

New Jersey 2024 Energy Master Plan

New Jersey Board of Public Utilities

Public Hearing #1

May 20, 2024

ILLUME



Energy+Environmental Economics

Opening Remarks

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Energy+Environmental Economics

New Jersey Energy Master Plan Goals

The overarching goal of this study is to create New Jersey's 2024 Energy Master Plan (EMP), which outlines the state's strategic use, management, and development of energy. The 2024 EMP will reflect the State's accelerated goal of reaching 100% clean electricity by 2035.

The 2024 EMP will consist of several elements:



A progress report on New Jersey's successes and barriers toward meeting 2019 EMP goals



A policy analysis that includes a literature review of national best practices, executive orders, funding opportunities, and actions to inform the decarbonization scenarios



An Integrated Energy Plan based on economy-wide energy system modeling of New Jersey's pathways for meeting near and long-term climate and energy goals



An analysis of the impact that electrification and decarbonization will have on customer costs



Strategic stakeholder engagement and incorporation of feedback throughout the EMP process

What is new for 2024?

The current analysis aims to build off and improve on the 2019 EMP by:

- + Conducting a deeper and more robust study on the costs of climate mitigation for NJ residents**
 - The study will include detailed gas and electric rate modeling, in addition to the up-front capital costs of decarbonization
- + Exploring how a diverse range of energy demand reduction strategies may help alleviate peak electric load**
- + Exploring the potential of using gas to provide back-up heating during the coldest hours of the year**
- + Studying the cost and required infrastructure of achieving a reliable zero-emissions electric sector**
- + Including detailed inputs and assumptions on the offshore wind industry that are being developed as part of the Offshore Wind Strategic Plan 2**

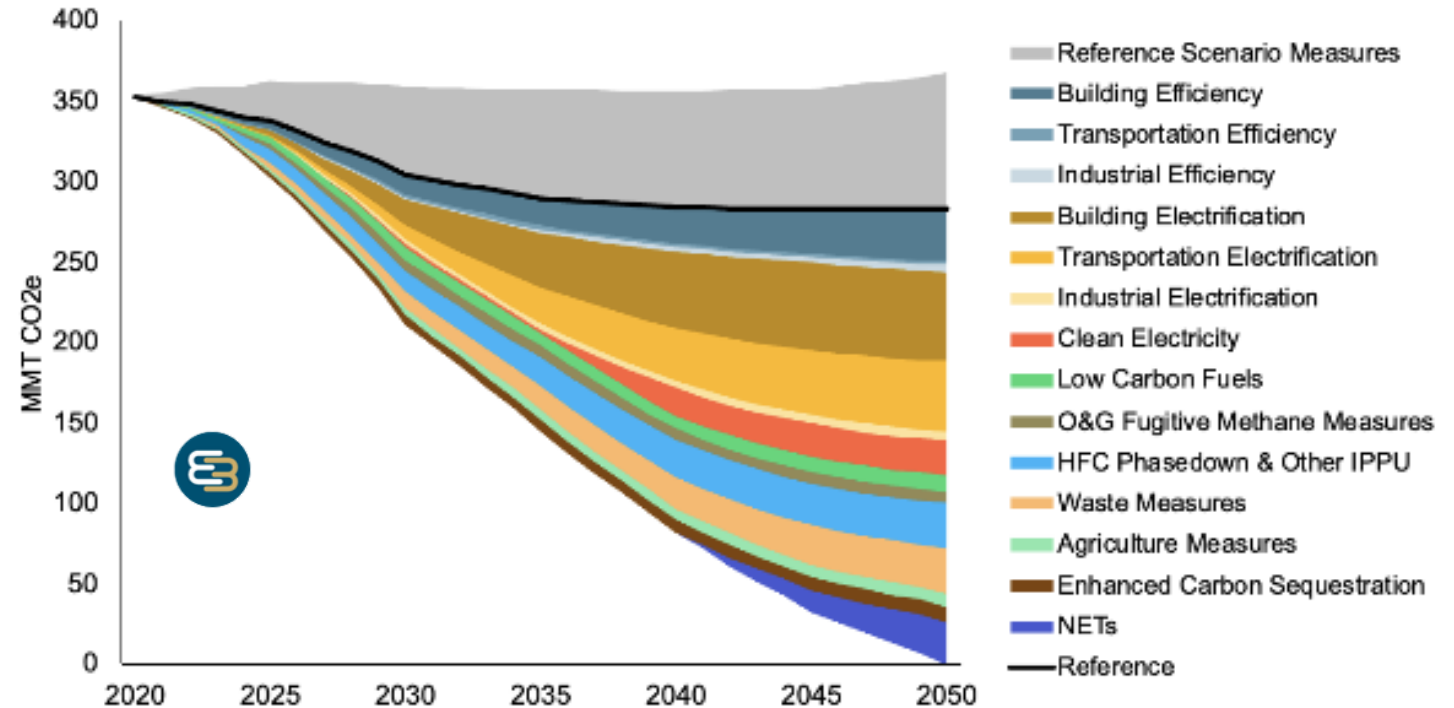
2024 EMP UPDATE TIMELINE

Milestone	Timeline	
Consultant Selection	2023	Q4
Four Public Hearings	2024	Q2
Draft EMP	2024	Q3
Final EMP	2024	Q4
Final Comprehensive Climate Action Plan	2025	Q3



E3 is a national leader in developing rigorous, state-level and utility-specific clean energy plans

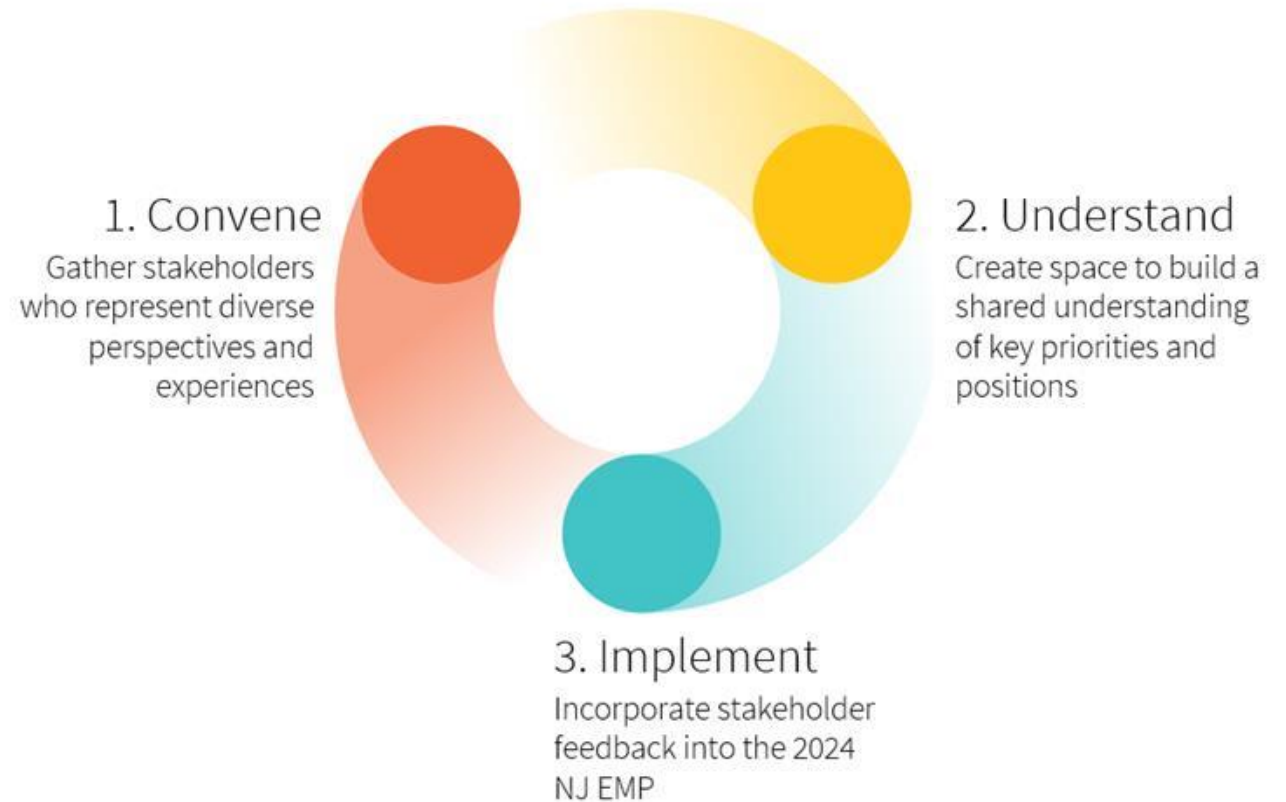
E3 models GHG emissions reduction measures to decarbonize states and regions, and addresses the challenges associated with deep decarbonization across North America and the east coast. Notable states E3 has completed energy master planning for include New York, Maryland, Maine, North Carolina, Colorado, California, Oregon, Minnesota, and New Mexico



Recent Projects

- US Climate Alliance Greenhouse Gas Emissions through 2050
- New York Climate Action Council Scoping Plan
- Impact of Massachusetts's Decarbonization Goals on Local Gas Distribution Companies

ILLUME provides expertise in elevating the perspectives of **stakeholders to shape a more equitable energy future. To support the development of the Energy Master Plan, ILLUME will convene small-group workshops to understand the perspectives of key community stakeholders and incorporate these findings into the planning process.**





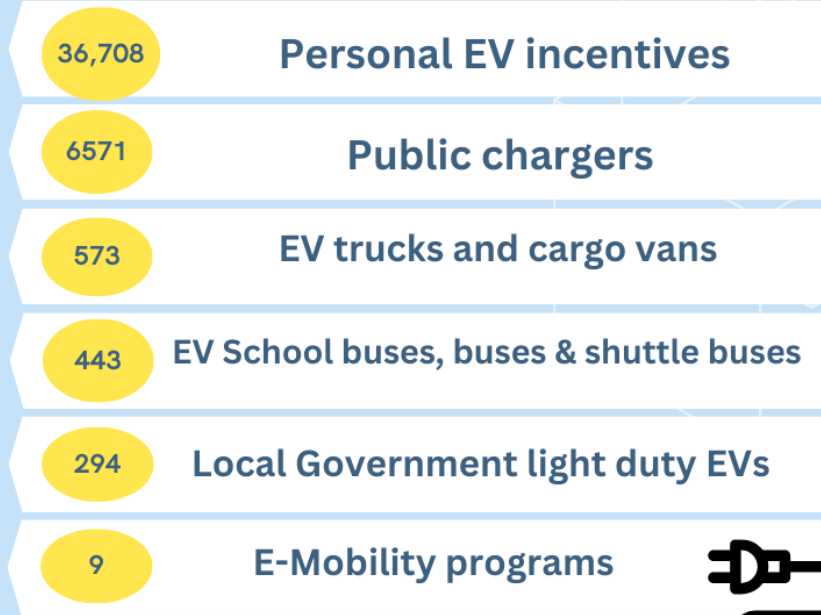
May 20, 2024 – Public Hearing 1 Strategies 1, 2, & 5 in the 2019 EMP



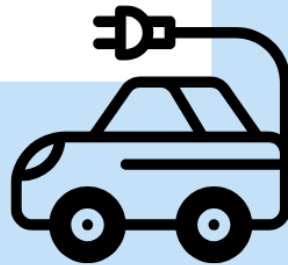
1.1 Decarbonize the transportation sector

- 1.1.1 Support the deployment of 330,000 light-duty electric vehicles on the road by 2025, per the State Zero-Emission Vehicle Program Memorandum of Understanding
- 1.1.2 Deploy electric vehicle charging infrastructure throughout the state
- 1.1.3 Encourage electric vehicle adoption through the purchase of electric vehicles and incentives for charging station installation in certain locations
- 1.1.4 Increase consumer and fleet owner awareness and acceptance of electric vehicles
- 1.1.5 Roll over the state's light-duty fleet to electric vehicles
- 1.1.6 Continue to improve NJ TRANSIT's environmental performance
- 1.1.7 Increase clean transportation options in low- and moderate-income and environmental justice communities
- 1.1.8 Partner with industry to develop incentives to electrify the medium- and heavy-duty vehicle fleet with battery or fuel cell technology, and to support R&D that will enable such electrification
- 1.1.9 Explore policies that can accelerate adoption of alternative fuels in the transportation sector

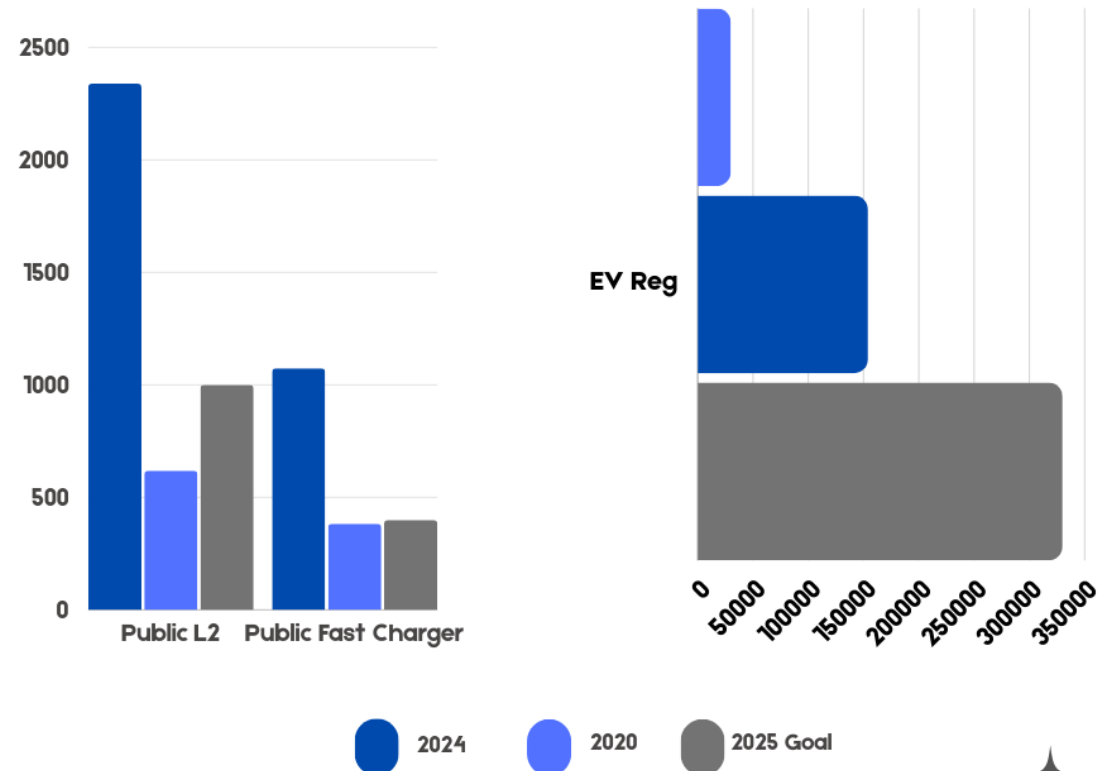
New Jersey Electric Vehicle EVolution



Awards made by DEP,
BPU & EDA



Clean Transportation Growth Since 2020





A whole of government approach to Zero Emissions transportation

- The Charge Up program offers trainings and resources to dealers across the state.
- DEP partners with PlugStar to provide dealer training on EVs to help dealers confidently sell EVs and support EV customers
- DEP funded “ride and drives” for over 10,000 residents providing nearly 700 test rides
- In 2024, NJ Transit released a Sustainability Plan
- In FY23, BPU’s Clean Fleet program provided NJ Transit incentives for: 20 EVs, 125 L2 chargers and six fast chargers
- BPU has released two Straw Proposals on Utility medium and heavy duty (“MHD”) incentives
- BPU has approved nearly \$6 million in MHD charging incentives with RGGI funding
- EDA launched the NJZIP Program
- BPU chaired the Hydrogen Task Force



1.2 Improve connections between people, jobs, and services

- 1.2.1 Identify opportunities to strengthen connections between people, jobs, and services
- 1.2.2 Energize the implementation of the Transit Village Initiative and transit-oriented development
- 1.2.3 Relieve congestion and idling throughout New Jersey
- 1.2.4 Establish a sustainable funding source for maintaining the transportation system

Clean Transportation Successes

- DEP has funded nine E-Mobility projects to provide residents with new zero emission transportation options
- BPU produced a “New Jersey Overburdened Communities Electric Vehicle Affordability Program Study” in 2022 to explore how to better provide zero emissions transportation options in transportation deserts
- DEP was awarded \$10 million in federal funding to provide affordable EV charging in LMI communities at or near multi-unit dwellings or transit stations
- DEP updated the No Idling Pledge map in Fall 2022
- The State is exploring ways to sustainably fund NJ Transit
- The 2024 reauthorization of the Transportation Trust Fund includes a mechanism to collect fees from EV drivers



1.3 Reduce port and airport emissions

- 1.3.1 Support electrification of diesel-powered transportation and equipment at the ports and airports
- 1.3.2 Support a diesel truck buy-out program
- 1.3.3 Support community solar developments on port property

Port Emissions Successes

- The Port Authority has been approved for Clean Fleet incentives for 127 light duty EVs, 44 Class 2B- 6 EVs, 45 level 2 chargers, 6 fast chargers for fleets, and 4 public fast chargers
- Northeast States for Coordinated Air Use Management released regional action plans for MHD vehicle electrification
- \$162 million in funding awarded statewide since 2019 to support purchase, access to and charging of MHD EVs in the port
- DEP has funded marine repowers, on-road and non-road electrification at the port
- A 3.9 MW rooftop community solar project was approved on a warehouse at 201 Bay Street Elizabeth

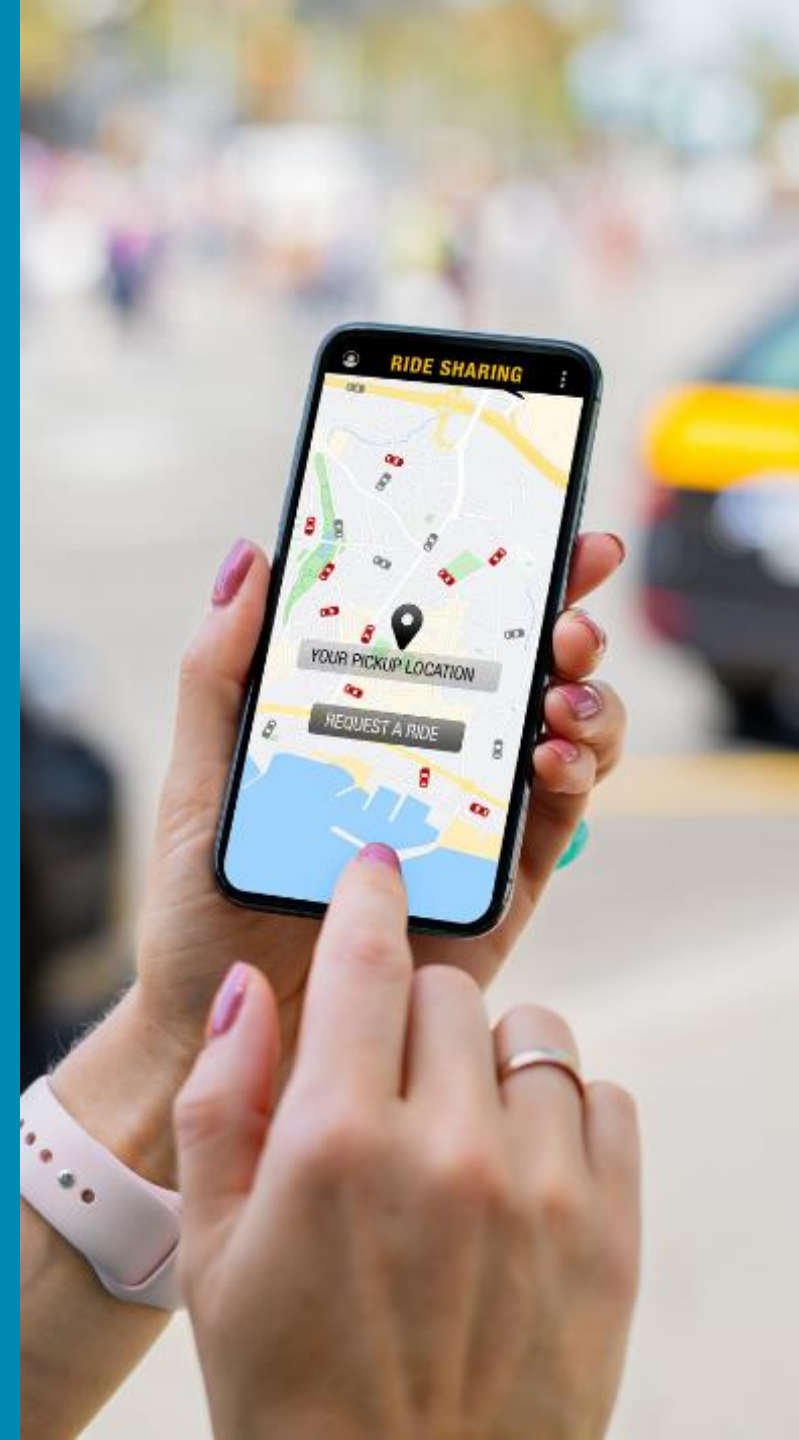


Case Study: What is eMobility?

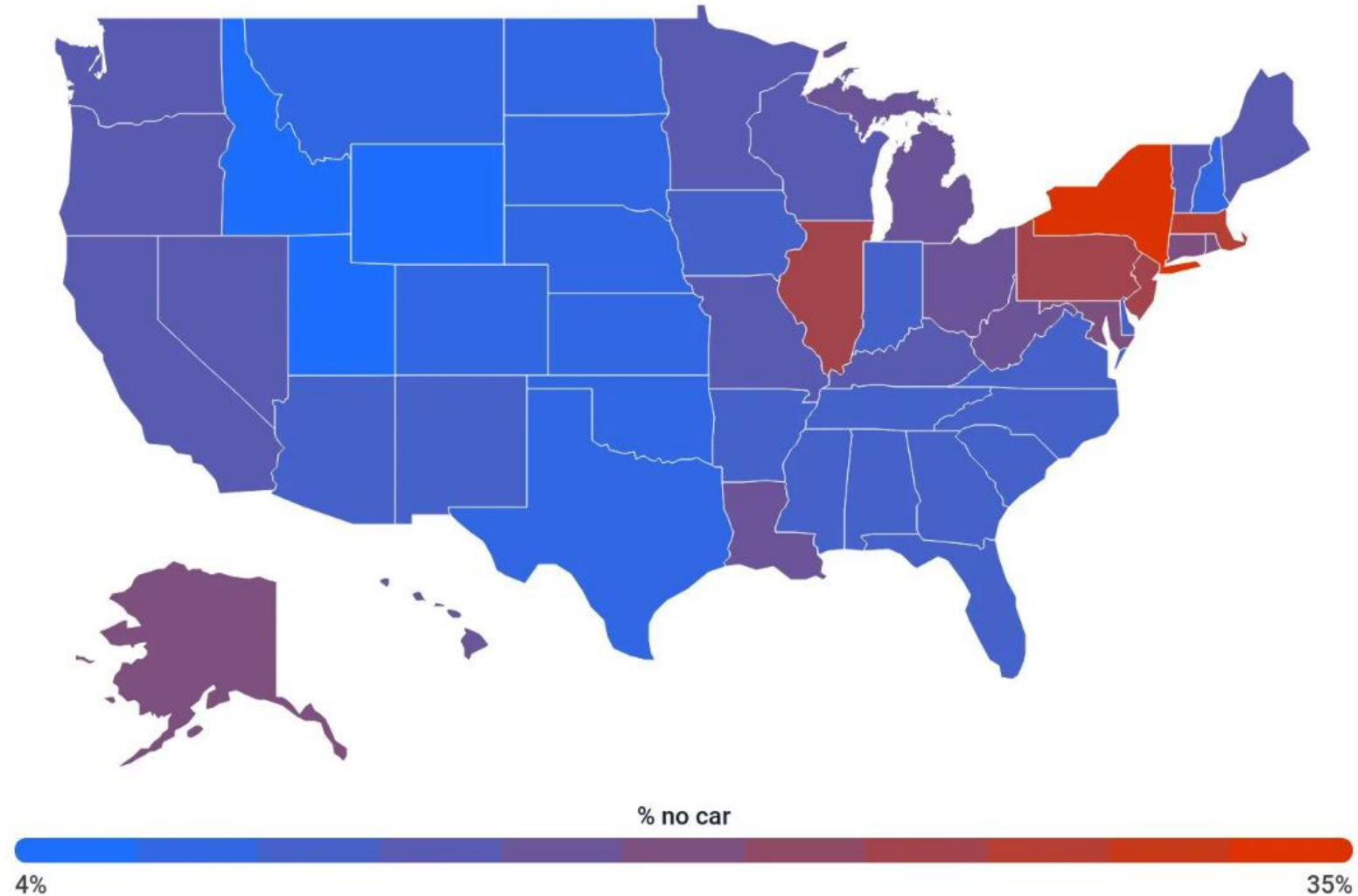
Shared Transportation using EVs:

- ✓ Rideshare
- ✓ Carshare
- ✓ Ride hailing
- ✓ Shuttle Services
- ✓ And more

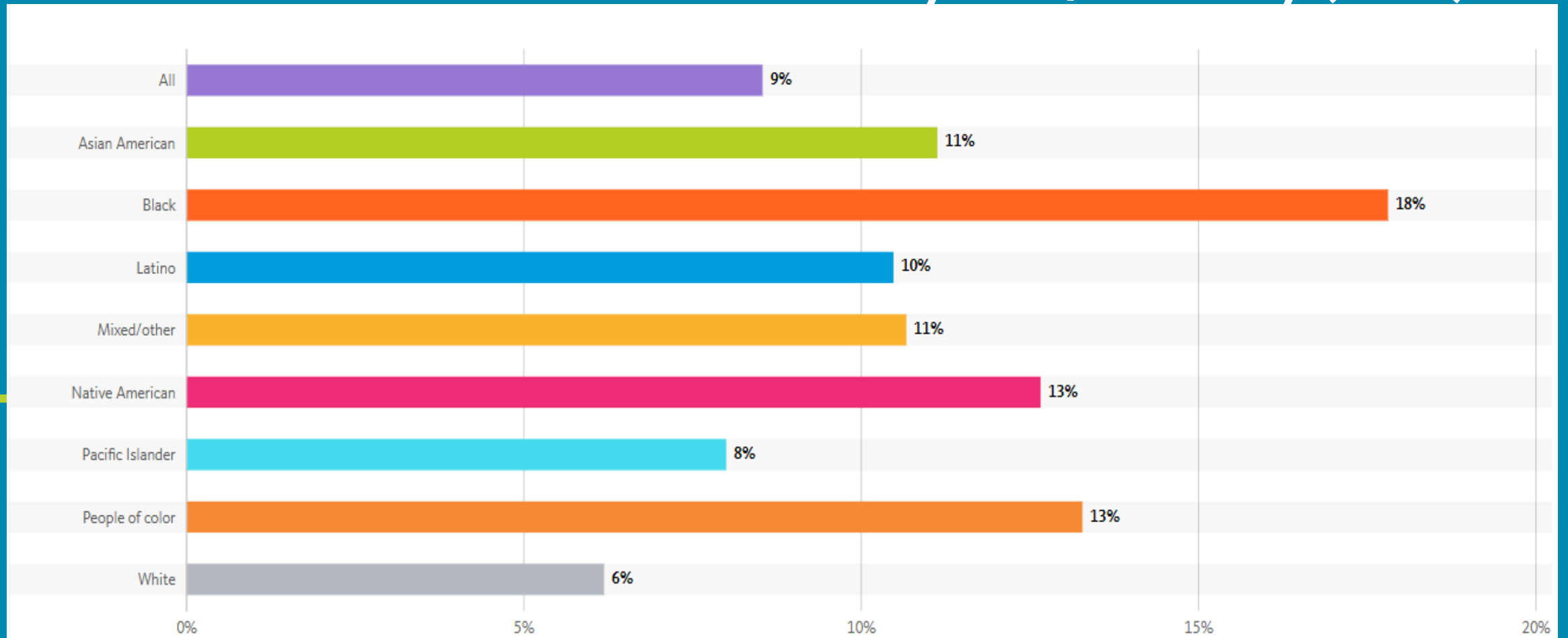
dri^{te} green
new jersey



States with lowest car ownership rates by household



% of households without a vehicle by race/ethnicity (2020)



WHAT IT SHOWS

WHY IT MATTERS

TOUR

Data source: IPUMS USA | National Equity Atlas

DEP's eMobility Grant Program

- **GOtrenton!** – A collaborative, electric mobility solution that improves Trenton residents' access to jobs, healthcare, food shopping and social services.
- **Jersey City/Via-** Transition existing on-demand fleet to EVs.
- **Woodbridge** – Electric Shuttle Connection will fill transportation gaps from the Metro Park and Woodbridge Train Station.
- **Zapp** – DC Fast Charging hubs in the greater Newark and Camden areas to support all-electric rideshare fleets.
- **Blink** – Community station based all-electric carsharing service.
- **Envoy-** mobility as an amenity pilot using EVs for carsharing at affordable housing units in NJ.
- **Zipcar-** Launch of 16 publicly accessible EV carsharing vehicles at 8 locations in overburdened communities.



drive green
new jersey



Powered by **isles** & **CIRCUIT**



Project Leader: Isles, Inc.

A nonprofit community development and environmental organization based in Trenton

Community Engagement

- 30% of Trenton households do not own a personal vehicle
- 21% use carpooling as their primary mode of travel for work
- 93% believe an electric car and/or ridesharing program would help
- 96% felt the program would be beneficial to Trenton residents overall
- Community stakeholders identified transportation as one of their main challenges for extending social, financial, and health services to residents

Project Highlights

- On-demand shuttles (all-electric)
- Workforce van (all-electric)
- Local workforce



On-Demand Shuttle Destinations include:

- Transit Center
- Soup Kitchen
- Grocery Stores
- Health Center
- Senior Center
- Community College
- Multi-Family Housing
- Community Center
- Public Library
- Parenting Center

Since launching in October 2023, *GOtrenton!* has:

- Provided nearly 10,000 rides
- Served 13,000+ passengers
- Avoided 8 metric tons of GHG emissions





Next Steps

Capitalizing on our successes and preparing for long term Clean Transportation Growth

- Roadmap to Zero Emissions – A Partnership to Plug In report identifying short-medium-long term strategies to move New Jersey to Zero Emissions
- Utility MHD Make Ready Programs
- Utility technical planning services for EV fleets and certain public charging
- Leveraging federal funds to support and bolster current efforts in all sectors



Strategy 2: Accelerate Renewable Energy and Distributed Energy Resources

Renewable Energy: Solar

- Reached 200,000 solar installations
- Will pass 5,000 MW installed in 2024
- 2 years with the highest deployment were 2022 & 2023
- Expect to award well over 1,000 MW of solar in a single energy year, ending May 31, 2024
 - 500 MW community solar
 - 310 MW grid supply
 - Over 280 MW residential and small commercial

Solar Program Development

- Completely new Solar Program, providing targeted incentives for different market segments and bring down the costs of solar generation in New Jersey:
 - Administratively Determined Incentive (ADI) for residential and small commercial projects
 - ADI for community solar
 - Competitive incentives for grid supply and large commercial projects
- Dual Use Program under development
- *Other Distributed Energy Resources Efforts*: Storage Incentive Program under development

Renewable Energy: Offshore Wind

- 7,500 MW of generation awarded so far in three solicitations
 - 5,252 MW remains under active development
- Transmission projects awarded to facilitate interconnection of 6,400 MW
- Solicitation #4 currently open
- Bids for Pre-Built Infrastructure under review

Offshore Wind Supporting Efforts

- New Jersey Wind Port: dedicated marshalling and manufacturing area
- Monopile manufacturing facility at Port of Paulsboro
- NJ Wind Institute
- Research and Monitoring Initiative



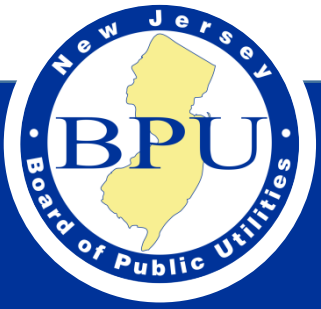


Case Study: Community Solar

New Jersey has become a leader in Community Solar!



Caven Point, Jersey City – Photo Courtesy Hartz Mountain/PowerMarket



Community Solar: What is it?

- A large solar array that is virtually divided among multiple participants (subscribers) by means of a credit on their utility bill
- The system is remotely located, as opposed to being located on the subscriber's own roof
- Enables access to solar energy for those who have not been able to go solar in the past, including renters and households, institutions, or businesses where the roof isn't appropriate for solar installation, or solar is cost-prohibitive



Community Solar Pilot Program

- Two program years, with awards made in 2019 and 2021
 - The Board awarded 150 projects totaling 243 MW
 - 102 projects with 141 MW have come online
 - 16 projects with 51 MW are still in construction



Mount Laurel – Photo courtesy Solar Landscape and NJBPU President Joe Fiordaliso



Community Solar Energy Program

- Permanent program established by the Board on August 16, 2023
- Incentive of \$90 / MWh for 15 years
- Registration opened November 15, 2023
- 225 MW made available, divided among EDCs
- 224 projects with 225 MW accepted
- The Board opened an additional 275 MW on May 15, 2024



Linden Hawk Rise Solar, Linden – Photo Courtesy Navisun



LMI Participation

Low- to moderate-income households

- All projects must have 51% of capacity subscribed by LMI subscribers
- LMI households have income below 80% of area median income
- LMI status may be verified with participation in assistance programs, residence in certain census block groups, and self-attestation



Strategy 5: Decarbonize and Modernize New Jersey's Energy System

5.1: Upgrade the distribution system to handle increased electrification and DER

- 4/30/2024 NJBPU announced the approval of the proposed grid mod rules, which calls for the developing integrated distributed energy resource plans for all of the states' EDCS
- The stakeholder process is ongoing for these plans

5.2 Exercise regulatory jurisdiction and increase oversight over transmission upgrades

- NJBPU will continue to advocate at the federal and regional level to ensure plans are consistent with meeting the State's clean energy goals
- 3/7/2024 Released a Request for Information on FERC order 2222
 - Had until April 22, 2024 to respond
 - Received 13 comments from stakeholders
- 4/1/2024 FERC signed off on the next phase of the State Agreement Approach Study Agreement
 - This request asks PJM to solicit transmission solutions to serve the new total of 11,000 MW of Offshore wind
- 5/13/2024 FERC order 1920 established transmission and cost allocation requirements to ensure a reliable grid
- Proposed amendments to the CTOA are being monitored by BPU staff and participation in those stakeholder meetings are ongoing

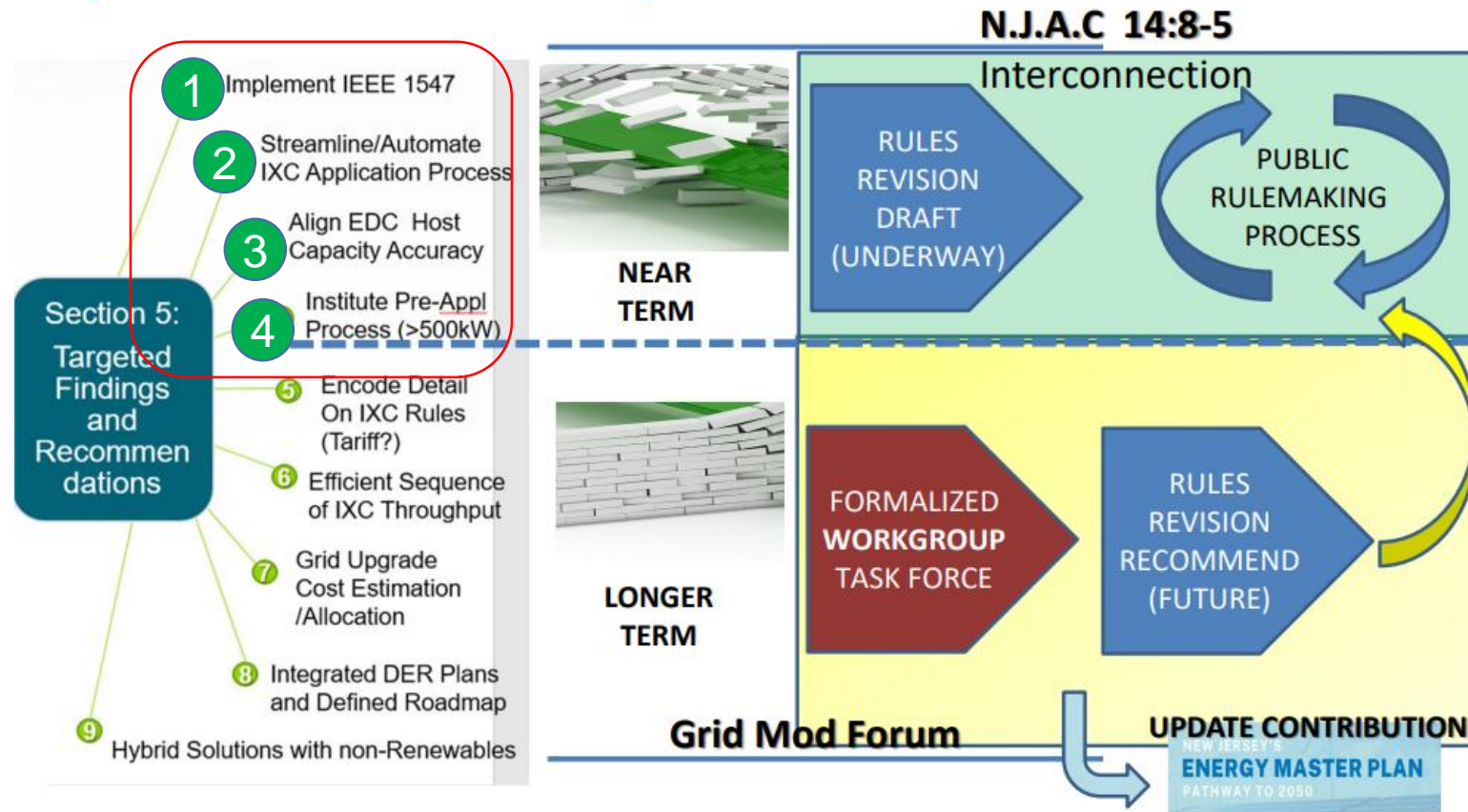
5.3 Modify current rate design and ratemaking processes

- All electric distribution companies (“EDC”) have completed or are near completion of implementing Advanced Metering Infrastructure
- As part of the Light Duty EV Utility Programs, each EDC had to provide a temporary EV Time of Use rate for residential customers and a more permanent EV managed charging rate is required to be proposed in each Utilities’ next rate case
- NJBPU has also published two Straw Proposals on MHD EV Utility programs, both of which encouraged the Utilities to create managed charging programs for future programs
- As part of the Energy Efficiency Triennium 2 filings, the EDCs have proposed demand response programs, which could potentially include time-varying rates.

5.4 Maintain gas pipeline system reliability and safety and plan for future reductions in consumption

- 3/15/2023 Governor Phil Murphy signed Executive Order 317 which directed the NJBPU to engage with stakeholders concerning development of Natural gas utility emission reduction plans within in the state
- 8/23/2023 A technical conference was hosted by the BPU to begin the planning process of reducing emissions in the natural gas sector to meet the state's goals

Strategy 5 - Case Study: Grid Modernization Rules



Details On 14:8-5 Rules Changes

1 Finding One: Update IEEE 1547

- Updated in Definitions N.J.A.C. 14:8-5.1, Certification N.J.A.C. 14:8-5.3, and throughout rules

2 Finding Two: Streamline/automate interconnection process

- EDCs will create web portal for Common Interconnection Agreement Process (“CIAP”)
- Timelines added to all steps of application/review process
- Pre-application verification/evaluation process added to provide developers with updated information upon request
 - Enhanced version for community solar projects
- Hosting capacity maps to be publically updated quarterly
- Standardization of system impact studies for large projects
- Denied/failed applications must be given thorough reasons why

Details On 14:8-5 Rules Changes

- ③ Finding Three: Align EDC Hosting Capacity Accuracy
 - Entire new subchapter added: N.J.A.C. 14:8-5.11
 - EDCs given 120 days after implementation to submit tariff filing for hosting capacity map updating process
 - Standards for hosting capacity reporting added
 - Quarterly updates mandated
 - North American Electric Reliability Council standards used to allow information sharing to greatest possible extent, including GIS information

Details On 14:8-5 Rules Changes

4 Finding Four: Institute Pre-application Process (>500KW)

- New subchapter added: N.J.A.C. 14:8-5.10
- PAVE requests for \$300 fee added; enhanced PAVE for \$1000
- Timelines for Pre-Application Verification Process (“PAVE”) process included
- CIAP portal use required
- Relevant information required in PAVE report listed
- FAQ on website to be added about PAVE reports