEHIND TARGET DEPLOYMENT

Selected EMP Targets Versus Current Deployment



Sources: New Jersey Board of Public Utilities, 2024 New Jersey Energy Master Plan; U.S. Energy Information Administration, EIA-860M Monthly Electric Generator Inventory, April 2026.

Note: Offshore wind is shown as 0 MW operating. The chart should not be read as a forecast of deliverable 2035 capacity.

Storage Helps, But Duration Matters. Battery storage can improve grid flexibility and help manage short periods of peak demand. However, the most recent U.S. grid-scale lithium-ion storage deployment has been concentrated in systems with four hours or less of duration. Four-hour storage can be valuable for daily balancing, solar shifting, and short peak events. Still, it is not designed to sustain reliability through multi-day winter storms, prolonged heat waves, extended generator outages, or lengthy periods of low renewable output. For New Jersey, this means storage should be treated as a complement to baseload and firm capacity, not as a full replacement for them under current technology and deployment levels. Duration matters as much as installed MW when evaluating storage's reliability contribution.

Affordability Is a Taxpayer and Competitiveness Issue

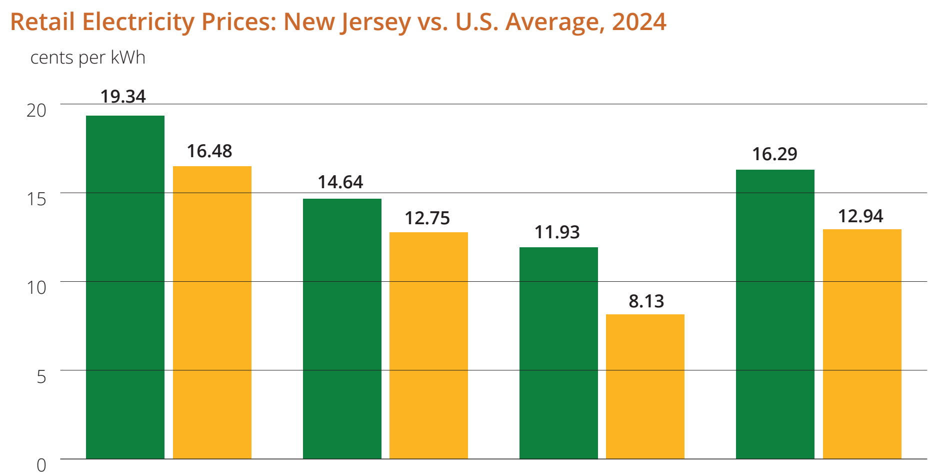
The affordability issue is concrete. Electricity costs are reflected in household budgets, small business margins, industrial competitiveness, and the operating costs of schools and municipalities. They also influence New Jersey's ability to attract and retain employers. Higher bills do not only affect low-income residents; they affect the state's broader economic base. New Jersey operates from a high-cost electricity position. Available federal data show New Jersey's average all-sector retail electricity price was 16.29 cents per kWh in 2024, 20.5 percent higher than the U.S. average of 12.94 cents per kWh. For industrial customers, the gap was larger: 11.93 cents per kWh in New Jersey compared with 8.13 cents per kWh nationally.

Those affordability concerns became immediate in 2025. NJBPU reported that the Basic Generation Service auction would produce projected average monthly bill increases of approximately 17 to 20 percent beginning June 1, 2025. The Board later described the situation as a utility affordability crisis and approved bill-credit measures to reduce pressure on residential customers. That episode should be treated as a warning for long-term planning: when supply, capacity-market, interconnection, and demand-growth pressures converge, ratepayers experience the transition as a bill shock, not as an abstract planning problem.

The affordability problem is also a public-health and public-safety issue. The New Jersey Division of Rate Counsel has warned that vulnerable households facing unaffordable bills may go without heat, air conditioning, medical equipment, or other necessities. That concern is especially important during extreme heat or cold, when electricity affordability can affect health and safety, not just household budgets. Policies that increase energy costs faster than households can reasonably absorb may undermine public support for otherwise beneficial environmental objectives.

This is significant because manufacturing and other energy-intensive businesses compete across state lines on cost and reliability. A policy that raises power costs faster than competitors can erase the economic value of other incentives. For households, higher electricity prices also make electrification less attractive. A clean-energy plan that raises costs to the point that electric heating, vehicles, or appliances become unaffordable for low-income families creates a direct affordability constraint on the transition.

FIGURE 4. NEW JERSEY RETAIL ELECTRICITY PRICES EXCEED THE NATIONAL AVERAGE



Source: U.S. Energy Information Administration, State Electricity Profile, Table 8, 2024.

These affordability pressures make implementation discipline essential. The next sections explain why siting, permitting, transmission, procurement, and regional experience should shape the policy guardrails before New Jersey commits to a revised portfolio pathway.

Bringing Implementation Constraints into the Core Framework. The EMP often treats implementation primarily as an engineering and procurement problem. In practice, implementation also depends on permitting, siting, land use, litigation, environmental review, transmission costs, interconnection, and broader public constraints. New Jersey should make implementation milestones public. If transmission, storage, or demand management falls behind, the state should automatically adjust the pace of mandates rather than assuming the target can still be achieved at the same cost or without implications for reliability.

State Comparisons Reveal a Consistent Policy Pattern. Other states do not offer a single template for New Jersey, but they do offer clear lessons. The objective is not to replicate Texas, California, New York, New England, or Pennsylvania, but to understand what each experience reveals about cost, reliability, procurement, and dispatchable capacity.

TABLE 2. PLANNING LESSONS FROM OTHER STATES AND REGIONS

State or region	Planning lesson
California	An ambitious energy policy can lose public support if affordability and infrastructure costs are not visible and controlled.
New York	Offshore wind procurement can be disrupted by financing and supply-chain risk; targets need off-ramps.
New England	Winter reliability risk grows when a region depends on constrained gas infrastructure and limited firm alternatives.
Pennsylvania	Abundant natural gas gives the PJM region a dispatchable supply that New Jersey benefits from through imports and market pricing.
Texas	Reliability failures can occur under any resource mix when planning, weatherization, and market rules do not support stress conditions.

Source: GSI analysis of regional energy-policy experience, PJM market materials, EIA data, and cited state-policy materials.

Policy Guardrails

The EMP should be structured around measurable, public guardrails that translate clean-energy ambition into practical policy. If those benchmarks are not met, mandates should automatically pause or adjust.

TABLE 3. RECOMMENDED GUARDRAILS FOR A REVISED EMP

Guardrail	Operating standard	Ratepayer protection
Reliability before retirement	No forced retirement or restriction of firm capacity unless replacement capacity is operating, deliverable, and accredited.	Protects households and businesses from avoidable reliability risk.
Affordability trigger	Publish projected bill impacts by sector, including direct project costs, ratepayer-funded subsidies, transmission investments, decommissioning costs, and other long-term liabilities borne by consumers, and pause mandates that exceed a defined ratepayer exposure threshold.	Makes the full consumer cost of policy choices visible before ratepayers are committed.
Grid-readiness benchmarks	Track interconnection, transmission, storage duration, demand-response performance, and winter resource adequacy.	Separates real progress from paper compliance.
Technology-neutral clean firm screen	Evaluate nuclear, geothermal, gas with verified low-carbon fuels or capture, long-duration storage, and other firm options on cost and dependability.	Avoids overreliance on any single technology pathway.
Offshore wind re-evaluation	Do not consider offshore wind as baseload, firm capacity, or a dependable 2035 replacement resource unless projects are financed, permitted, deliverable, supported by transparent OREC and transmission-cost accounting, and accompanied by clear decommissioning obligations.	Prevents ratepayers from bearing costs for speculative projects, stranded transmission investments, cancelled procurements, or long-term liabilities that were not disclosed before approval.
Annual public scorecard	Report progress in plain language with source data and ratepayer impacts.	Builds public trust and makes course correction normal.

Source: GSI analysis.

Preserve, Build, Prepare: A Practical Energy Portfolio for a New EMP in New Jersey

New Jersey should define its energy portfolio by timing and system role, not merely by a technology target. The practical path is to preserve system reliability, build only what is cost-effective and deliverable in the medium term, and prepare future clean-firm options before existing baseload resources are taken offline.

This approach does not reject cleaner energy. It changes the order of operations. New Jersey should add new resources *before* it retires or restricts dependable resources. The state's revised portfolio should therefore be organized around three phases: short-term preservation, medium-term disciplined buildout, and future clean-firm investment.

TABLE 4. A PRACTICAL NEW JERSEY ELECTRICITY PORTFOLIO

Planning horizon	Resource or tool	System role	Recommended action
Short term: preserve reliability now	Existing nuclear	Clean baseload foundation	Preserve existing units and treat them as the anchor of New Jersey's clean baseload supply.
	Natural gas	Baseload supply, dispatchable reliability, and price buffer	Retain existing capacity and add reliable, deliverable resources; maintain or expand capacity as needed for system reliability.
	PJM market access and regional imports	Regional flexibility	Preserve PJM access, but do not assume unlimited imports during regional scarcity.
	Demand management	Peak reduction and customer flexibility	Use as a verified reliability tool, especially during summer and winter stress hours.
Medium term: build only what is cost-effective and deliverable	Utility Solar	Cost-effective clean energy	Expand where economics, siting, and interconnection are practical; pair with demand management and storage.
	Battery storage	Short-duration balancing and peak support	Scale realistically and report both MW and MWh so duration and reliability value are visible.
	Transmission	Delivery infrastructure	Sequence mandates after interconnection and siting progress, not before.
	Offshore wind	Conditional clean-energy option, not baseload	Evaluate through technology-neutral clean firm screen: feasibility questions persist regarding financing, permitting, infrastructure, and cost.

Planning horizon	Resource or tool	System role	Recommended action
Future investments: prepare clean firm options	Advanced nuclear and small modular reactors	Long-term clean baseload option	Evaluate through a technology-neutral clean-firm screen; do not count as near-term supply before licensing, siting, cost, and construction timelines are clear.
	Long-duration storage	Multi-hour or multi-day reliability support	Study and pilot to determine where it can provide reliability value beyond short-duration batteries.
	Other clean firm resources	Future firm capacity	Evaluate geothermal, low-carbon fuels, carbon capture, or other firm resources based on cost, dependability, emissions, and deliverability.

Source: GSI analysis based on EIA, PJM, and 2024 EMP source material.

This portfolio recognizes that sequencing matters and does not freeze today's system in place.

New Jersey should preserve existing baseload resources and consider additional nuclear and natural gas capacity where it is cost-effective and deliverable, expand cost-effective solar, scale storage with realistic duration assumptions, upgrade transmission before mandates depend on it, and preserve PJM import flexibility while recognizing regional limits during scarcity.

Offshore wind should move from the core 2035 reliability portfolio to the conditional long-term portfolio. It may still contribute clean energy if projects become financeable and deliverable, but it should not be used to justify near-term retirements, ratepayer exposure, or transmission commitments that depend on uncertain generation.

New Jersey's current Energy Master Plan is unrealistic, insufficiently grounded in baseload reliability, and risks creating an energy system that is neither affordable nor fully capable of meeting the state's demand requirements. A reassessment of direction is warranted.

This report proposes affordability, reliability, and sustainability as the guiding standard for New Jersey's future energy policy. A cleaner grid is only viable if baseload reliability is protected, ratepayer costs are controlled, and replacement resources are proven deliverable before dependable capacity is reduced. New Jersey's energy future will depend on whether it can align ambition with execution, ensuring that the transition strengthens rather than undermines the state's economic base, affordability, and system reliability under real-world conditions.

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Appendix: Key Data Anchors

Appendix A summarizes the key data anchors used in this analysis. The appendix is intended to make the report's major figures transparent and auditable, including capacity, generation, sales, retail price, resource mix, PJM load-growth, and selected EMP target figures.

Formal source titles are used in this appendix for auditability. EIA-860M is the federal government's monthly generator inventory. Resource-level operating capacity figures from EIA-860M are GSI calculations using the April 2026 generator inventory filtered for New Jersey operating units and summarized by energy source/technology. The State Electricity Profile is the federal state-level electricity dataset used for annual sales, generation, capacity, and price figures.

APPENDIX TABLE A1. CORE SOURCE NUMBERS

Topic	Number	Source
Net summer capacity	16,606 MW	EIA New Jersey Electricity Profile 2024
Net generation	60,175,245 MWh	EIA New Jersey Electricity Profile 2024
Retail sales	73,531,424 MWh	EIA New Jersey Electricity Profile 2024
Average retail price	16.29 cents/kWh	EIA New Jersey Electricity Profile 2024
Operating gas summer capacity	10,842.8 MW	EIA-860M April 2026
Operating nuclear summer capacity	3,458.9 MW	EIA-860M April 2026
Operating solar summer capacity	1,263.5 MW	EIA-860M April 2026
Operating battery storage	109.7 MW / 111.0 MWh	EIA-860M April 2026
PJM summer peak increase	65,733 MW by 2036	PJM 2026 Load Forecast Report
PJM winter peak increase	66,980 MW by 2035/36	PJM 2026 Load Forecast Report
EMP clean electricity target	100% clean electricity sales by 2035	2024 New Jersey Energy Master Plan
EMP offshore wind target	7,500 MW by 2035	2024 New Jersey Energy Master Plan
Broader EMP offshore wind target	11,000 MW by 2040	2024 New Jersey Energy Master Plan
EMP storage target	2,000 MW by 2030	2024 New Jersey Energy Master Plan

APPENDIX TABLE A2. OPERATING CAPACITY BY RESOURCE

Resource	Summer MW	Share of operating (MW)	System role
Natural gas	10,842.8	66.4%	Dispatchable reliability and price buffer
Nuclear	3,458.9	21.2%	Clean firm energy anchor
Solar	1,263.5	7.7%	Clean energy with variable output
Hydro	427.9	2.6%	Small firm or flexible contribution
Battery storage	109.7	0.7%	Short-duration balancing
All other resources	236.4	1.4%	Small residual categories

Source: EIA-860M April 2026 generator inventory.

APPENDIX TABLE A3. SELECTED EMP TARGETS VERSUS CURRENT DEPLOYMENT

Target area	Current benchmark	EMP target	Planning implication
Clean electricity sales	Not yet 100%	100% clean electricity sales by 2035	A target needs readiness checkpoints before it becomes a binding mandate.
Battery storage	109.7 MW and 111.0 MWh operating	2,000 MW by 2030	Storage should scale, but current deployment is small and duration matters.
Offshore wind	0 MW operating offshore wind	7,500 MW by 2035; 11,000 MW by 2040*.	Re-evaluate as a conditional long-term resource; do not count as baseload or firm replacement capacity for 2035 planning..
Class I RPS	Procurement obligation	50% Class I by 2030	An energy procurement target is not the same as a reliability plan.

Sources: 2024 New Jersey Energy Master Plan; EIA-860M April 2026 generator inventory.

*The IEP Appendix models different offshore wind levels by scenario.

APPENDIX TABLE A4. 2024 RETAIL ELECTRICITY PRICES

Sector	NJ cents/kWh	U.S. cents/kWh	NJ premium	Practical takeaway
Residential	19.34	16.48	2.86	Higher household bills make electrification harder to sell.
Commercial	14.64	12.75	1.89	Higher operating costs hit small businesses and service employers.
Industrial	11.93	8.13	3.80	The industrial premium matters for manufacturers and site selection.
All sectors	16.29	12.94	3.35	Headline affordability anchor: New Jersey is about 26% above the U.S. average.

Source: EIA State Electricity Profile 2024, Table 8, New Jersey and United States workbooks.

Glossary

Baseload: The dependable supply of electricity that can operate continuously or predictably to meet the system's underlying demand. In this report, baseload is used to describe resources that support reliability across ordinary conditions as well as stress periods.

Capacity: The ability to produce or discharge electricity at a moment in time, usually measured in MW.

Dispatchable: A resource that can be called on when needed, subject to fuel, maintenance, and operating constraints.

Firm capacity: Capacity that can be counted on for reliability planning under defined system conditions.

Generation: The amount of electricity produced over time, usually measured in MWh.

Interconnection: The process of connecting a resource to the grid so it can deliver power safely and reliably.

Offshore Renewable Energy Certificate (OREC): A state-created credit used to support offshore wind development. Under New Jersey's program, ORECs represent the environmental attributes of one megawatt-hour of offshore wind generation from a qualified project, and OREC-related costs can be recovered from ratepayers through a non-bypassable surcharge.

PJM: The regional transmission organization that coordinates wholesale electricity markets and grid reliability for New Jersey and other states.

Storage MW and MWh: MW describes how much power a battery can discharge at once. MWh describes how long it can sustain that discharge.