

# ***Trenton's Dirty Little Secret...***



***...Nobody Can Afford  
the Energy Master Plan***

# Clean Energy's Dirty Little Secret... *Nobody Can Afford it*

## Introduction

The Murphy Administration has launched a sweeping effort called the "Energy Master Plan" (EMP) to restructure New Jersey's entire energy infrastructure and economy on an aggressive timetable to eliminate the state's overall carbon emissions by 2050. The goal may be noble, but serious questions have been raised about the Administration's rush to implement the plan.

Not only will the EMP require scaling up new technologies, some of which has yet to be proven, the cost impacts on businesses, families, and local governments will be significant. Moreover, the EMP's massive subsidies and mandates will place the burden of those costs most heavily on the economically disadvantaged, while showering the most benefits on the wealthy. Ironically, the EMP's climate benefits will be negligible: even if New Jersey reduced its carbon emissions to zero tomorrow, it would have no measurable impact on world climate.

One thing the Murphy Administration has been silent on is the EMP's cost. When originally drafted, the Energy Master Plan was to include a cost analysis along with the document we know today. This was eliminated with no explanation or justification.

With the administration failing to be transparent, Affordable Energy for New Jersey worked with renowned energy policy expert Dr. Jonathan Lesser of Continental Economics to calculate what New Jersey residents should expect to pay for the Energy Master Plan, looking at each of the Energy Master Plan's seven broad strategies and assessing costs. The reality that New Jerseyans will have to face is daunting:



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AENJ calculated the total plan cost as well a cost per resident. This cost per resident was derived by taking the total cost and dividing by the total NJ population - meaning the per resident does not take age, race, gender or socio-economic status into account. The Energy Master Plan does not discriminate.

While performing this analysis, AENJ found that each EMP strategy involves significant costs for New Jersey residents.

EMP Strategy	New Jersey Reality	Estimated Cost
#1 Reduce energy consumption and emissions in the transportation sector.	Meeting the Electric Vehicle Mandate Will Cost Much More Than Assumed.	\$176 Billion
#2 Accelerate deployment of renewable energy and distributed energy resources.	Electric Bills Will Skyrocket	\$155 Billion
#3 Maximize energy efficiency and conservation, and reduce peak demand.	Energy Efficiency and Conservation Mandates Will Reduce Energy Consumption Less than Claimed and Cost Much More	\$106 Billion
#4 Reduce energy consumption and emissions from the building sector.	Electrifying New Jersey Homes, Apartments, and Businesses Will Be Hugely Expensive	\$65 Billion
#5 Decarbonize and modernize New Jersey's energy system	Decarbonizing and Modernizing New Jersey's Energy System Will Require Customers to Pay More for Electricity When They Most Need It	\$12.5 Billion
#6 Support community energy planning and action with an emphasis on encouraging and supporting participation by low- and moderate-income and environmental justice communities.	Community Energy Plans and a Smorgasbord of Community Subsidies	\$1.5 Billion
#7 Expand the clean energy innovation economy.	Subsidies for the Few	\$9.0 Billion
<b>Total Estimated Cost</b>		<b>\$525 Billion</b>

This policy white paper analyzes each of the EMP strategies in further detail.

New Jersey must adapt to Climate Change. But the cost of these adaptations must be part of a transparent public discussion so we aren't forced to rely on technologies or adhere to policies that are neither feasible, affordable, nor reliable. We call on state and local leaders, the press, and everyone to participate in this discussion.





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## *EMP Strategy #1*

# Reduce Energy Consumption and Emissions in the Transportation Sector



## *New Jersey Reality #1*

# Meeting the Electric Vehicle Mandate Will Cost Much More Than Assumed



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## Reality #1

# Meeting the Electric Vehicle Mandate Will Cost Much More Than Assumed

The Energy Master Plan claims that by 2050 the additional cost of implementing a “least-cost” plan will “only” cost an additional \$2.2 billion per year over a “Business-as-Usual” scenario without the EMP’s mandates. The models on which this estimate is based are proprietary and cannot be reviewed by the public. The state has even rebuffed AENJ’s “Freedom of Information Act” efforts to review the models and analysis on which the EMP is based.

Nevertheless, the Appendix to the November 2019 “Integrated Energy Plan,” on which the EMP’s recommendations and annual cost estimate are based, discusses some of the assumptions made. And what assumptions they are!

Senate Bill 2252, which builds on the EMP, mandates a total of 300,000 electric vehicles (EVs) on New Jersey roads by 2025 and two million by 2035. (By comparison, about 12,000 EVs were sold in 2020.) The “least-cost” scenario also requires that all passenger vehicle (cars and light trucks) sold be electric by 2035, in other words, sales of internal combustion cars and light

trucks will be prohibited. AENJ evaluated the reality of meeting these EV mandates, and found the claimed environmental benefits are a myth.

According to the New Jersey Automobile Dealers Association, in 2020, the average cost of all new cars and light trucks sold in the state was around \$40,000. The

average cost of EVs sold in the state was much higher – about \$56,000. So despite reductions in battery costs, EVs are still pricey – almost 40% higher than vehicles in general. And EV prices are increasing. In March, Tesla, which accounted for 85% of all EV sales in the state in 2020, announced it was raising the prices on all of its vehicles.

Yet, based on a 2017 report,<sup>1</sup> the “least-cost”

EMP scenario assumes that the cost of EVs will rapidly drop below the price of gasoline-powered vehicles. For example, by 2025, that report assumes the average cost of an EV with a 200-mile range will drop to the mid-\$30,000 range and the cost of a 300-mile EV will drop to between \$38,000 and \$45,000. By 2035, the report predicts the cost of a 200-mile EV falling to as



1 Paige Jadun, et al., “Electrification Futures Study: End-Use Electric Technology Cost and Performance Projections through 2050.” NREL/TP-6A20-70485. National Renewable Energy Laboratory, 2017 (Jadun, et al. 2017).

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## Reality #1

# Meeting the Electric Vehicle Mandate Will Cost Much More Than Assumed

low as \$25,000 and the cost of a 300-mile EV falling to as low as \$30,000.<sup>2</sup>

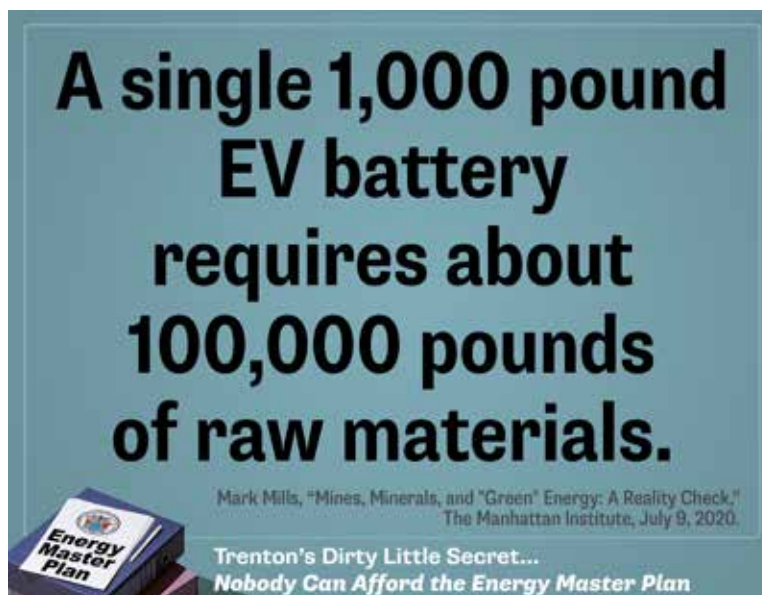
The basis for the projected rapid cost decreases for EVs is an assumption that battery costs will plummet.<sup>3</sup> And it's true that battery costs have decreased. But the problem with assuming those prices will continue to plummet stems from basic economics: supply and demand. As the demand for EVs increases, especially because of mandates for their purchase, EV manufacturers like Tesla will be able to raise their selling prices, even if battery costs fall.

The complete changeover to EVs that the EMP envisions will increase the demand for EVs and the batteries they use. And batteries require huge quantities

of raw materials. A single 1,000 pound EV battery requires about 100,000 pounds of raw materials.<sup>4</sup>

But there are no projected advances in mining and metallurgy technology, so the market prices of the materials needed for all of those EV batteries, such as lithium and cobalt (which are mined in countries like China and the Congo, but not the U.S.), are likely to increase, which will raise battery production costs and put upward pressure on battery prices.<sup>5</sup>

So one of the largest assumptions underlying the EMP – cheap batteries and EVs – is likely to be undone by basic economics. The result will be much higher than projected costs for New Jerseyans.



**A single 1,000 pound  
EV battery  
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100,000 pounds  
of raw materials.**

Mark Mills, "Mines, Minerals, and 'Green' Energy: A Reality Check," The Manhattan Institute, July 9, 2020.

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2 Jadun, et al. 2017, p. 15, Figure 4. Costs are reported in inflation-adjusted 2018 dollars.

3 Id. p. 12, Figure 3.

4 Mark Mills, "Mines, Minerals, and 'Green' Energy: A Reality Check," The Manhattan Institute, July 9, 2020.

5 Marcelo Azevedo et al., "Lithium and Cobalt: A Tale of Two Commodities," McKinsey & Co., June 2018.

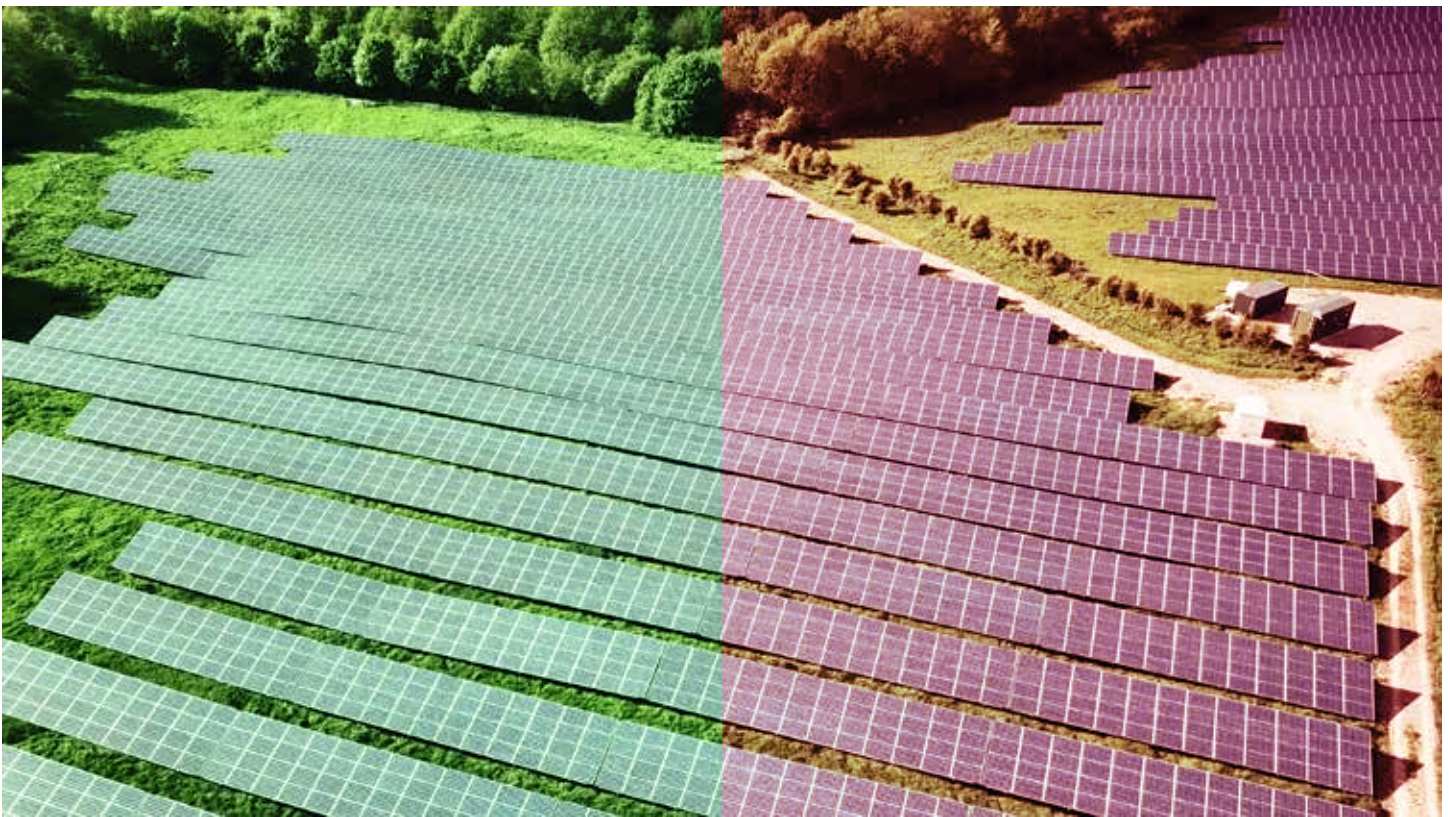




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**EMP Strategy #2**

**Accelerate Deployment of Renewable Energy and Distributed Energy Resources**



**New Jersey Reality #2**

**Electric Bills Will Skyrocket**



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## New Jersey Reality #2

# Electric Bills Will Skyrocket

The second strategy in the Energy Master Plan is to “Accelerate deployment of renewable energy and distributed energy resources.” In practice, this will mean eliminating fossil fuel generation – especially electricity produced by natural gas generating plants – and replacing it with high-cost offshore wind, grid-scale solar “farms,” and rooftop solar installations, along with battery storage facilities to address wind and solar’s inherent intermittency.

The EMP’s mandate to electrify transportation and electrify the entire building sector by forcing homes and businesses to replace existing natural gas furnaces and water heaters with electric heat pumps<sup>1</sup> will cause the demand for electricity to soar. Today, electricity accounts for just one-seventh of all of the end-use energy consumed in the state. The remainder is fossil fuel consumption for vehicles, furnaces, hot water heaters, and so forth. In other words, end-use fossil fuel energy consumption is six times larger than electricity consumption.

The EMP claims mandatory energy conservation will mean all of that fossil fuel energy can be replaced with just twice as much electricity. In other words total state energy demand in 2050 will be almost cut in half below today’s demand. Because this claim is based on unreasonable assumptions about consumer behavior, it’s likely the demand for electricity will be much higher, meaning the state will need even more offshore wind and solar PV.



**\$1,500** per person, per year, until 2050

The offshore wind, solar, and battery storage outlined in the Energy Master Plan will cost New Jerseyans an additional \$155 billion over the next 30 years – over \$1,500 per year for every resident.

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According to the EMP, the additional electricity needed will be supplied by about 11,000 megawatts (MW) of offshore wind, around 32,000 MW of solar, and almost 9,000 MW of battery storage.<sup>2</sup> If the state’s remaining nuclear plants, whose operating licenses expire beginning in 2036, are not relicensed for a second time, then the EMP calls for over 26,000 MW of offshore wind along with almost 20,000 MW of battery storage.<sup>3</sup> (The Oyster Creek Nuclear Plant was forced to shut down in 2018, ten years before its operating license expired, because of environmental opposition.) The EMP also calls for thousands of MW of out-of-state wind power – because building onshore wind in the state is impractical. If other states adopt similar renewable strategies, then it is doubtful there will be any surplus onshore wind to export to New Jersey.

1 See the AENJ Report, “Natural Gas: Crucial for New Jersey’s Energy and Economic Future,” October 2020.

2 This would require installing, on average, one 850-foot tall, 13-MW wind turbine every 13 days, plus installing almost 3 MW of solar panels (10,000 panels) almost 1 MW of battery storage every single day for the next 30 years.

3 In that scenario, the EMP shows 16,500 MW of offshore wind being built over just five years, which works out to having to install one 13-MW turbine almost every single day.





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## New Jersey Reality #2

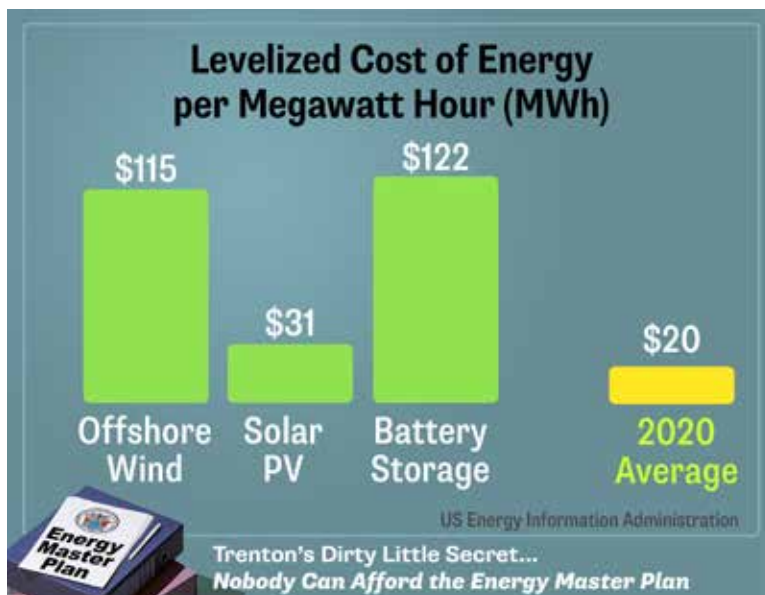
# Electric Bills Will Skyrocket

How much will all of that new renewable generation cost? According to the U.S. Energy Information Administration (EIA), the “levelized” cost of offshore wind installed in 2026 will be \$115 (in 2020\$) per megawatt-hour (MWh),<sup>4</sup> the levelized cost of solar PV will be \$31/MWh, and the levelized cost of battery storage will be \$122/MWh. Based on those resources’ annual “capacity factor” (the percent of time they produce electricity) and factoring in the EIA’s projected decreases in those resources’ costs, the total cost between now

and 2050 will be around \$275 billion.

cost of the required electricity between now and 2050 would be around \$120 billion. The offshore wind, solar, and battery storage outlined in the Energy Master Plan will cost New Jerseyans an additional \$155 billion over the next 30 years – over \$1,500 per year for every resident. That doesn’t include the costs of upgrading local electric distribution systems (the poles and wires running down streets) to accommodate all of that additional electricity demand.

Because of the state’s electric vehicle mandate, the proposed ban on the sale of new internal-combustion cars and trucks beginning in 2035, and the EMP’s call to electrify two million homes (and thousands of apartments), New Jerseyans would spend less on gasoline for their cars and natural gas to heat their homes. But AENJ estimates implementing these two mandates alone will cost New Jersey consumers and businesses an additional \$240 billion by 2050 - \$2,400 per year for every resident.<sup>5</sup>



and 2050 will be around \$275 billion.

By contrast, in 2020 the average wholesale market price of electricity in New Jersey was around \$20/MWh, thanks to abundant supplies of natural gas used to generate electricity. If wholesale market prices increase at the rate of inflation, then the market

4 A levelized cost is analogous to a fixed payment on your house or car.

5 The estimated costs of the EV mandate were presented in Issue Brief #2. For building electrification costs, see the report cited in footnote 1.



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## *EMP Strategy #3*

# Maximize Energy Efficiency and Conservation, and Reduce Peak Demand



## *New Jersey Reality #3*

# Energy Efficiency and Conservation Mandates Will Reduce Energy Consumption Less than Claimed and Cost Much More



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## New Jersey Reality #3

# Energy Efficiency and Conservation Mandates Will Reduce Energy Consumption Less than Claimed and Cost Much More

The third strategy in the Energy Master Plan is to “Maximize energy efficiency and conservation and reduce peak demand.” Under the New Jersey Clean Energy Act, electric utilities must reduce their customers’ electric consumption by 2% each year and gas utilities must reduce their customers’ consumption by 0.75% each year.

Additionally, the EMP calls for “net-zero” carbon building codes (meaning all buildings must have solar photovoltaics or connect to local “clean” generating resources), retrofitting of all state government buildings, and more stringent appliance standards for stoves, lighting, air conditioners, and so forth.

The EMP is silent on how much this will cost consumers and businesses. Furthermore, it’s not clear how electric and gas utilities are supposed to reduce their customers’ energy consumption while the state simultaneously mandates electrification of the entire economy (including electric vehicles) and replacing fossil fuel space and water heating with electric heat pumps.

The EMP states that, since 2001, New Jersey has spent \$2.3 billion on energy conservation programs that have saved (or will save) a total of 80 million MWh of electricity and 236 billion cubic feet of natural gas.<sup>1</sup> These savings claims are based on engineering models which typically fail to account for “rebound” effects (e.g., with a more efficient furnace, consumers may

turn up the thermostat to be more comfortable) and do not account for actual use (e.g., the savings from an energy-efficient light bulb depends on how many hours it is used every day.)

Moreover, the \$2.3 billion figure does not include spending by consumers. For example, a rebate program that offers \$1 off the purchase of an energy efficient lightbulb doesn’t cover the bulb’s entire cost; consumers must still pay the balance. But there is no information about what total spending on energy efficiency has been.

By comparison, between 2001 and 2019, total state electricity consumption was about 1,455 million MWh and total state natural gas consumption was about 12,500 billion cubic feet – excluding natural gas used to generate electricity.<sup>2</sup> So, over the last two decades, the state spent \$2.3 billion to reduce electricity consumption by about 5.5% and natural gas consumption by less than 2%. In today’s dollars, that’s around \$2.75 billion.

The 2% annual electricity savings and 0.75% annual natural gas savings called for by the EMP represent around 40% of the total claimed energy savings achieved over the last two decades. Over the next 30 years, achieving these same energy savings would cost about \$33 billion in today’s dollars, or over \$1 billion each year, before accounting for the additional direct

1 Energy Master Plan, p. 141.

2 Source: U.S. Energy Information Administration.





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## New Jersey Reality #3

# Energy Efficiency and Conservation Mandates Will Reduce Energy Consumption Less than Claimed and Cost Much More

costs paid by consumers.<sup>3</sup> If consumers have to make an equivalent contribution, then the total cost of the energy efficiency programs would be \$66 billion in today's dollars.

This also ignores the fact that a large percentage of the low-cost, "easy" energy savings – especially energy efficient lighting – has already been achieved, especially in the commercial sector because businesses have a clear financial incentive to save money. The future energy savings envisioned by the EMP will likely cost more for each additional kilowatt-hour or cubic foot of natural gas saved.

This \$66 billion cost doesn't include the other energy savings aspects of the EMP, such as adopting "equitable clean energy financing mechanisms," including a state-owned "Green Bank."<sup>4</sup> It also doesn't include:

1. Raising electricity rates cities and towns pay for street lights to "incentivize mass adoption of energy efficient initiatives;"
2. Time-of-day (TOU) electricity rates to discourage consumers from consuming electricity during peak-demand hours;
3. Higher construction costs associated with more stringent building codes;
4. Weatherizing millions of existing homes and commercial buildings; and
5. The costs – and performance degradation) of even more energy efficient appliances.

Although the EMP does not provide any estimates for these costs for the next 30 years, especially the additional costs that will be paid by consumers and businesses, Affordable Energy for New Jersey estimates those additional costs will be \$20 - \$40 billion, meaning a total cost of between \$86 billion and \$106 billion for this third strategy alone.

**"...it's not clear how electric and gas utilities are supposed to reduce their customers' energy consumption while the state simultaneously mandates electrification of the entire economy (including electric vehicles) and replacing fossil fuel space and water heating with electric heat pumps."**

Dr. Jonathan Lesser, Continental Economics

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3 Based on inflation between 2001 and 2019, and assuming that the \$2.3 billion was spent equally in each year, that spending is equivalent to \$2.75 billion in 2020 dollars. Because that spending achieved 40% of the annual savings targets in the EMP, the total cost over the next 30 years will be: (\$2.75 billion) x 0.40 x 30 = \$33 billion.

4 Energy Master Plan, p. 145.





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## *EMP Strategy #4*

# Reduce Energy Consumption and Emissions From the Building Sector



## *New Jersey Reality #4*

# Electrifying New Jersey Homes, Apartments, and Businesses Will Be Hugely Expensive



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## New Jersey Reality #4

# Electrifying New Jersey Homes, Apartments, and Businesses Will Be Hugely Expensive

The fourth strategy of the Energy Master Plan calls for virtually all buildings in the state – homes, apartments, and businesses.

Today, there are around two million single-family homes in New Jersey that use natural gas or fuel oil for space and water heating, along with thousands of multi-family homes and apartment buildings. The EMP will require all of these furnaces and water heaters to be replaced with “heat pumps” powered by electricity. (A heat pump basically works like a refrigerator in reverse, extracting heat from outside air and using it to heat indoor air or water.) The EMP claims this mandated fuel switching to electricity will save the environment and save consumers and businesses money.

But when you examine the fine print, those claims are based on bogus cost estimates.

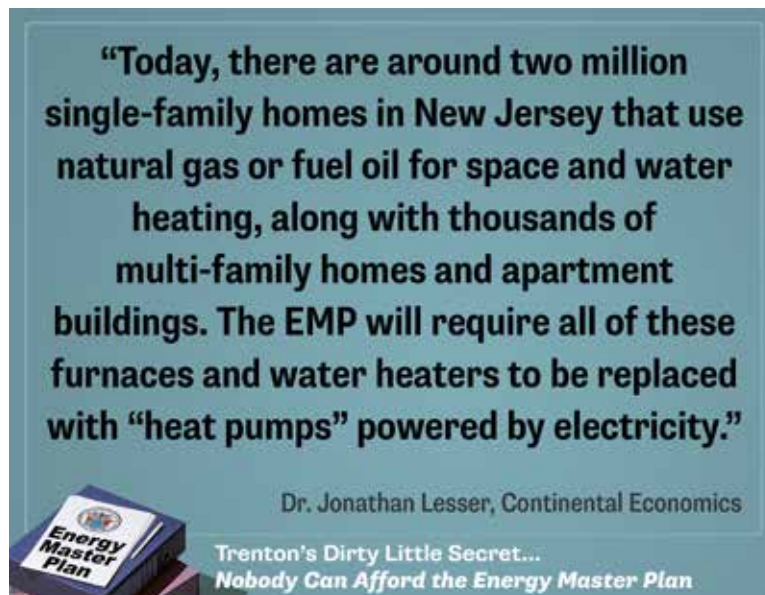
Based on a 2018 study prepared by the Rocky Mountain Institute, which helped write the EMP, the EMP claims that retrofitting a home with a new heat pump

will cost \$7,500, versus \$3,000 to replace an existing natural gas furnace.<sup>1</sup> (Oddly enough, the RMI report showed that retrofitting with an electric heat pump cost consumers thousands of dollars more over a 15-year period.)

The RMI study on which the EMP's cost assumptions are based never examined actual costs of these retrofits; it

was all based on assumptions and models. However, a study prepared by Diversified Energy Specialists examined actual heat pump conversion costs for over 600 homes in Massachusetts over the five-year period 2014-2019.<sup>2</sup> That study found the average cost to convert a home was almost \$23,000 for an average size home of 1,500 square feet, triple the assumed cost in the RMI study. Moreover, over 90% of the homes evaluated retained a supplementary

heat source, including wood stoves, electric resistance heaters, and natural gas furnaces, because heat pumps work poorly in very cold weather.<sup>3</sup> (The RMI Study ignored the costs of supplemental heating entirely.)



1 Sherri Billimoria, et al., “The Economics of Electrifying Buildings,” Rocky Mountain Institute 2018 (RMI Heat Pump Study).

2 Diversified Energy Specialists, “Case Study: Massachusetts Air-Source Heat Pump Installations, 2014-2019,” Report prepared for National Oil Heat Institute, November 19, 2019.

3 When it is very cold outside, there is less heat to extract from the air.



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## New Jersey Reality #4

# Electrifying New Jersey Homes, Apartments, and Businesses Will Be Hugely Expensive

If the cost of installing a new gas furnace is \$3,200, as the EMP claims, then based on the Massachusetts data on actual installation costs, the net cost to install a new heat pump is about \$20,000. With two million single family homes to retrofit, that's \$40 billion over the next 30 years.

Estimating the costs to retrofit apartment buildings is more complex. A 2019 report prepared for the Natural Resources Defense Council (NRDC) estimated retrofit costs for a variety of multi-family buildings between \$7 per square foot \$15 per square foot, assuming an average apartment size of 1,000 square feet.<sup>4</sup> These cost estimates mean that retrofitting the 1.3 million multifamily units in New Jersey would cost between \$9 and \$20 billion. Hence, in total, the EMP's retrofit goal will cost New Jersey residential homeowners upwards of \$60 billion, or \$2 billion per year for the next 30 years, not accounting for inflation. That's equivalent to an additional \$200 per New Jersey resident, each and every year, for the next 30 years.

The EMP also mandates all residential gas appliances, including water heaters, gas stoves, and gas dryers, as well as replacing gas stoves used by restaurants, to be replaced with electric ones.

Affordable Energy for New Jersey estimates that replacing residential gas-fired water heaters would cost at least \$4.5 billion.<sup>5</sup> Replacing all commercial hot water heaters will cost billions more. And, although the costs of electric ranges and dryers are relatively low, around \$500 - \$1,000 each, many older homes do

not have adequate wiring to replace existing gas-fired ones. Thus, replacing millions of gas stoves and dryers with electric ones is likely to cost billions of dollars more in electric service upgrades

All told, building electrification is likely to cost New Jerseyans at least an additional \$65 billion between now and 2050, or about \$6,500 for every person in the state.

**“a study prepared by Diversified Energy Specialists examined actual heat pump conversion costs for over 600 homes in Massachusetts over the five-year period 2014-2019. That study found the average cost to convert a home was almost \$23,000 for an average size home of 1,500 square feet...”**

Dr. Jonathan Lesser, Continental Economics

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4 Steven Winter Associates, Inc., “Heat Pump Retrofit Strategies for Multifamily Buildings,” Report prepared for NRDC, April 2019, p. 17.

5 AENJ, “Natural Gas: Crucial for New Jersey’s Energy and Economic Future,” October 2020.



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## *EMP Strategy #5*

# Decarbonize and Modernize New Jersey's Energy System



## *New Jersey Reality #5*

# Decarbonizing and Modernizing New Jersey's Energy System Will Require Customers to Pay More for Electricity When They Most Need it



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## New Jersey Reality #5

# Decarbonizing and Modernizing New Jersey's Energy System Will Require Customers to Pay More for Electricity When They Most Need it

The Energy Master Plan's fifth strategy calls for "future-proofing New Jersey's electric and gas utilities"<sup>1</sup> by decarbonizing and modernizing New Jersey's energy system. The strategy will require electric utilities

- expand the use of distributed resources (especially rooftop solar "PV" photovoltaics)
- reduce system voltages to save energy
- construct thousands of electric vehicle charging stations
- enable two-directional power flows and adopt "non-wires" solutions
- increase state control over siting new interstate high-voltage transmission lines and find ways to avoid paying for those lines
- install advanced electric meters that enable real-time pricing
- design new rate structures that "encourage" customers to reduce electricity consumption during peak demand hours.

The strategy also calls for forcing natural gas utilities to plan for their eventual demise as natural gas consumption in the state is phased out, while replacing pipelines to reduce methane emissions.

Much of this fifth EMP strategy involves technical issues, some of which will have few direct costs but will adversely affect consumers and businesses. For

example, unlike a traditional electric meter that only measures total consumptions, smart-meters track consumption at all times and can communicate (and receive communication directly with the local electric utility. This two-way communication means that utilities can adopt so-called "time-of-use" rates; charging more for electricity consumed when demand peaks (in the early evening, during cold snaps and heat waves) and less when demand is low (in the middle of the night). Forcing consumers to "manage" their electricity consumption to reduce electricity demand – such as by washing clothes at 3 AM – may reduce utility costs, but it will also impose additional costs on consumers, either from paying more to use electricity when they want or forcing them to manage their lives around the electric meter.

Earlier this year, the New Jersey BPU approved PSE&G's plan to spend \$778 million to install smart meters for its 2.3 million customers, or around \$350 each. With about 3.6 million residential electric customers and another half-million commercial customers, installing smart meters in the entire state will cost around \$1.3 billion. Although smart meters offer potential benefits, such as enabling utilities to quickly pinpoint outages – it is unclear whether their benefits exceed the costs paid by ratepayers.

A far more expensive proposition will be a "two-way" distribution grid and constructing thousands of EV charging stations. Local distribution systems – the poles and wires running down the street – were de-

1 Energy Master Plan, p. 172.





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## **New Jersey Reality #5**

# **Decarbonizing and Modernizing New Jersey's Energy System Will Require Customers to Pay More for Electricity When They Most Need it**

signed to provide “one-way” delivery of electricity produced at large generating plants. Because the EMP envisions placing millions of solar panels on New Jersey homes and buildings, electricity will be produced locally and fed back to the grid. It’s called “distributed generation.”

But the distribution grid was not designed for this. And, while small quantities of solar power at the local level can be handled, installing vast quantities of solar means that the distribution system must be rebuilt to handle that electricity, while being able to handle sudden swings in output that cause large swings in voltage levels. Those swings can damage electric appliances and equipment and cause power outages.

Affordable Energy for New Jersey estimates that upgrading the distribution grid to handle the electric vehicle mandate will cost at least \$7.5 billion. But the EMP’s “two-way” grid will require even more upgrades, potentially costing hundreds of thousands of dollars for each circuit. The actual costs will depend on the characteristics of each circuit, including age, types of customers on the circuit, and so forth.

New Jersey has about 5,000 miles of distribution circuits. If it costs an average of \$1 million per mile to upgrade those circuits to enable “two-way” distribution, the total cost will be another \$5 billion.

Finally, this strategy calls for gas distribution utilities to upgrade their pipeline systems to reduce methane

leakage and to adopt “non-pipeline solutions,” while at the same time planning for their companies’ eventual mandated closure by the state, presumably as the state forces two million homes and thousands of commercial buildings to switch from natural gas to electricity. The result will be billions in so-called “stranded

**Affordable Energy for New Jersey estimates that upgrading the distribution grid to handle the electric vehicle mandate will cost at least \$7.5 billion.**



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costs” that gas utility consumers will be required to pay. In other words, not only does the EMP envision forcing these consumers to pay thousands of dollars to “electrify” their homes and businesses with new space and water heating systems, but these same consumers will also have to pay the natural gas utilities for the state’s eliminating those utilities as viable businesses. That will mean billions more in costs, and years of costly litigation to resolve.



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## *EMP Strategy #6*

**Support Community Energy Planning and Action With an Emphasis on Encouraging and Supporting Participation by Low- and Moderate-Income and Environmental Justice Communities**



## *New Jersey Reality #6*

**Community Energy Plans and a Smorgasbord of Community Subsidies**



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## New Jersey Reality #6

# Community Energy Plans and a Smorgasbord of Community Subsidies

The Energy Master Plan's sixth strategy calls for "environmental justice" communities to develop "Community Energy Plans." CEPs are a catch-all which appear to encompass subsidies to encourage companies to build rooftop solar PV facilities and other distributed energy resources, installing electric vehicle chargers, workforce training to install and maintain those energy resources, electrifying buses, and even developing "shared mobility programs" such as bike sharing and electric scooters.

The EMP also calls for clean energy training programs – presumably, programs to train individuals to install rooftop solar facilities and energy conservation measures. It also calls for buyouts of diesel trucks and electrifying diesel-powered transportation near ports and airports, such as electrifying all transit buses. The plan also calls for subsidies for purchases of used electric

vehicles – because low-income consumers will not be able to take advantage of the many subsidies for new EVs.

The EMP also envisions new "shared mobility" systems, including electric scooters and bike sharing, as well as EV-sharing. It also calls for building bike lanes and sidewalks in communities across the state.

Because electricity prices are likely to soar if the EMP's programs are enacted, the EMP calls for more assistance to low-income consumers to pay those higher electric bills through a variety of assistance programs.

Affordable Energy for New Jersey estimates that this strategy will cost between \$25 - \$50 million per year, depending on the level of actual investment that takes place in targeted communities. Between now and 2050, that translates into between \$750 million and \$1.5 billion.

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Trenton's Dirty Little Secret...  
*Nobody Can Afford the Energy Master Plan*



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# Clean Energy's Dirty Little Secret... *Nobody Can Afford it*

## *EMP Strategy #7*

# Expand the Clean Energy Innovation Economy



## *New Jersey Reality #7*

# Subsidies for the Few



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# Clean Energy's Dirty Little Secret... *Nobody Can Afford it*

## New Jersey Reality #7

# Subsidies for the Few

The Energy Master Plan's seventh and final strategy calls for subsidies to support the growth of in-state clean energy industries. To achieve that goal, the Energy Master Plan calls for state-sponsored investments in clean industries and taxpayer subsidies to lure those industries to the state, state-funded research and development efforts, state-subsidized job training efforts for workers deemed to be in "dead-end" industries, a state-funded "green bank" that would provide taxpayer-subsidized loans to favored green industries, further subsidize the offshore wind industry because Governor Murphy's mandate that at least 7,500 MW of offshore wind be build off the New Jersey coast by 2035, and establish state-sponsored clean energy "hubs."

State and federal government efforts to grow economies with endless subsidies ignores a basic economic truth: robbing Peter to pay Paul may make Paul better off, but it leaves Peter worse off. That's what subsidies do: they transfer money from taxpayers to favored interest groups. But studies of the wondrous economic impacts of those subsidies will have – creating thousands of new jobs, attaining "first mover" advantages to develop entire new industries, etc. – all tend to ignore the source of all that investment money: taxpayers. Instead, subsidies are treated as if the money fell from the sky.

Moreover, the history of state and federally-funded subsidies for economic development is not a pretty one. In New York state, for example, Governor Cuomo spent a billion dollars for a solar panel manufacturing facility in Buffalo, which was supposed to create thousands of new jobs. However, it turned out to be another corrupt enterprise.<sup>1</sup> Then there was Solyn-

dra, a company that the Obama Administration gave over \$500 million in taxpayer money. Except company officials misled the administration and soon filed for bankruptcy.

States spend millions, if not billions to attract industries, often providing direct subsidies, property tax forgiveness, and infrastructure. Typically, the "return" on these investments is small, amounting to spending hundreds of thousands of dollars per job "created." Yet, in its zeal to "capture more than its fair share of the future clean energy economy,<sup>2</sup> the state intends to offer additional handouts to green energy. Thus, not only will offshore wind projects being developed off the coast be paid far above-market prices for the electricity they generate and collect billions of dollars in investment tax credits, thanks to the U.S. government allowing – almost entirely European wind developers – to be eligible for those credits, but the state will invest in infrastructure, such as upgraded port facilities, and industry hubs to lure offshore wind manufacturing to the state. Meanwhile, offshore wind and the EMP's electrification mandates will cause state electricity prices to soar, which will help drive out existing businesses and industry, reduce economic growth, and shrink jobs.

Affordable Energy for New Jersey estimates that the state is likely to spend an average of between \$100 and \$300 million dollars per year on these economic development subsidies. Over the 30-year period between now and 2050, that implies total costs of between \$3 billion and \$9 billion to be paid by New Jersey taxpayers.

1 E.J., McMahon, "Cuomo's Buffalo Billion was beyond corrupt," New York Post, July 13, 2018.

2 Energy Master Plan, p. 216.

