

New Jersey's Energy Future: At What Cost to You?



A report from the Garden State Initiative on the questions every New Jerseyan should be asking about our state's Energy Master Plan

Table of Contents

About GSI/Attribution	1
Executive Summary	2
Introduction	4
Our Report	5
Impact of renewables rise on electricity bills	6
Impact on state's economy, revenues and jobs	9
Impact on transportation and construction	9
Impact on vital commercial fishing industry and tourism	11
Conclusion	13
Sources	14

Our Mission

The Garden State Initiative is a 501(c)3 nonprofit organization dedicated to strengthening New Jersey by providing an alternative voice and commonsense policy solutions in the state -- solutions that promote new investment, the growth of jobs, the creation of economic opportunities, and innovation to the benefit of all New Jerseyans.

GardenStateInitiative.org

Research and analysis conducted by

Regina M. Egea, President, Garden State Initiative

Ms. Egea completed her career at AT&T as Sr. Vice President of Global Business Sales Marketing after holding a wide range of leadership positions with global operational responsibilities. She was elected to her local governing body and board of education prior to serving in several capacities at the state level. Ms. Egea was Governor Chris Christie's chief of staff from 2015 to 2016. She joined the Christie Administration in 2010, first as the State Treasurer's chief of staff, where she was instrumental in pension reforms enacted in 2011, and then as director of the authorities Unit in the Governor's office in 2012.

William J. Smith, Director of Communications, Garden State Initiative

Mr. Smith is a seasoned communications executive with diverse experience in developing communications strategies in government, public transportation and healthcare. He received a Bachelor of Arts degree in political science and an MBA in management from Wagner College.

New Jersey's Energy Future: At What Cost to You?

A report from the Garden State Initiative on the questions every New Jerseyan should be asking about our state's Energy Master Plan

Executive Summary

New Jersey's ambitious Energy Master Plan (EMP), released in January 2020, is constructed to combat climate change and directs the rapid growth of renewable energy sources like wind and solar.

New Jersey's 9.3 million residents should support and promote efforts to reduce pollutants that impact climate change because the threat of serious climate impacts on our state is real. This progress should include growth in renewable energy sources. Indeed, some oil and other fossil-fuel companies are joining in this effort to transition to cleaner energy by working to pare the emissions their fuels produce and by helping develop pollution-reducing technologies.

While the EMP anticipates several beneficial changes, the EMP in its biggest oversight neglects to provide New Jerseyans – who already pay the 10th highest electricity rates and highest lifetime tax burden¹ among the states – with an estimated price tag impacting their monthly utility bills. Business and industry also need to know what they face in a state with the reputation of having the highest cost of doing business. Only recently was an outside consultant identified by the Board of Public Utilities (BPU) to produce a cost analysis, but it is not deliverable for 18 months – by year-end 2022. Meanwhile, the march ahead continues to spend billions implementing this plan. That cart-before-the-horse approach alone should give all residents pause.

Notably, the experience of other states sprinting ahead to transition to renewables illuminates the vulnerability to rapidly rising costs to ratepayers and the risk management required to ensure the quality and reliability of available power. Simply consider California's experience. With wind and solar now contributing 29% of its electric power, California's average monthly residential cost for electricity in May 2020 was 56% above the average elsewhere while its commercial electric rate was 71% higher and its industrial rate was 117% higher.² One has to ask: Why burden ratepayers with the high costs that always comes when an industry is starting out? Where are the private investors who share the optimistic financial future impacts on California and see a positive return on their investments? Why are only California ratepayers being burdened by these uncompetitive costs to light and heat their homes and businesses?

New Jerseyans need to know so much more than is contained in the EMP. They need to know:

- **How likely it is that New Jersey can meet the EMP's bold goals** of becoming 50% carbon neutral by 2030 and 100% by 2050. The state will miss the goal it set for itself in 2018 to have renewables generate 21% of the state's electricity by year-end; that percentage last year was 5.3%. So, how can New Jersey reach the 35% interim requirement by 2025,³ let alone the 50% objective by 2030.
- **The timing and cost to each of our residents who will be required to switch to electric from gas heat** (that is besides the expected hefty rise in their electricity bill). The EMP puts the cost to switch at \$7,500 but in Massachusetts, the cost to convert to electric heat pumps cost roughly \$23,000⁴ – not including the purchase of a new electric stove and grill.
- **The EMP's impact on economic growth, revenue and jobs.** Besides several glossy predictions, specifics remain a mystery. While the state likely will benefit from the flow of federal funds for wind energy projects off its coast, many of the anticipated new jobs will require job training. And substantial job-training funds have yet to generate many new jobs at new facilities like the Paulsboro Marine Terminal.
- **The effects on key sectors of the state's economy** – especially tourism, fishing, transportation and construction. How thorough the examination of wind farms' 850-foot-tall turbines visible from the Jersey coast is already being questioned by the tourist trade organizations – the state's second-biggest industry. The commercial fishing industry, the fifth-largest industry, recognizes that a variety of environmental impacts associated with offshore and onshore wind power must be addressed and mitigated. Specifics are absent. The EMP plan to electrify the transportation sector, including transportation systems to reduce greenhouse gas emissions, skirts how it can meet the specific goals of substituting electric vehicles for gas-powered vehicles and supplying enough electric charging stations by 2050. And housing and commercial contractors are now asking questions about a plan to require environmental impacts of new projects.
- **How much of a real difference the EMP can make on climate change.** Recognizing that New Jersey does not exist in a controlled bubble, our pace of investing needs to be balanced with the recognition of counterproductive actions of our neighbors and global competitors. One energy consultant estimates its benefit will equal three-to-four days of the pollution that China produces.

Contrary to industry trends, New Jersey's residential electricity rates climbed 4.6% last year – the largest rise among nearby states. Policymakers and lawmakers cannot ignore the question of cost when setting energy policy. We cannot accept incomplete plans with aggressive policy objectives that inadequately consider the economic impact on households, especially of lower-income and retired residents.

In moving ahead with the EMP, the Administration and lawmakers must strike a balance between moving to an inexorable reliance on renewables for sustainability's sake, and the economic burdens that New Jerseyans already bear. So much of this remains unanswered. These are the vital questions of residents and business owners alike that, until answered, should preclude any action on the EMP's major elements until – at the least – the essential cost analysis is finished and publicly communicated fully so residents and businesses can respond.

Introduction

In January 2020, like every governor before him since 1977, New Jersey Governor Phil Murphy delivered an Energy Master Plan (EMP).⁵ This strategic vision for the state's energy future is the most ambitious yet, striving to manage carbon emissions, rising sea levels along the Jersey coast and other climate change impacts to health by phasing out natural gas and other traditional energy sources and relying on offshore wind and solar power.

The objective: Make the state 50% carbon neutral by 2030 and 100% by 2050 while generating the electricity New Jersey requires for its homes, business and industry, and all of its vehicles.

While the need clearly exists to minimize the state's carbon footprint and expand the growth of renewables to reduce emissions, the Administration has communicated little since the EMP's unveiling nearly a year-and-a-half ago to answer the uppermost questions it raises. Unknown is its immense cost and most importantly, who will foot the bill. While many have attempted to put a price on countering a climate catastrophe, New Jerseyans poor and rich alike deserve to get a solid idea of how much the EMP will lighten their wallets. These are unacceptable omissions.

The EMP plan did not include a cost analysis, and an outside consultant being retained to do that will require 18 months – until December 2022 – to complete the analysis. Until then, New Jerseyans will be in the dark about how high their electric bills will climb, especially since natural gas and nuclear power that will be displaced today generate 93% of the state's electricity⁶ while wind and solar accounts for just 5.3%. Already, the state's residential electricity rate is the third highest versus five neighboring or nearby states and the 10th highest nationwide,⁷ while the rate New Jersey industries pay is second highest among nearby states and ninth highest nationwide.⁸

Also, the EMP only superficially references how the EMP will impact the state's critical industries – including tourism, fishing, construction and transportation sectors – and the economy in general. Business owners large and small are eager to learn how the EMP's costs will affect New Jersey's high cost of doing business that ranks 50th in the Tax Foundation's 2021 State Business Tax Climate Index⁹ as well as their bottom line.

This Garden State Initiative report strives to shed much-needed light on what is the most underdiscussed matter on the governor's priority list for New Jersey.

Many of the EMP's biggest issues already can be gleaned to a large degree from what's already known or signaled – plus what's happened elsewhere with other states' climate change initiatives. What is plain is that the current EMP will generate huge costs and repercussions that residents and businesses deserve to learn, digest and respond to.

Our Report

In brief, the Administration's Energy Master Plan envisions achieving its clean energy and emission-reduction objectives through these key initiatives:

- Phasing out the use of natural gas and nuclear power by accelerating growth of renewables – offshore wind and solar energy – to generate electricity and power vehicles.
- Reducing energy consumption and emissions from the transportation sector by encouraging electric vehicles, electrifying transportation systems and using technology to trim emissions.
- Improving energy efficiency and conservation by enacting specific energy efficiency standards for natural gas and electricity, respectively.
- Decreasing energy use and emissions from the building sector by requiring builders to assess climate change impacts to clear their projects.

The nonprofit, independent research group Rocky Mountain Institute developed the decarbonization study for the EMP and the New Jersey Board of Public Utilities (BPU) has been charged with constructing and overseeing the implementation effort. Inconsistent with long-standing commitments to transparency, an outside consultant's cost analysis won't be finished for 18 months. Yet the BPU already has approved major investments subsidized by ratepayers authorizing utilities to spend \$1.6 billion to impel customers to reduce gas and electric use.¹⁰

The BPU and others have evaded three pressing deadline-related issues:

1. Why New Jersey will miss meeting the requirement set by the BPU in 2018 that 21% of the electricity sold in the state by this year be generated from renewables.
2. In light of this, how can the state expect to reach the 35% requirement by 2025.¹¹
3. How the state will meet the EMP's 50% renewables goal by 2030 and the 100% objective by mid-century and at what cost to our residents.

Although the EMP's costs to residents, businesses and industry remain uncalculated by the BPU, this report will make clear the tremendous financial impact of the plan's four major objectives to a large degree from what already is known and what the experience has been elsewhere.

Consider these early appraisals:

Impact of a precipitous rise in spending on electricity bills

The Administration hasn't adequately demonstrated that the environmental advantages of replacing a relatively stable energy structure of clean nuclear and natural gas will be counterbalanced for our nearly 10 million residents and businesses. New Jersey has already made measurable progress on the clean energy front.

In the past two decades, the state's carbon footprint has shrunk by over 10% even while its economy has grown significantly. Underscoring the overall environmental improvement, an analysis¹² of U.S. government emissions data finds that key pollutants across New Jersey fell by as much as 96% between 1990-2017 even as the state's energy demand increased significantly. In that period, sulfur dioxide emissions declined 96%; nitrogen oxides, 77%; volatile organic compounds, 75%; and carbon dioxide, 15%.

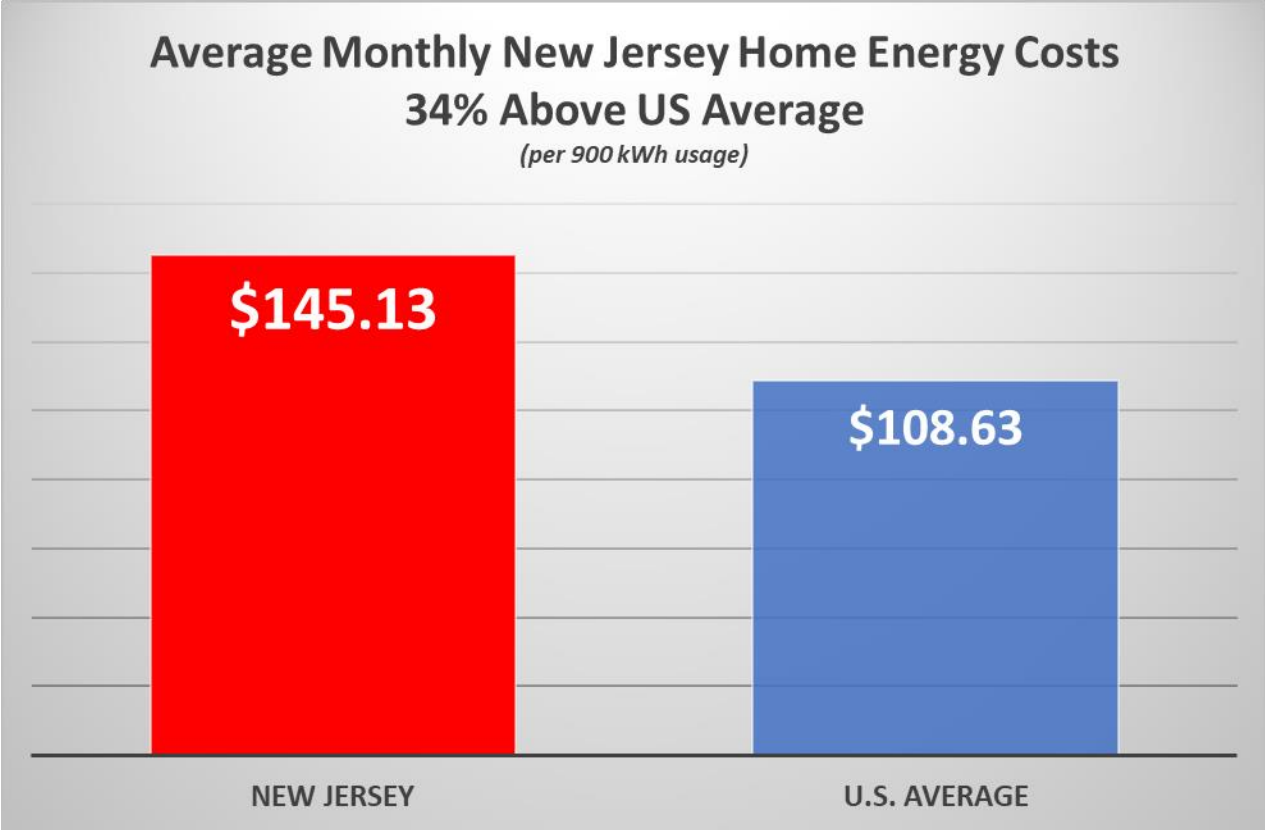
Transitioning too quickly to a clean energy future will prove expensive¹³ and regressive and residents will pay the hefty price tag, maintains Frank Felder, Ph.D., research professor at Rutgers' Bloustein School of Planning and Public Policy.¹⁴ BPU's president agrees the plan is costly,¹⁵ and two Administration policymakers bluntly told a public forum¹⁶ the public must accept paying more for energy.

That's because growth of immature offshore wind energy facilities and the just-announced continuation of the state's \$300 million-a-year nuclear industry subsidy for at least the next three years will boost electric rates dramatically as the use of affordable and low-emission natural gas to generate electricity declines. While the nuclear power subsidy alone adds \$41 annually to the average residential utility customer,¹⁷ that source still remains below any of the renewable sources' cost structure for the same time period.

Growing dependence on wind power that by 2035 could provide half of New Jersey's electricity will raise rates substantially. The U.S. Energy Information Administration estimates that it costs \$6,542 per kilowatt to build a utility-scale offshore wind project. That is three times the cost of a new natural gas combined cycle plant when operating and fuel costs are included.¹⁸

The EMP envisions 3,500 megawatts of offshore wind energy by 2030. That would cost nearly \$23 billion and under New Jersey's offshore wind law, ratepayers subsidize the development of wind farms with a surcharge on their monthly bills.

Contrary to industry trends, New Jersey's residential electricity rates climbed 4.6% last year – the largest rise among nearby states (as rates in four of the six states actually fell) – to 16.18 cents per kilowatt hour, compared to the U.S. average rate of 12.07 cents. That translates into a \$145.13 electric bill for a New Jersey home using 900 kWh a month, or over 30% higher versus the U.S. average of \$108.63.¹⁹ This is the typical New Jersey homeowner's electric bill at a time when low-cost natural gas contributes 36% and nuclear energy 57.5% of the energy sources to generate the state's electricity. As renewables reach the required levels the EMP envisions, electric bills will inexorably surge further ahead of other states.



Source: U.S. Energy Information Administration, January 2021 data

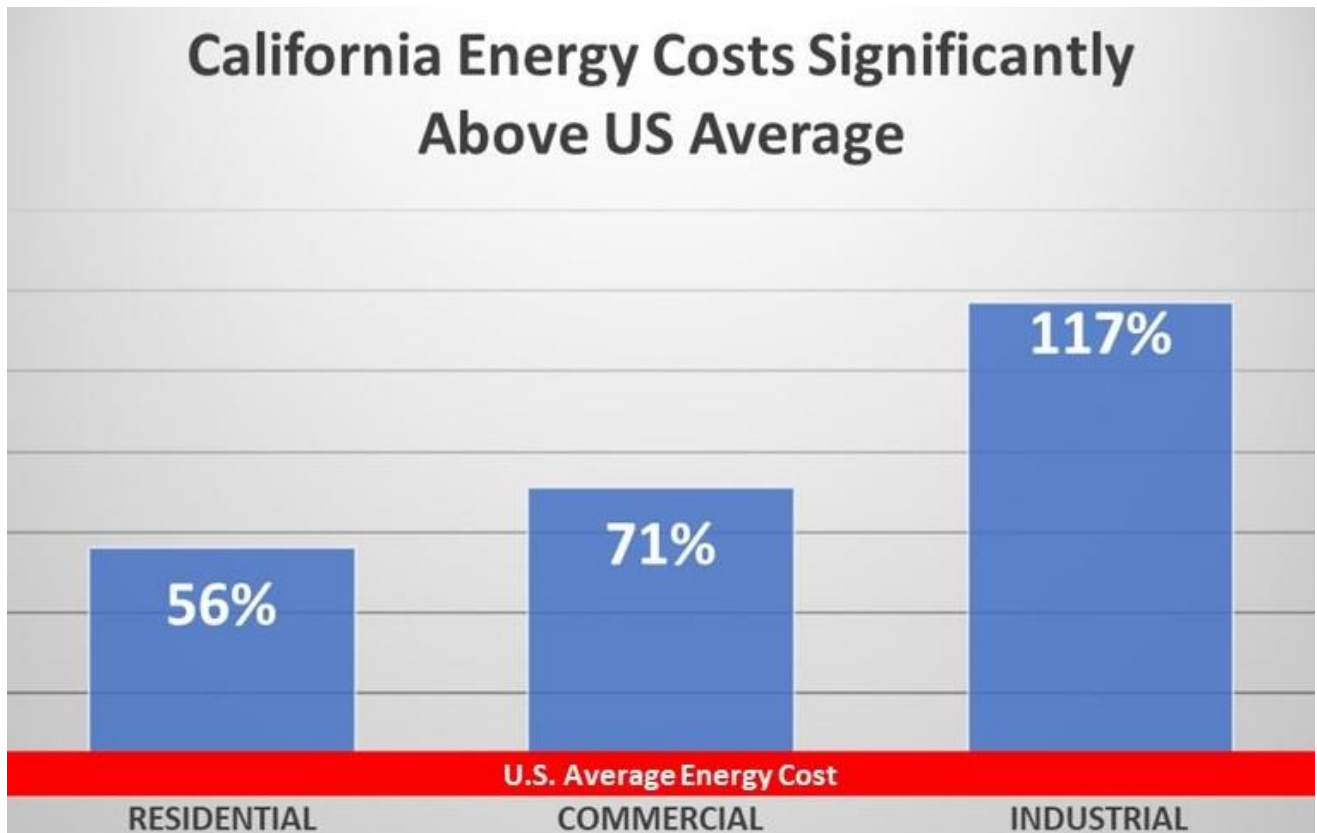
There are two other little-known reasons. Since 1999, New Jersey has had a renewable portfolio standard (RPS), a regulation that requires increased renewables production. Major RPS revisions by the state over the past decade has put its RPS goal at 54% by 2030 – and there are compliance costs to achieving progress. In 2019, New Jersey’s compliance costs grew to 7.1% of the state’s retail electricity bills, up from 6.2% in 2018. In stark contrast to nationwide trends, these costs averaged only 2.6% in states with such a standard. This certainly is contributing to our higher-than-U.S.-average cost to light and heat our homes.

Plus, because of the early stage of industry development, the current high cost of building offshore wind facilities will impact rates significantly. In 2019, the levelized cost of energy (LCOE) – the cost over a generating plant’s lifetime – was \$83 to \$174 per megawatt hour²⁰ for offshore wind energy. That contrasts with \$38 per MWh for natural gas generation. And the U.S. Energy Information Agency reports that the LCOE for new sources of power coming on board in 2026 is \$37.11 per MWh for natural gas-powered combined-cycle plants compared to \$120.52 per MWh for the offshore wind facilities New Jersey is banking on.²¹

Witness the sharp rise in states’ electric rates as wind and solar power comprise more of their electric generation mix while the early-stage industry development costs remain so much higher. In Hawaii, where those renewables account for 24% of electric power, the average monthly electricity cost is \$274.03. In California, with wind and solar contributing 29% of its electric power, the monthly cost is \$192.23. The cost is \$209.99 in Rhode Island, where wind accounts for 18% and

solar 6.3% of power generated. And Rhode Islanders will pay \$11-14 a month more for their electric bill in scenarios projecting 100% use of solar or wind power, a report by the state's Office of Energy Resources concluded this year.²²

Since 2010, when California stepped up its use of renewable energy sources to generate electricity, its average residential electric bill for the 12 months ended in May 2020 climbed 26% versus the tiny 1.6% growth for the rest of the U.S. California's average home electric bill is 56% above the average for the rest of the U.S.²³ Its average commercial electric rate is 71% above the average elsewhere and the average industrial price is 117% higher than elsewhere, the Center for Jobs and the Economy at the California Business Roundtable calculates.²⁴



Source: Center for Jobs & the Economy of California Business Roundtable

New Jersey homeowners will face one more substantial cost: the price tag of switching to electric heat from gas as the EMP recommends. Eighty-four percent of New Jersey households will spend roughly \$23,000 to convert based on the average cost of retrofitting 600 Massachusetts homes with electric heat pumps.²⁵ The EMP contends the cost will be just \$7,500. Plus, these costs don't include purchasing a new electric stove and grill.

The anticipated steep impact on taxpayers' wallets raises the issue of whether a premature leap to renewables, is worth the price or whether lower-expense alternatives need to be discussed and developed in parallel. If earth's warming temperatures continue to trigger fierce and more frequent hurricanes up the East

Coast as well as rising sea levels, confidence that offshore wind facilities are able to withstand those climate change impacts must be examined.

Impact on state's economy, revenues and jobs

The EMP's effects on New Jersey's economic growth, revenue and jobs remain a mystery although the Administration maintains the plan will create new jobs and industries as the state expands its green economy. But the net impact of any new jobs offsetting those lost on the cost of doing business in our state – already the worst in the country by one reputable index²⁶ – lacks any cited independent analysis or support. This uncertainly has the direct result of employers or prospective employers being reluctant to invest here.

New Jersey will likely benefit by an influx of federal funds to bolster wind energy projects off the coast of New Jersey. In late March, President Biden announced a coordinated program to generate much more offshore wind along the East Coast, which includes advancing Ocean Wind, the 1,100-megawatt offshore wind project 15 miles off New Jersey's 130-mile coastline. Proponents say the project could generate \$1.17 billion in economic benefits and create thousands of union jobs over its lifetime.²⁷

Yet many of the hoped-for new jobs will require job training and, heretofore, substantial job-training investments haven't triggered promised new employment at the four-year-old Paulsboro Marine Terminal where the Ocean Wind developer, Ørsted North America, is building the giant monopiles that the Ocean Wind turbines sit on. It expected to create 500 union jobs there, but those jobs remain to be seen.²⁸

Impact on transportation and construction

The Administration's proposal to reduce transportation-related emissions is laudable since that sector accounts for 42% of New Jersey's net greenhouse gas emissions. That's above the national average of 28%. Questions remain regarding whether the state can electrify its transportation sector, including its transportation systems, fast enough to meet the ambitious EMP goals for substituting electric vehicles for gas-powered vehicles and supplying enough electric charging stations.²⁹

The plan envisions 100% electric vehicle sales by 2050. But to meet the state's Global Warming Response Act's mandate to reduce greenhouse gas emissions by 80% from 2006 levels by that year, all new passenger car sales should be electric by 2035, a goal considering our past performance, appears unattainable.³⁰

The EMP estimates that to support even 5% of the 100% EV sales by 2050, the state will require over 48,000 Level 2 charging stations and 1,364 DC fast-charging locations by 2025. As of late May, the state had only 501 Level 2 charging stations and 107 DC fast-charging stations.³¹

New Jersey EV Infrastructure Growth Required to Meet 2050 Goals

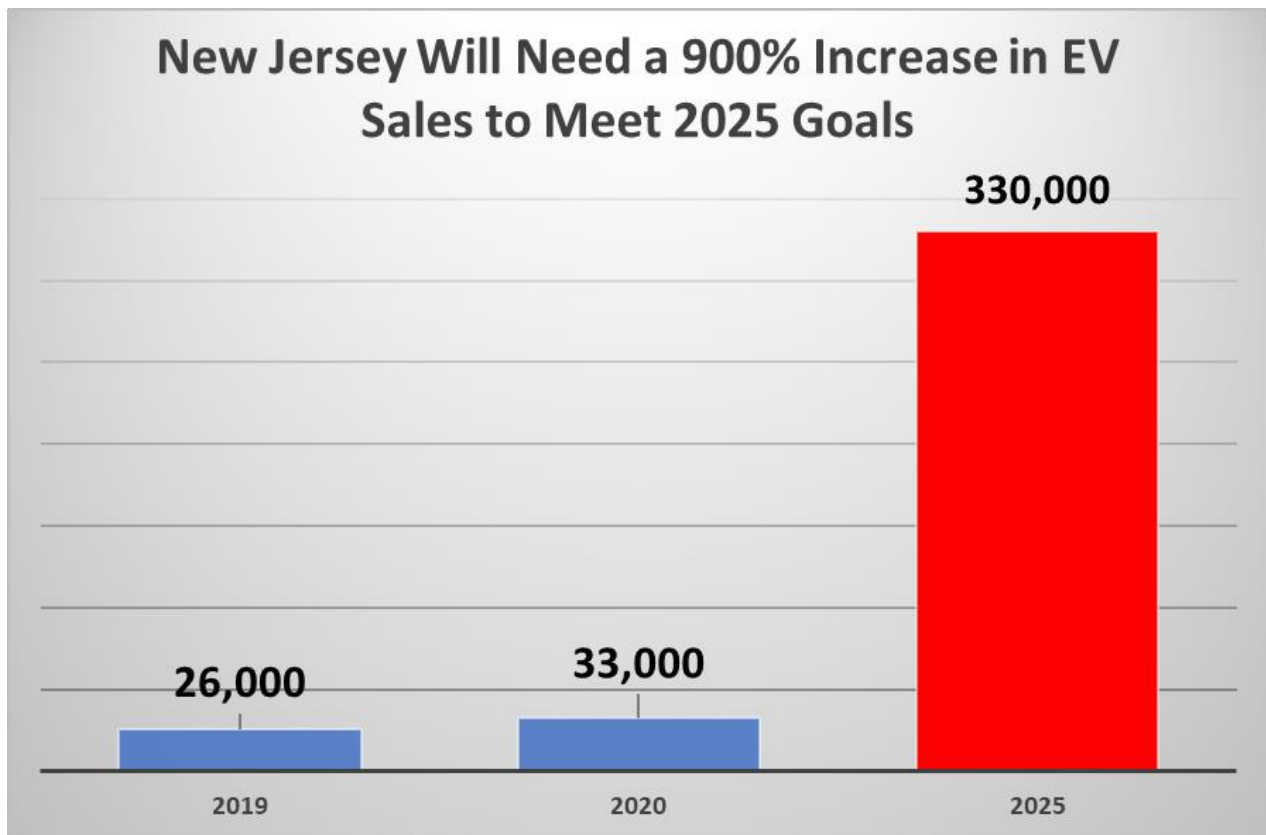
	2019	2021	2025
DC Fast Chargers	80	96	1,364
Level 2 Chargers	293	387	48,000

Source: New Jersey Energy Master Plan

Electrifying the transportation sector will be costly. But the overall price tag is unclear because, notes the Rocky Mountain Institute in its decarbonization analysis,³² the actual costs of electric vehicle infrastructure aren't well understood and are tough to calculate. It figures that reaching the goal to install 48,000 Level 2 electric charging stations would cost as much as \$5,000 each. New Jersey taxpayers would pay that \$240 million cost.

As for New Jersey Transit, the nation's third-largest provider of bus, rail and light rail services, it appears unlikely that it can fund that cost itself. New Jersey Transit is having difficulty funding its current operations, even though the federal government directly infused the public transportation system with \$2.4 billion over the past year and it was allocated another \$2 billion of turnpike toll receipts, benefitting from a 36% toll increase on the Turnpike and a 27% hike on the Garden State Parkway.

The EMP does telescope one major cost. It notes that the Administration committed to support deploying 330,000 light-duty electric vehicles by 2025, which is nearly 12 times the 26,000 EVs in the state in June 2019.³³ The median price of an all-electric vehicle at about \$47,400³⁴ is one-third above the median price of \$36,000 for a new car. The question arises: How many New Jerseyans with a median household income of \$82,545³⁵ can afford an EV, let alone a gas-powered new car?



Source: New Jersey Energy Master Plan. 2019 data as of June.

As for New Jersey’s builders, if the governor’s proposal clears, they will be the first in the nation required to prove that a proposed construction project aligns with the state’s broader efforts to combat climate change. Builders fear the permitting process could allow officials to block any construction project, citing unclear climate change considerations. The permitting process won’t be complete for another two years as state officials seek comment from various constituencies.

Impact on vital commercial fishing industry and tourism

The anticipated appearance of wind farms with their 850-foot-tall turbines off the Jersey coast is causing consternation in resort communities and among commercial fisheries.³⁶ Tourism is New Jersey’s second biggest industry, behind only pharmaceuticals, injecting \$46.4 billion into the economy and welcoming over 116 million visitors in 2019 before the COVID-19 pandemic. It also contributed \$5.1 billion in state and local taxes, and over 500,000 jobs.³⁷ The state’s commercial fishing industry is the fifth largest among the states, contributing more than \$7.9 billion annually and supporting over 50,000 jobs.

The concerns need to be addressed directly. Regarding tourism, a 2016 study by North Carolina State University³⁸ found that 80% of surveyed renters of vacation properties along that state’s beaches either wouldn’t come back if wind turbines

were built offshore or they would require large price discounts to rent. Interestingly, many of those surveyed support wind energy but NIMBY.

A 2018 survey³⁹ of beachgoers by two University of Delaware faculty members found that the distance from shore of the turbines often determines beachgoers' feelings toward them. Fifteen miles offshore seemed to be the break-even point. Consequently, the Ocean Wind tract that at its closest is 15 miles offshore and turbine blades could be visible from shore on some days, according to visual simulations.⁴⁰ In contrast, New York has set an 18-mile minimum to prevent visual objections.

Vocal opposition has surfaced in response to the Ocean Wind project. A group, Save Our Shoreline NJ, has begun an online petition urging the governor to reverse course on offshore wind development. Its Facebook page, which has 4,100 members, singles out Ocean Wind for criticism with its over 200 “almost 900 foot tall” turbines. The group contends the wind farm will significantly damage the environment, the fishing community and quality of life.⁴¹

As for fishing, concerns arise because offshore wind facilities require larger amounts of space since the turbines and blades are larger. The Union of Concerned Scientists concluded in a 2013 report that a variety of environmental impacts associated with offshore and onshore wind power must be recognized and mitigated.⁴²

Marine mammals can be negatively impacted both during construction of offshore wind farms and permanently. They depend on their hearing systems for several purposes and underwater noise can affect them. As for sea birds, the U.S. Fish & Wildlife Services says offshore wind farms harm sea birds more than onshore wind farms hurt onshore birds.⁴³

For commercial fisheries, high-value scallop and surf clams have been a significant concern. Developers of the Ocean Wind facility say they have considered input from fishermen, and the Bureau of Energy Management adjusted wind energy leases to make space for maritime vessel traffic.⁴⁴

These are significant economic sectors that generate a real return on investment. The nascent wind energy industry and the significantly subsidized solar energy industry have not demonstrated a positive ROI without continued subsidization from ratepayers and government entities. Related, the EMP envisions strong growth in solar energy and has authorized \$3 billion to subsidize solar panel installers.

In line with the state's reputation for possessing the highest cost of doing business of any state, New Jersey officials are mulling letting out-of-state solar developers obtain subsidies from utility customers to help meet the plan's solar energy goals.⁴⁵ This dilemma brings into sharp relief how the uncompetitive cost to operate any business in New Jersey undermines the viability of not just New Jersey's own solar industry and cost jobs but our entire economy.

Conclusion

New Jerseyans have tagged coastal resiliency as a priority since 2012 when Hurricane Sandy triggered massive coastal flooding, killed 37 people, damaged or destroyed 346,000 homes and caused \$30 billion in economic losses.⁴⁶ Since then, tidal flooding unrelated to hurricanes have intensified as an East Coast problem.

The threat of serious climate change on New Jersey is real and explains why it and its nearly 9.3 million residents should support and promote progress against climate change, including growth of renewable energy sources like wind and solar. Oil and other fossil-fuel companies also should join in transitioning to cleaner energy sources by working to reduce the emissions their fuels produce and helping develop emissions-reducing technologies.

Still, it's unanswerable today whether the EMP will make a real difference in delivering the reduced emissions and climate change impact it anticipates. Energy consultant Jonathan Lesser, Ph.D., for one, contends that eliminating all the state's emissions would do very little for the planet. He estimates it would equal three-to-four days of the emissions that polluting-giant China produces.⁴⁷ Indeed, carbon pollution in China last year surpassed that of the U.S., the European Union and other developed nations combined.⁴⁸

As for the cost-benefit of the EMP, essential insights into the price tag of the Administration plan and at what cost burden to New Jerseyans will not be known until the outside consultant completes a cost analysis near year-end 2022.

However, residents needn't yet ponder a future without affordable, plentiful and clean natural gas. For decades ahead, natural gas cannot be eliminated without an always-on backup energy source. Merely consider this winter's unusual deep freeze that threatened Texas's power grid.⁴⁹ Or study California's situation. It has numerous electrification mandates and the fourth-highest electric bills in the country, but the state still experiences inadequate supplies of electricity to prevent rolling brownouts. Those disruptions are expected to continue this summer as unusually hot weather is expected for the West.⁵⁰

All too often, when energy policy is concerned, policymakers and lawmakers ignore the question of cost. They opt instead for idealistic plans with nearly impossible goals that don't reflect the impact on lower-income households and retirees on fixed incomes. As for New Jersey's EMP, it must strike a balance in moving to total renewable energy sources for sustainability's sake with consideration of the economic burdens that New Jerseyans already bear.

This real representation of the plan's huge anticipated costs and impacts is what's missing. Residents and commercial and industrial businesses need to know the EMP's expected price tag and how much they must provide. For that reason, any action on the plan's major elements must be delayed until, at the very least, the cost analysis is finished. The stakes are simply too high to do otherwise.

#

- ¹ <https://www.self.inc/info/life-of-tax/>
- ² [California Energy Price Data for July 2020 - Center for Jobs 50 States](#)
- ³ [New Jersey - State Energy Profile Overview - U.S. Energy Information Administration \(EIA\)](#)
- ⁴ <https://www.northjersey.com/story/opinion/2021/01/27/new-jerseys-energy-master-plan-cost-citizens-billions/4259178001/>
- ⁵ [Energy Master Plan \(nj.gov\)](#)
- ⁶ <https://www.chooseenergy.com/data-center/electricity-sources-by-state/>
- ⁷ <https://www.electricrate.com/electricity-rates-by-state/>
- ⁸ Ibid.
- ⁹ <https://taxfoundation.org/2021-state-business-tax-climate-index/>
- ¹⁰ <https://www.njspotlight.com/2021/05/nj-energy-electric-gas-utility-efficiency-bills-cut-green-utilities-1-6-billion-energy-efficiency-measures/>
- ¹¹ [New Jersey - State Energy Profile Overview - U.S. Energy Information Administration \(EIA\)](#)
- ¹² <https://consumerenergyalliance.org/2019/10/new-jersey-emissions-fall-96-percent-natural-gas-use-almost-triples/>
- ¹³ <https://www.njspotlight.com/2019/09/19-09-12-bpu-urged-to-delve-into-cost-impacts-in-energy-plan/>
- ¹⁴ <https://www.journals.uchicago.edu/doi/pdfplus/10.1086/701186>
- ¹⁵ [New Jersey's energy master plan will cost citizens billions | Wind Energy News \(wind-watch.org\)](#)
- ¹⁶ [Murphy's energy plan will create big tax for NJ residents | Opinion \(northjersey.com\)](#)
- ¹⁷ <https://www.nj.com/news/2019/04/nj-approves-300m-nuclear-bailout-and-your-utility-bill-just-went-up.html>
- ¹⁸ <https://www.instituteforenergyresearch.org/renewable/wind/new-jersey-consumers-should-expect-electricity/>
- ¹⁹ Ibid.
- ²⁰ <https://www.nrel.gov/docs/fy21osti/78471.pdf>
- ²¹ https://www.eia.gov/outlooks/aeo/pdf/electricity_generation.pdf
- ²² <https://www.providencejournal.com/story/news/2021/01/13/report-rhode-island-can-reach-goal-100-percent-renewables-2030/6655399002/>
- ²³ <https://californiaglobe.com/section-2/california-gas-and-energy-prices-continue-to-rise-higher-than-other-states/>
- ²⁴ Ibid.
- ²⁵ <https://www.northjersey.com/story/opinion/2021/01/27/new-jerseys-energy-master-plan-cost-citizens-billions/4259178001/>
- ²⁶ <https://taxfoundation.org/2021-state-business-tax-climate-index/>
- ²⁷ <https://www.roi-nj.com/2021/03/30/industry/energy-utilities/biden-announces-massive-offshore-wind-initiative-which-is-great-for-n-j/>
- ²⁸ [\\$225M new N.J. port still hasn't created the jobs that were promised, mayor says - nj.com](#)
- ²⁹ <https://www.nrdc.org/experts/eric-miller/one-year-look-njs-ev-progress-2020>
- ³⁰ <https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf>
- ³¹ <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=e41aa50dd8cd45faba8641b6be6097b1>
- ³² [New Jersey residents need affordable energy, not empty promises | Letter \(app.com\)](#)
- ³³ https://www.nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf
- ³⁴ <https://insideeivs.com/news/490438/electric-car-price-comparison-us-20210224/>
- ³⁵ <https://worldpopulationreview.com/state-rankings/median-household-income-by-state#:~:text=%20%20%20%20State%20%20%20,%20%20%2481%2C215%20%2046%20more%20rows%20>
- ³⁶ Ibid.
- ³⁷ [2019 Reported as Record-Setting Year for New Jersey Tourism | VisitNJ.org](#)
- ³⁸ [Offshore Wind: Tourism - Center for Environmental and Resource Economic Policy \(ncsu.edu\)](#)
- ³⁹ <https://phys.org/news/2019-01-survey-beachgoers-potential-implications-offshore.html>
- ⁴⁰ [Ocean Wind project worries New Jersey beach resorts, fishing industry | National Fisherman](#)
- ⁴¹ <https://www.facebook.com/groups/saveourshorelinenj>
- ⁴² [Environmental Impacts of Wind Power | Union of Concerned Scientists \(ucsusa.org\)](#)
- ⁴³ [Impacts on marine mammals and sea birds \(wind-energy-the-facts.org\)](#)
- ⁴⁴ [Ocean Wind project worries New Jersey beach resorts, fishing industry | National Fisherman](#)
- ⁴⁵ <https://www.njspotlight.com/2021/03/heated-debate-nj-utility-customers-proposal-subsidize-out-of-state-solar-developers-conflict-jobs-versus/>
- ⁴⁶ [Effects of Hurricane Sandy in New Jersey - Wikipedia](#)
- ⁴⁷ [What Murphy won't tell you: eliminating ALL N.J. emissions would do nothing for the planet. » \(savejersey.com\)](#)
- ⁴⁸ <https://arstechnica.com/tech-policy/2021/05/chinas-carbon-pollution-now-surpasses-all-developed-countries-combined/#:~:text=Carbon%20pollution%20from%20China%27s%20bustling%2C%20coal-intensive%20economy%20last,last%2030%20years%2C%20so%20too%20have%20its%20emissions.>
- ⁴⁹ <https://www.dallasnews.com/business/energy/2021/02/15/frozen-wind-turbines-soaring-spot-electricity-prices-how-the-artic-freeze-is-roiling-texas-energy-market/>
- ⁵⁰ <https://weather.com/forecast/national/news/2021-03-10-summer-outlook-temperatures-united-states#:~:text=Summer%202021%20is%20expected%20to%20be%20hot%20across,to%20the%20Mississippi%20Valley%20and%20western%20Great%20Lakes.>