June 12, 2024

Submitted electronically via https://publicaccess.bpu.state.nj.us/

Sherri L. Golden
Secretary of the Board
New Jersey Board of Public Utilities
44 S Clinton Ave.
Trenton, NJ 08625

Re: Sierra Club Comments on New Jersey Board of Public Utilities Docket No. QO24020126, In Re 2024 New Jersey Energy Master Plan

Dear Secretary Golden,

The Sierra Club, on behalf of its more than 100,000 members and supporters in New Jersey, thanks you for this opportunity to submit comments on the 2024 update to New Jersey's Energy Master Plan ("EMP"). This EMP Update is part of a critical process to ensure that New Jersey meets the 80% greenhouse gas reduction target by 2050 as required by the state's 2009 Global Warming Response Act[1] and successfully reaches New Jersey's goal of 100% clean energy by 2035[2]; given the scope of the climate emergency confronting New Jersey, and our nation and world as a whole, achieving those goals is vital. The Sierra Club accordingly urges the Board and the whole of the New Jersey state government to achieve the strategic, equitable and cost-effective decarbonization of our top three most carbon emitting sectors—transportation, buildings, and energy generation—while simultaneously modernizing and updating their connective tissue, the grid.

The following comments are intended to highlight particular areas where the Board and other New Jersey government agencies must take steps to achieve New Jersey's decarbonization and clean energy goals. But in addition, the Sierra Club urges the Board to take this opportunity to build into the process clear benchmarks, reporting, and other mechanisms to ensure that progress towards those goals actually occurs and occurs on schedule, with teams in place to identify issues inhibiting successful implementation and the adjustments needed to achieve compliance with the state's goals. This will enable the public to be reassured that New Jersey is effectively combatting the climate emergency.

[1] N.J.S.A. 26:2C-37 *et seq*.
[2] Exec. Order No. 315 (Feb. 15, 2023), 55 N.J.R. 509(A)-11(A) (Mar. 20, 2023).

Background

New Jersey is already experiencing severe impacts from climate change, ranging from increased flooding events to increased temperature spikes, as outlined in the Global Warming Response Act 80x50 Report.[3] As the Report notes,

> Without steep and permanent reductions in global GHG [i.e. greenhouse gas] emissions within the next several years, New Jersey's people and their property will experience significant adverse effects of climate change, including rising sea-levels, increases in temperature and precipitation causing periods of both intense storms and drought, and chronic inundation from flooding.

Indeed, as New Jersey recognizes, "[w]ithout steep reductions . . . New Jersey's sea-levels could rise by as much as 5.1 feet by the year 2100 and 8.3 feet by the year 2150" placing huge portions of the state under direct threat; accordingly, continued emissions of greenhouse gases presents severe "risks to the continued success of New Jersey's economy, public health, and environment" and "the need for concerted action could not be clearer." *Id.*

Additionally, high ozone levels are a persistent public health issue in New Jersey, with all New Jersey residents living in areas that are failing to attain safe, healthy levels of ozone. Alarmingly, every single person in New Jersey lives in an ozone nonattainment area, based on current nonattainment designations in the New Jersey portions of the Philadelphia-Wilmington-Atlantic City and the New York-Northern New Jersey-Long Island areas.

New Jersey has continued to log high 8-hour daily ozone values, reaching as high as 100 ppb in 2018—which is 43% higher than the NAAQS of 70 ppb—as well as 87 ppb in 2021 and 90 ppb in 2022.[4] New Jersey has consistently exceeded the ozone NAAQS each year. Moreover, the 8-hour daily ozone maximum values have been worsening over the last 3 years.[5]

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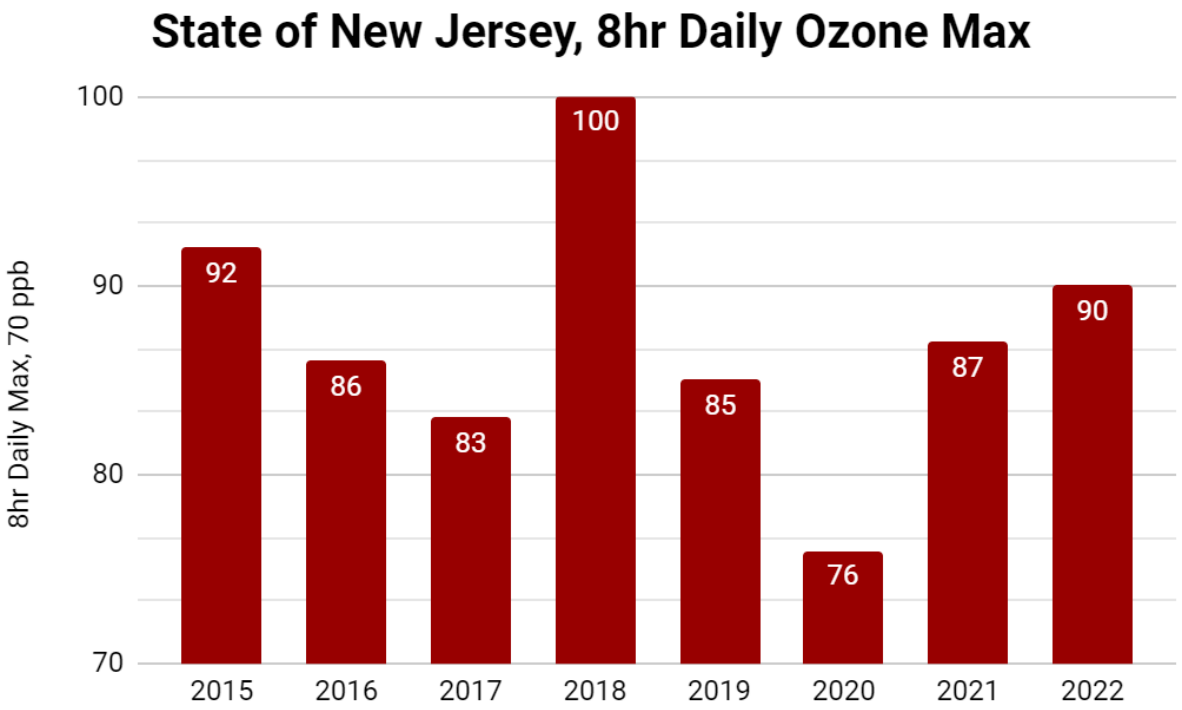
[3] *See* https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf (hereinafter "80x50 Report")

[4] EPA, *Outdoor Air Quality Data, Monitor Values Report*, https://www.epa.gov/outdoor-air-quality-data/monitor-values-report. This data excludes exceptional events.

[5] EPA, *Outdoor Air Quality Data, Air Data - Ozone Exceedances*, https://www.epa.gov/outdoor-air-quality-data/air-data-ozone-exceedances. The number of exceedance days (DV > 0.070 ppm) from 2015 to 2022 for the specified nonattainment area was downloaded and graphed.

Figure 1: New Jersey 8-hour Daily Ozone Maximum Values



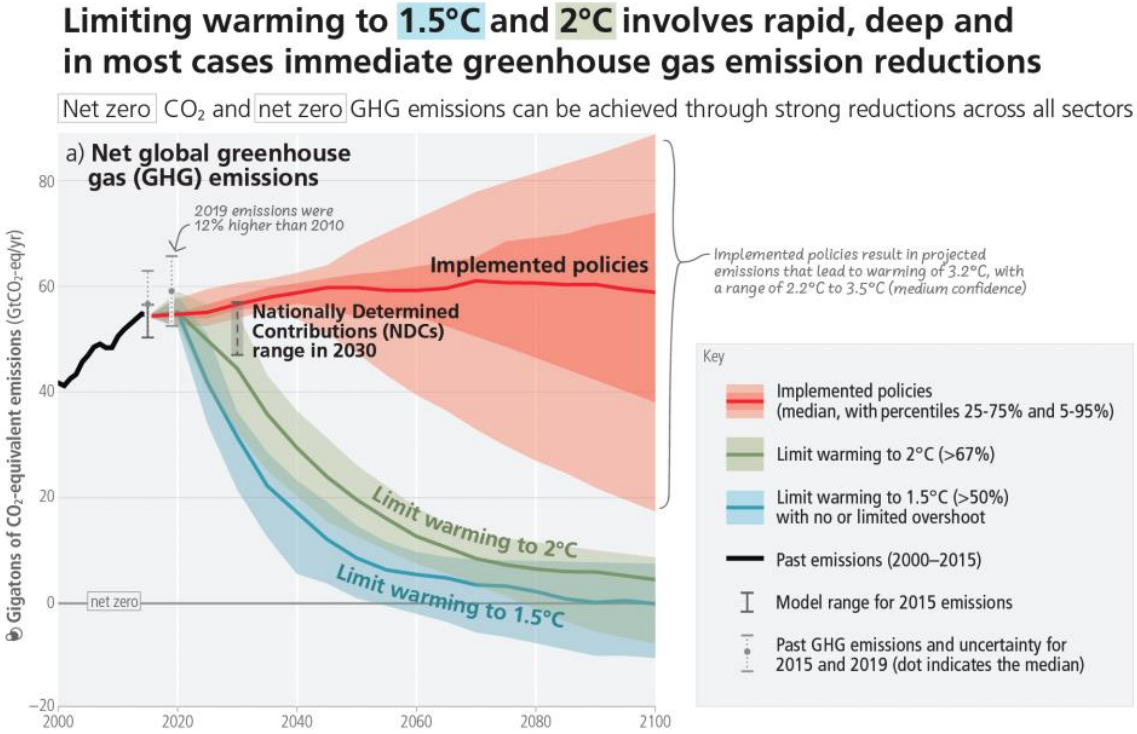
As the numbers above demonstrate, while New Jersey's nonattainment areas were making halting steps toward meeting the ozone NAAQS, that progress has been reversed since 2020. Communities in and surrounding urban areas are routinely exposed to extremely high ozone concentrations, and communities of color and low-wealth communities bear an especially unfair burden of fuel costs and harmful air pollution[6] due to decades of systematic marginalization.[7] This ozone exposure has a negative impact on human health.

Further, and as the Intergovernmental Panel on Climate Change ("IPCC") recently reported, "Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming," with the result that "global surface temperature" is already "1.1°C above 1850-1900 in 2011-2020."[8] With "high confidence," the IPCC observes that even this initial increase in global mean temperatures has resulted in "widespread adverse impacts and related losses and damages to nature and people."[9] Nonetheless, greenhouse gas emissions continue to increase, making it "*likely* that warming will exceed 1.5°C during the 21st century and make it harder to limit warming below 2°C."[10] In order to avoid catastrophe, the IPCC states, again, with "high confidence" that

[6] *See, e.g.*, https://www.witn22.org/2022/04/21/new-report-reveals-mixed-results-for-air-pollution-in-delaware/.
[7] *See, e.g.*, https://www.npr.org/2022/03/10/1085882933/redlining-pollution-racism.
[8] Synthesis Report of the IPCC Sixth Assessment Report (AR6) Summary for Policymakers, *available at* https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf, at 4.
[9] *Id.* at 5.
[10] *Id.* at 10 (emphasis in original).

All global modeled pathways that limit warming to 1.5°C (>50%) with no or limited overshoot, **and those that limit warming to 2°C** (>67%), **involve rapid and deep and, in most cases, immediate greenhouse gas emissions reductions in all sectors this decade**. Global net zero CO2 emissions are reached for these pathway categories, in the early 2050s and around the early 2070s, respectively.[11]

Figure 2: IPCC Greenhouse Gas Emission Projection Pathways[12]



The New Jersey Legislature itself has found—in passing the Global Warming Response Act in 2007 and with revision in 2019—that "the effects of increasing levels of greenhouse gases in the atmosphere are accepted by many respected scientists and members of the international community as seriously detrimental to the ecosystems and environment of the world" and "if steps are not taken to reverse these trends, the effects on human, animal and plant life on Earth may be catastrophic." N.J.S.A. § 26:2C-38. As such, the Legislature found and declared "that it is in the public interest to establish a greenhouse gas emissions reduction program to limit the level of Statewide greenhouse gas emissions, and greenhouse gas emissions from electricity generated outside the State but consumed in the State, to the 1990 level or below, of those emissions by the year 2020, and to reduce those emissions to 80% below the 2006 level by the year 2050." *Id.* (the "80x50" goal).

[11] *Id.* at 21 (emphasis added).
[12] *Id.* at 23.

To achieve these goals, the Energy Master Plan lays out seven strategies:

1. Reducing Energy Consumption and Emissions from the Transportation Sector;
2. Accelerating Deployment of Renewable Energy and Distributed Energy Resources;
3. Maximizing Energy Efficiency and Conservation, and Reducing Peak Demand;
4. Reducing Energy Consumption and Emissions from the Building Sector;
5. Decarbonizing and Modernizing New Jersey's Energy System;
6. Supporting Community Energy Planning and Action in Underserved Communities; and
7. Expanding the Clean Energy Innovation Economy.[13]

Comments on Strategies

Strategies 1, 2, and 5

Medium and Heavy-Duty Vehicles

The transportation sector is the largest source of greenhouse gas emissions in the United States[14] and in New Jersey.[15] The transportation sector is also a major source of other toxic pollution in the United States and New Jersey. Fossil-fueled cars and trucks directly emit pollutants such as particulate matter (PM), nitrogen oxides (NOx), sulfur oxides (SOx), and contribute to ground-level ozone, which are all harmful to air quality and human health. According to the Environmental Protection Agency, 54 percent of NOx emissions come from mobile sources with 20 percent of that coming from light- and medium-duty vehicles.[16] Further, light- and medium-duty vehicles account for approximately 19 percent of mobile source PM 2.5 emissions as well.[17] Together, these pollutants not only harm the environment and our air, but also human health. Exposure to these emissions can cause asthma attacks, heart attacks, strokes, cancer, and premature death. In New Jersey, over 654,835 adults and 109,049 children suffer from asthma, fueled in part by the emissions from the transportation sector.[18] Further, Communities of Color and lower income communities tend to bear the brunt of these emissions and have been historically overburdened with pollution from the transportation sector.

A key strategy to reduce emissions from the transportation sector is by transitioning to zero-emission vehicles—which include battery electric, plug-in hybrid electric, and fuel-cell electric vehicles. As the name suggests, these vehicles emit zero tailpipe emissions while running on electricity and will help to improve air quality and health of New Jerseyans, all while reducing climate-harming greenhouse gas emissions.

While New Jersey has taken important steps towards transitioning towards zero-emission vehicles—such as adopting the California vehicle rules—in other areas progress has been

[13] New Jersey Board of Public Utilities, 2019 New Jersey Energy Master Plan: Pathway to 2050, https://nj.gov/bpu/pdf/publicnotice/NJBPU_EMP.pdf.
[14] https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks
[15] https://dep.nj.gov/wp-content/uploads/ghg/2022-ghg-inventory-mcu_final.pdf
[16] 88 Fed. Reg. at 29,186.
[17] *Id.*
[18] https://www.lung.org/research/sota/city-rankings/states/new-jersey

frustrated. For example, the imposition of new registration fees for electric vehicles will slow the very growth in EV sales that New Jersey elsewhere encourages; similarly, the lack of clear guidance from the Board on approvable utility medium and heavy-duty electric vehicle charging infrastructure has blocked the significant progress that would otherwise have occurred on that front.

Accordingly, the Sierra Club strongly recommends that the Board finalize the Medium and Heavy-Duty Electric Vehicle Charging Ecosystem, Docket No. QO21060946. The pending straw proposal in that proceeding would represent an enormous step forward, as a number of stakeholders–the Club included–made clear in comments on the proposal back in January of 2023. However, that public comment period closed over *sixteen months ago*, and a final order has still not issued. Finalization is long overdue, and this delay jeopardizes progress in transitioning medium and heavy-duty vehicle fleets to zero-emissions systems.

Finalizing the proposal will better enable entities like New Jersey Transit and school districts–many of whom have received federal grant money towards clean school buses collectively totaling millions of dollars–to speed the efficient, cost-effective integration of electric vehicles into their fleets. Much of that money is only available for the acquisition of clean school buses, and does not provide funding for the infrastructure needed to power electric school buses. In other words, all EVSE and make-ready projects necessary to accommodate school bus electrification—even where federal dollars are paying for the buses themselves—will have to come from electric distribution companies and school districts themselves. As a result, without programs in place to help ensure that New Jersey's school districts can plan confidently to build out charging for electric buses, school districts may either miss out on federal funding entirely, or direct some portion of what funding is secured towards vehicles that still emit hazardous air pollutants. A strong order from the Board clearing a path towards school bus charging infrastructure is thus vital to ensure that New Jersey's schools can make the most of federal dollars, and that cost- savings and air quality improvements are realized by New Jersey's communities.

Vehicle-to-Grid

Positive action by the Board on the overdue straw proposal would not only help speed vehicle electrification, but has the potential to help achieve grid decarbonization overall. Using EV batteries as storage can help increase grid flexibility and help apply downward pressure on costs by balancing out supply and demand. Particularly for MHDV fleets, where fleet operators may be more able to plan in advance when charging will occur and coordinate with EDCs on optimal charging and discharging times, vehicle-to-grid ("V2G") integration can be an important additional tool for electrification. School bus fleets in particular may be well-suited for V2G, as school buses have predictable activity cycles, and are likely able to schedule charging for nights when electricity prices are low or midday when solar output is high and could be available for discharging to the grid at peak demand periods. Indeed, school bus batteries are particularly well suited to serve as distributed energy storage resources because they are largely idle in the hot summer months when the grid is most stressed.

Electric Vehicle Incentives

New Jersey's on-again off-again funding of EV incentives is a major roadblock to rapid adoption of EV passenger vehicles. Full funding consistent with the adoption goals is necessary. The state needs to set annual budget appropriations based on annual adoption goals, not as a flat annual amount that runs out in mid-year, which has been a problem in the past: in FY 2022/23, funding ran out in March 2023; in FY 2023/24, funding ran out in Nov 2023. Similarly, arbitrary caps on participation in EV charging station incentives need to be removed and extended to meet full demand for home EV charging. Incentives should be maintained for lower income buyers but could be incrementally scaled back for higher income families as EVs constitute higher percentage of annual sales volume.

Transit

NJ Transit needs to develop and implement a realistic plan to convert its fleet of transit buses to zero-emission vehicles by 2035, complete with annual cost estimates for new buses and depot upgrades. The current NJ Transit sustainability plan is aspirational and looks back on what is currently in the works, instead of forecasting a realistic roadmap of what is needed to achieve current climate goals.

Accelerating Deployment of Renewable Energy and Distributed Energy

The Sierra Club strongly recommends for the Board to develop a plan to achieve 100% clean electricity by 2035 with measurable milestones along its timeline. Integrated in these milestones should be the rejection of new fossil-fueled generated electricity infrastructure, and a strategic planning process for the future decommission of existing fossil-fueled electricity generating plants.

There is much the Board could and should be doing to encourage greater development of rooftop solar, parking canopy solar, community and ground-mounted solar, including individual, distribution-scale, and utility-scale as well as other distributed clean energy generation. New construction in warehouses in New Jersey presents a golden opportunity for the warehouse industry to make a major contribution without using any land to do it and while earning good revenues for the industry and making investments in local New Jersey economies. At the same time, communities would benefit enormously by giving residences access to renewable electricity without the major investment by the homeowner, and by avoiding the site limitations that many residential owners have. Community solar is a fantastic opportunity where the Board is in full control of the outcome; the Board should do more to encourage its expansion.

The Sierra Club eagerly supports the Board's strategic offshore wind procurement and deployment and urges the Board to put mechanisms in place that will secure the achievement of the 11GW of offshore wind generated power by 2040, a goal that is essential for the state to achieve it clean electricity goal.

Strategies 3 and 4

There is abundant scientific data that demonstrates that the consumption of gas and other delivered fuels in homes and buildings to power heating, cooling and appliances is incredibly damaging to our public health, particularly for children and sensitive populations. Recognizing that the spaces that we reside, work and congregate are a threat to public health and to our changing climate, the proposed EMP must prioritize the full decarbonization of our buildings and to simultaneously prepare our homes and building to be safe, healthy and efficient so that the energy savings do not leak out through the drafty windows.

Decarbonization and Gas Infrastructure

Gas combustion is a major driver of greenhouse gas and smog-causing emissions, and methane itself is an incredibly powerful greenhouse gas in its own right. According to the U.S. EPA, methane has 27-30 times the heat-trapping ability of carbon dioxide when calculated on 100-year timescales; [19] on shorter timelines, the effects are much greater.[20] Moreover, the methane distribution system—from wellhead to pipeline to combustion—is extremely leaky, with U.S. pipelines leaking between 1.2 million and 2.6 million tons of methane per year.[21] As such, impacts from methane usages and methane leakage present the risk of swamping the carbon dioxide emissions reductions New Jersey may achieve in other sectors.

Phasing out gas is accordingly critical to meeting decarbonization and public health objectives, and thus long-term planning must be deployed to align utilities' goals with those decarbonization goals. Specifically, planning must align gas utilities with New Jersey's climate goals, including numeric 2030 and 2050 and other interim gas throughput targets for New Jersey utilities, and proposals to mix hydrogen or biomethane into gas distribution systems must be cautiously and skeptically evaluated.[22]

Indeed, investments geared towards extending the longevity of gas pipeline networks should not be favored–New Jersey should be very careful about investments that may secure some short-term emissions reductions but ultimately leave the state shackled to medium and long-term reliance on gas for energy. Instead, New Jersey should be focused on encouraging the deployment of clean energy, including wind, solar, and storage technologies, to achieve decarbonization.

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[19] *See, e.g.*, https://www.epa.gov/ghgemissions/understanding-global-warming-potentials.
[20] On 20-year timescales, methane has more than 80 times the warming power of carbon dioxide. *See, e.g.*, European Union, Energy, Climate Change, Environment – Methane Emissions, https://energy.ec.europa.eu/topics/carbon-management-and-fossil-fuels/methane-emissions_en#:~:text=In%20fact%2C%20methane's%20ability%20to,on%20a%2020%2Dyear%20timescale.
[21] *See, e.g.*, N. Groom, Reuters, "US Natural Gas Pipeline Accidents Pose Big, Unreported Climate Threat," (March 8, 2024), https://www.reuters.com/sustainability/us-natural-gas-pipeline-accidents-pose-big-unreported-climate-threat-2024-03-08/.
[22] *See generally* Joint Environmental Comments to NJBPU re EO317 Gas Planning (Sept. 6, 2023), *at* https://publicaccess.bpu.state.nj.us/DocumentHandler.ashx?document_id=1313382.

The Board should move swiftly to finalize the process begun in Docket No. GO23020099 to implement Executive Order 317; underscoring the reality that fossil gas generation and distribution needs to be phased out with clear directives to plan for that phase-out is an integral element of achieving New Jersey's decarbonization goals.

Buildings

The buildings sector, both residential and commercial, and even inclusive of the building space itself (lighting and appliances) is one sector where a goal of zero emissions is achievable via effective building electrification and weatherization. Zero emissions, as per the recently released national definition from the Department of Energy, should be a stated goal for the operation of buildings, not net zero. Of course, recognizing that this would also require 100% clean electricity, appropriate grid modernization as per EMP Strategy 5 to handle the load, and efficiency measures to lessen the load. It is past time to prioritize the transition to clean electrification from only delivered fuels and electric resistance heating. We must prioritize the transition off all fossil fuel-burning appliances.

Effective integration of executive order 316 will be critical to meeting our building decarbonization goals while intentionally prioritizing low- and moderate-income households to receive these benefits. Thus, the clear incorporation of this executive order as part of the updated EMP goals is essential. Programs to electrify a targeted number of existing buildings each year are needed. If such programs are to be administered by utilities, each utility must be given a specific yearly number target of such buildings.

Triennium II

The Board has before it the "Triennium II" program filings from utilities across the state, and is charged with ensuring that these programs meet the requirements of both the RGGI Law and the Clean Energy Law.[23] Specifically, these programs must provide energy efficiency, demand response, and decarbonization elements consistent with New Jersey's goal of 100% clean energy by 2035. As such, the outcome of the Triennium II proceedings will be critical to ensuring that New Jersey is on a path to achieve that clean energy goal, and the broader decarbonization goals of the Global Warming Response Act. As such, the Board should not approve program elements that include gas equipment incentives, to ensure that ratepayer money is not being used to increase reliance on gas (ultimately incurring greater costs later as New Jersey decarbonizes). Similarly, building decarbonization programs should incentivize electrification, and not hybrid programs that likewise lock-in long-term reliance on gas. Finally, the Board should ensure that programs are consistent with clear benchmarks for achieving state clean energy and decarbonization goals.

Critically, the Board must continue to prioritize LMI households, which are the most likely to reside in unhealthy and inefficient homes. The Club accordingly urges the Board to administer the Comfort Partners Program so that the folks that need to be prioritized are, and no one is left behind regardless of their utility.

[23] N.J.S.A. 48:3-98.1 and P.L. 2018, c. 17.

Strategies 6 and 7

Equitable Access to Clean Energy

The updated EMP must always prioritize the equitable distribution of the clean energy economy by having accessibility of clean energy to overburdened communities at the forefront. If New Jersey does not prioritize overburdened communities, we will further exacerbate poverty and health disparities, and New Jersey will not reach its clean energy goals.

According to the Poverty Research Institute,[24] one third of New Jerseyans live in poverty and New Jersey has among the highest health burdens of any state from outdoor air pollution directly related to combustion of fossil fuels in buildings. Moreover, the impacts of indoor and outdoor air pollution are disproportionately borne by low-income households and communities of color. Air pollution is a driver of health disparities in asthma.

As mentioned before, effective integration of executive order 316 will be critical to meeting our building decarbonization goals while intentionally prioritizing low- and moderate-income households to receive these benefits. Building electrification is a huge opportunity to improve public health, and we must ensure that we can improve public opinion and adoption of resources that will support individual health. In order to address the high cost of living here in NJ, the updated EMP must support lowering emissions and energy burdens by deeply subsidizing residential multi-family units' transition to electric – heat pumps, stoves, and other appliances.

As gas rates continue to climb, New Jerseyans who make the switch from gas to highly efficient electric heat pumps can save anywhere from 4% to 41% on their annual energy bills, depending on utility territory. However, renting households represents nearly 40% of all households in New Jersey. Therefore, for all to maximize these economic savings, the EMP must present solutions to address building decarbonization, energy efficiency, and clean energy improvements for rental units in particular.

The Sierra Club believes that Goal 7.6 of the EMP is especially pertinent and needed now more than ever if the state is to achieve all energy, emissions reduction and economic opportunity goals. We urge the Board to develop and deploy the Clean Buildings Hub to develop workforce training, awareness, and education for builders, architects, contractors, engineers, real estate agents, and code enforcers in the most efficient electrification, construction, and retrofit building techniques.

Additionally, the "Justice 40" initiative is an essential and mandated component of all federal energy programs. The Justice 40 initiative requires that at least 40% of the programs' benefits should go to low income or environmentally challenged individuals, families, or communities.

[24] *See* Legal Services of New Jersey Poverty Research Institute *New Jersey True Poverty Tracker* (2022), at 8 (noting that "Forty-two percent of children in New Jersey experienced deprivation in 2019" and that children of color "had a True Poverty rate three times higher than children who were white or Asian.") *available at* https://proxy.lsnj.org/rcenter/GetPublicDocument/380358ae-ad82-43a2-8e35-cd243030dbbc.

The Sierra Club recommends for the Board for the integration of this initiative and for it to be a visible element to all state energy programs.

New Jersey State Leadership on Clean Energy Investments

Additionally, New Jersey can and should use the state's purchasing power to further clean energy innovation and market development. This means procuring EVs for state vehicle fleets, and focusing on transit electrification, as well as on investing in building electrification, energy efficiency, and solar plus storage in state facilities. For example, New Jersey should accelerate roll-over of state and municipal fleets to EVs vehicles by requiring all light duty vehicles purchased beginning in 2025 to be zero-emission. New Jersey should also continue to subsidize municipal medium and heavy-duty EVs such as garbage trucks, street sweepers, fire engines, and other vehicles. Similarly, NJ Transit should begin using solar energy for train traction power by placing solar panels over rail lines, stations and train yards.

This will not only save taxpayer money, but will also help incentivize the faster development and expansion of markets for clean technologies statewide.

Increased state-led investments will also help ensure that the benefits of decarbonization—in terms of pollution reduction and economic savings—are better shared economy-wide. Some of the areas worst-hit by air pollution in the state are also lower-income areas, and the state has a critical role to play in ensuring that its decarbonization goals equitably deliver benefits to those impacted and frontline communities.

Conclusion

The 2035 clean energy and 2050 decarbonization goals that New Jersey has articulated, passed into law, and taken steps to achieve are necessary to confront the climate emergency facing the state, and to ensuring that all New Jerseyans have access to clean air and safe environments in which to live and work. But goal-setting alone does not ensure that goals are met; concrete steps must be taken. As described above, there are specific programs and dockets that provide the Board and New Jersey as a whole with opportunities to take those steps. The state must take them, as part of a delineated plan—with milestones, reporting, and opportunities for the people of New Jersey to evaluate progress—to make certain that New Jersey's clean energy and decarbonization objectives are met.

Sincerely,

/s/ Anjuli Ramos

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