

2024 New Jersey Energy Master Plan Comments

A local community perspective

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Our comments on the proposed 2024 Energy Master Plan come from the perspective of working for the last two decades to mobilize the community and municipal government of Maplewood, Essex County, to address the global warming and climate impact of our energy use. During the last couple of years, we went through the process of rigorously considering and adopting a Community Energy Plan (CEP) to align our local efforts with the 2019 Energy Master Plan (EMP). We have submitted an Implementation Grant funding request to support carrying out initiatives from the Plan and will be continuing with the local work to implement the initiatives in our CEP and expand into new areas. We attended all four Public Hearings on the 2024 EMP and made brief comments at two of the hearings. We strongly support the Energy Master Plan process and look forward to further developments that will speed its implementation as we all work to achieve aggressive climate change mitigation goals.

The overarching consideration of our comments is that attention should be given to building some portions of the 2024 Plan from the ground up rather than from the top down. Our experience has been that there have been difficulties translating state-level goals and metrics into what this means at the community and household level. Examples include energy efficiency programs that look sound at the utility level but fall quite flat at motivating household decisions. Major purchasing choices, which will be made once in the next decade or two, have incentives that are neutral regarding household electrification versus reinvesting in continued fossil fuel dependence (perhaps with marginal efficiency improvements but nowhere near adequate for the path to 2050). **Understanding and incorporating requirements that arise at the community and household level, and making them integral to the plan, will make for a stronger 2024 Energy Master Plan.**

We will use the framework of the 2019 Energy Master Plan to share our local observations and suggestions at the level of detail that we have experienced them. Our experience is primarily with our residential sector that is fully built-out with older homes. This represents only a slice of the total energy pie, but a significant one that we anticipate will be a challenge on the path to meeting the New Jersey 2050 clean energy goals. Furthermore, this sector includes large numbers of voters whose support, willingness to make lifestyle modifications, and enthusiasm will be needed to bring about the economy-wide changes those goals will require.

Other general considerations:

- The extreme risks of not acting mean that scaling back our ambitions should not be considered an option. Since 2019 the informed world has come to recognize that the pace of decarbonization needs to be dramatically accelerated. The 2024 EMP needs to explore as many elements as possible of the different pathways with consideration of their impact on maintaining or speeding up the overall pace of decarbonization.
- Maplewood’s planning accepts that the chosen solution is likely to be decarbonizing the electricity generation system and expanding its capacity to replace most fossil fuel burning functions in our daily lives. **Many purchasing decisions at the community and household level made during the lifetime of this plan will still be in place in the 2040s and even beyond. The 2024 EMP will be helpful if it identifies these immediate decision points with long term impacts and supports current outcomes that will continue to be appropriate as the electricity supply becomes decarbonized.**
- Standalone outreach intended to increase awareness or interest is often largely ineffective and of dubious value. People are inundated with information and largely ignore new efforts to get their attention even when they come from respected local leaders. Outreach efforts are easily undermined by contractors and others in favor of business as usual. Costs for advertising and other outreach by the NJ Clean Energy Program and utilities should be evaluated for their cost-effectiveness in yielding concrete actions, not more nebulous general awareness. On the ground decision makers will benefit from step-by-step support and guidance in navigating the extended process for most of the changes envisioned, until these programs sell themselves, i.e. when they are compelling enough that peers can relate their experience and successes to each other.

Specific comments within the framework of the 2019 EMP Strategies:

1 Reduce Energy Consumption and Emissions from the Transportation Sector

- a. Considerable progress has been made since 2019 in making electrical vehicles a viable option, subject to the availability of affordable electric vehicles, and especially for our large sector of homes with individual driveways, and for municipal fleets. Maplewood’s garbage and recycling are contracted with private companies whose trucks cover multiple routes per week including travel through and drop-off in communities that are already environmentally challenged. Similarly, our school buses are privately contracted. These are both areas where electrification should be incentivized, encouraged, and mandated in the 2024 EMP as vehicles become available, including notably for operators of contracted services.

2 Accelerate Deployment of Renewable Energy and Distributed Energy Resources

- a. **Costs for residential solar remain stubbornly high even with very low solar module and other hardware costs.** Too many contractors of unknown quality, each with high customer acquisition costs, creates paralyzing uncertainty rather

than consumer-friendly competition. Websites that allow customers to rate their solar installer have not helped locally. **Tighter management of the residential solar industry could lower the installation costs and thereby reduce the expense of incentives.** Examples from other jurisdictions with dramatically lower costs should be considered as a source of guidance.

- b. A significant portion of local acreage that would be suitable for distributed solar is on rooftops of small and medium-sized businesses where **the operating business is not the building owner. These sites are individually too small to host community solar but collectively could contribute in a meaningful way to the deployment of solar.** Could the EMP evaluate the economics of these sites and explore ways to overcome this barrier and make them productive?
- c. Under the current rate structure, a kilowatt hour of residential electricity is about five times more expensive than the equivalent unit of energy from natural gas. Methane's major negative externalities are not included in the cost of natural gas. The dramatic reduction in energy required by very efficient heat pump HVAC and water heating is offset by the much higher unit cost of that energy. **Residential rooftop solar with the current incentive structures is one of the ways households can afford to make the upfront investments required for decarbonization through electrification, especially of heating.** Maintaining annual net metering is crucial to these household budget calculations.

3 Maximize Energy Efficiency and Conservation and Reduce Peak Demand &

4 Reduce Energy Consumption and Emissions from the Building Sector

- a. Apart from vehicle electrification, Maplewood's building sector holds the most opportunities for the combined goals of maximizing energy efficiency and reducing overall energy consumption. Most of our heating systems are steam boilers that account for the largest share of our building energy use. The biggest improvements have come from fuel switching, from oil to gas over the last two decades (significantly aided by market prices), with a small but growing trend to cold-climate heat pumps in recent years.
- b. **We have struggled with encouraging building envelope energy efficiency improvements over the last decade and a half.** The design and construction of our homes is not conducive to many cost-effective building envelope measures. We have had success with envelope sealing, lighting changes, encouraging more efficient appliances, and some behavioral changes but most households still have high heating loads. **The ambitious Home Performance with Energy Star process with high costs and overly optimistic cost-effectiveness projections has discouraged more households than it has helped. So far Comfort Partners and PSE&G's Home Weatherization have failed to make much of a dent in the income-eligible sector.**
- c. A recent pilot program had more success by having an energy efficiency expert connect with a small sample of residents to evaluate their situation and degree of current ambition, formulate achievable plans, identify financial incentive options, and help with decisions about contractors. Residents were encouraged to consider switching to heat pump systems if their boilers were near the end of

their lives or if they were interested in central air conditioning. Rather than seeing reducing energy efficiency as overwhelming, they were guided in the direction of significant steps that were realistically achievable and part of an extended plan.

- d. **Our current impression is that the most cost effective and quickest path to decarbonized homes in our community is a sequence of performing basic cost-effective building envelope efficiency improvements allowing for accurate assessment of efficient heating requirements, followed by installation of a cold-climate heat pump system as the heating system approaches obsolescence (or when central air conditioning is desired).** Our pilot program showed the value of a step-by-step approach, tailored to each household. Measures are implemented at a pace that meets the clients' financial needs and availability of time to manage the work. Programs are needed to provide financial assistance and reduce demands for time and effort that are consistent with each step of this process which could take place over multiple years.
- e. Sizing heat pump systems with consideration of coping with winter days with extreme heating demands, and what potential supplemental systems for those days are likely to look like, are critical questions for the 2024 EMP to answer and provide guidance. In our case, the question comes up, with each household heat pump installation, to what extent existing steam radiators should be preserved as part of the solution for very cold days. **A clearer framework with guidance to contractors is needed for household decisions being made now about what our heating energy systems will look like in the 2040's.**
- f. Private funding of investments in efficiency and lower energy use that lead to broader societal benefits need to recoup the value of those benefits. Early adopters help finance the scaling up of efficiency and decarbonization measures and deserve compensation for their higher cost before economies of scale develop. The success of the solar incentive system with dropping incentives as the industry matured and costs came down could serve as an example.
- g. **The 2024 EMP process could consider the potential for geothermal district/community heating and cooling in urban and dense suburban areas.** Geothermal offers long-term reduced ongoing energy demand and could help reduce peak demand on cold winter days. District heating and cooling potentially reduces the major affordability barrier to electrification for individual households and small businesses. As a fairly novel concept in New Jersey, it will have a long learning curve. Including it in the next EMP could get that process going.

5 Decarbonize and Modernize New Jersey's Energy System

- a. Our local utility distribution system consists largely of decades-old natural gas and water lines buried in our streets, along with electricity and telecommunications wires strung between utility poles among the street trees on one side of every street. **Apart from adequate regional electric grid capacity, the major requirements for a decarbonized electrified energy system are sufficient capacity at all addresses and greater transmission resilience at the level of the local wires.**

- b. A few of our neighborhoods are already near capacity for solar interconnection. Capacity challenges are expected to get worse during peak periods, with more rooftop solar and widespread electrification of heating. **To maintain momentum for the household adoption of efficient electrical heating, grid capacity expansion needs to stay ahead of increased peak demand, not just at the system-wide level but also at the street-by-street level.**
- c. Local electricity transmission resilience has historically been at odds with the maintenance of our tree canopy, itself valuable to us in many ways. While we understand the enormity of the investment required, consideration might be given in the 2024 EMP to the option of starting to bury more of the local transmission wires, including the financial feasibility of scheduling this work in conjunction with major road work such as repaving and safety-motivated maintenance of natural gas lines.

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

- a. Even though on average our household income levels are above New Jersey medians, a significant segment of our community falls into the Moderate-Income category who struggle to pay monthly utility bills and have few available resources for investing in improved efficiency and decarbonization. The EMP process and the NJ Clean Energy Program recognize these challenges. At the local level, identifying and engaging the participation of our low- and moderate-income households has required ongoing effort, yet has been only minimally successful. Privacy issues related to income eligibility and higher barriers from time constraints and understanding of available options require programs, outreach, and ongoing support that recognize these impediments. This is a key area of improvement needed in the 2024 EMP.

7 Expand the Clean Energy Innovation Economy

- a. Most households are unable or reluctant to pay for the upfront costs of transitioning to clean energy. Support beyond standard financial market mechanisms is vital. **Innovative financial instruments such as loan guarantees to lower private borrowing costs, revolving low- or zero-interest loan funds, property-assessed clean energy financing, on-bill repayment, and other mechanisms need to be implemented.**
- b. **There is a clear lack of role models in our community for work in the skilled trades and professions required for energy innovation.** Precursors like high school shop classes have been phased out in favor of basic academic skills and college prep curriculum where our students do well. There is little awareness of, and therefore little interest in, career opportunities in clean energy. **The 2024 EMP can support the diffusion of these skill sets by identifying the high school curriculum changes needed for the success in achieving its clean energy goals.**