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To: Governor Phil Murphy,
Board of Public Utilities

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Re: Sustainable and Resilient Infrastructure
Public Comments on the Energy Master Plan
October 10, 2018

Thank you again for extending this opportunity to comment on the Energy Master Plan.

Solar is a beautiful thing. Back in the late 1970's Amory Lovins, a physicist with, I think, Friends of the Earth, coined the term “Nega-Watt” when he said the least expensive unit of energy is the one you don't need to buy.” Similarly, the second least expensive unit of energy is what an ecological economist might call the “Nega-Fuel-Watt” or the “Nega-Waste-Watt.” Those are unwieldy terms; but that's the power we get from solar and wind. No fuel; no waste from generation. But you know this. That's why we're here.

NJ Transit states that we have 1,001.8 “Rail Network Directional Route Miles.” That probably means 500.9 miles in one direction and 500.9 miles in the other direction. (“NJ Transit Facts at a Glance”, https://www.njtransit.com/pdf/FactsAtaGlance.pdf )

Similarly, the Turnpike is 122 miles long. The Parkway is 172.4 miles long. Other divided highways, like Routes 78, 80, 195, etc. probably add another 100 to 150 miles, or more.

Assuming it’s 500 miles for the railways and adding 395 miles for the Parkway, Turnpike and other divided highways, we have about 895 miles of right-of-way and median. Even if we subtract 10%, we are looking at about 800 linear miles of right of way and median.

This is 800 miles of developed real estate, not pristine habitat, that is owned or controlled by the State of New Jersey and is obviously perfect for solar and little else.

Solar modules are typically 77 inches long and 40 inches wide. That’s 6.4 feet by 3.3 feet. A mile is 5,280 feet long. We could easily mount 820 modules along each of those 800 miles. We could probably do 1640 to 3280 modules per linear mile.

Installing 400 watt capacity modules yields 328 KW of capacity per mile and 262.4 MW of capacity along these 800 linear miles of right of way or median. A system two (2) modules thick would provide 524.8 MW of capacity - greater than the nameplate capacity of the Oyster Creek nuclear station. Four (4) modules thick would be 1.0 GigaWatts on underdeveloped state controlled land.

This is a monetizable asset – the state would be able to use or sell this power, eventually saving the taxpayers money.

About Lawrence Furman
A “Futurist” with an MBA in Sustainable Management, Furman co-founded Popular Logistics, a think tank which explores ecological economics and energy policy in 2007. He ran for General Assembly in LD 12 in 2013. He has been speaking to the BPU and other government agencies in New Jersey on energy policy since 2005.