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NJ Board of Public Utilities
Energy Master Plan
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New Jersey has been impacted by climate change more than many other states. We're seeing disruptions in seasons, worse air pollution including ground level ozone, and more severe storms like Hurricane Sandy. It's more important than ever that New Jersey becomes a leader on clean energy but will never get to 100% renewable energy as long as natural gas is a threat.

Stop Fossil Fuel Infrastructure and Power Plants

There are major pipeline and powerplant proposals in the state right now which will significantly raise GHG's in NJ. These powerplants can add 5 million metric tons of CO2 into our air. In order to reduce our CO2 and GHG emissions and get to 100% renewable energy by 2050, Governor Murphy must put in a moratorium on all new fossil fuel infrastructure. Second, Murphy needs to put in a moratorium on new powerplants.

BPU itself has the authority to regulate GHG's and their infrastructure and stop new fossil fuel powerplants. The Energy Master Plan should be calling on the DEP to use their authority to regulate CO2 and GHG emissions. Since 2005, the DEP has had the authority to regulate greenhouse gases and carbon under the New Jersey Air Pollution Control Act and through Title V permits. The Department's determination is based on compelling scientific evidence of existing and projected adverse impacts due to climate change on the environment, ecosystems, wildlife, human health, and enjoyment of property in the State. This will allow us to go after existing permitting facilities to force them to reduce CO2 as well as blocking other proposed facilities. We can't get to 100% renewable unless we scale down our greenhouse gas emissions until we reach zero.

Legislative Fix to Nuclear Subsidy Law

Governor Murphy must make a legislative fix to the nuclear subsidy law. New Jersey will not be able to achieve our 100% renewable energy goals if consumers are required to buy 40% and if there is a cost cap on renewable energy. BPU need to move forward with changing laws and implementing regulations and standards to make clean energy a reality in New Jersey.

Clean and Renewable Power

The most important thing that the BPU must do in the new Energy Master Plan is to make sure the definition of clean energy is renewable energy. This definition should not include natural gas, incinerators, nuclear power, or certain types of biomass fuel. Clean energy should be only current Class 1 Renewables plus small hydro-projects, which is currently Class II. Class 1 Renewable Energy is only for

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sources of energy that reduce carbon or are carbon-neutral in emission and many biomass fuels don't fit in this category.

In order to get to reach our 100% renewable energy goal, we must move away from fossil fuels. First, we need Governor Murphy to put a moratorium on all dirty fossil fuel infrastructure. This includes proposed pipelines such as PennEast and those proposed to go through the Pinelands, as well as gas-fired power plants like the one proposed for the Meadowlands. In 2017, New Jersey generated 51% of its electricity from plants that burn coal, oil, or fracked gas. All of these plants must be phased out, and this plan must address how that will be done. The two remaining coal-fired power plants in New Jersey are the most carbon intense of sources and are also among the most expensive.

The EMP should require all new generation capacity to be renewable and carbon-free. The DEP should promulgate rules that establish carbon pollution limits for all existing fossil-fueled power plants. These limits must be incorporated into renewals of Title V operating permits. The limits should decline over time and reach zero no later than 2050.

The BPU must move forward quickly with the solicitation for our first 1100 MW of offshore wind before the end of 2018. They then must adopt rules for financial mechanisms to implement these projects. These include defined criteria for approving projects that use a net-benefit analysis which includes health, climate and environmental impacts.

New Jersey must also move quickly to prevent a crash in our solar Renewable Energy Credit market which could happen a year from now. We can fix this by developing a new, more cost-effective solar program similar to ones that are working in other states such as Massachusetts. The cost-cap on renewable energy sources must be removed or else we could be blocked from reaching our RPS target in 2020.

We can also expand our community solar program, which is important for our environment and economy because it allows any ratepayer to subscribe to an off-site solar installation. We ideally want at least 20% set aside for community solar in New Jersey and for the state to remove the size cap it has for these community projects to allow for larger projects that can extend to whole neighborhoods and even towns.

We should be targeting renewable energy and green jobs to environmental justice and low-income communities. This is because they need it the most. People in the suburbs are putting their own solar panels on their homes. We need to use these funds to help urban communities by putting panels on brownfields and rooftops. There are five times as many jobs in the solar sector than there is in the coal industry. These are people who will continue to be disproportionately affected by climate change and therefore should directly benefit from investments in clean energy.

Reducing Energy Consumption

Reducing energy consumption is the one of the most cost effective and best way to reduce pollution and greenhouse gases. BPU need to help weatherize people's homes by air sealing, improving ventilation, or

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adding insulation. For every dollar invested by a homeowner they save $4 and for every dollar invested by a business they save $16. These important standards could save consumers $11 billion dollars and prevent 25 million metric tonnes of climate pollution. Energy efficiency also reduces peak power needs and therefore saves people money because it could double and triple normal power.

New Jersey needs to be building smarter and greener if we want to reduce our energy consumption. There are only LEED certifications for buildings, New Jersey should extend a certification program for residential units too. Our buildings, schools, homes, and neighborhoods should be at the platinum level for LEED certification. BPU must also mandate all buildings, their appliances, lighting, and equipment to be Energy Star Certified at the Zero Energy Ready Home Tier 3 level. New Jersey should also have an International Green Construction Code (IgCC) for new and retrofitting existing commercial buildings. These green certifications will help reduce energy usage and carbon footprints.

We should be incorporating green roofs to help insulate buildings and save energy. Green buildings provide cost savings through efficient energy usage for heating and cooling of the buildings. These roofs also help with flooding by controlling stormwater. In our cities especially during the summer time, "heat island" effect causes temperatures to spike making temperatures outside unhealthy for people and requiring more energy to cool buildings. Having green and blue roofs would help limit this effect and keep cities cooler, as well as saving money on heating and air conditioning.

New Jersey's utility economic model is based on how much power they sell, this is unsustainable and will only lead to more waste and pollution. If the BPU want to reduce our energy consumption and save money doing, they need to reverse New Jersey's utility model just like New York is trying to do. We need to change the way we do business with utilities. BPU must also adopt an Energy Efficiency Resource Standard (EERS) that establishes annual enforceable benchmarks above 2% weather impacts of reduction in energy use with clear performance incentives and penalties for failing to meet the benchmarks**.**

The EMP must implement offshore wind, solar power, geothermal, and energy efficiency projects. We can promote new technologies such as fuel cells, wave technology, smart-metering, microgrids, green building codes, battery storage, and energy storage. Micro-grids can provide efficient clean energy and local resiliency and stability for New Jersey. BPU should link micro-grids to renewable energy. Distributive generation and battery storage could lead to further reductions and make current systems obsolete. We should be using dc current for long distances, upgrade our electrical substation, and better insulate our wires to reduce losing electricity.

Clean and Reliable Transportation

New Jersey's biggest source of air pollution is from cars and trucks, but our state has been gridlocked when it comes to moving forward with electric vehicles. EV's are much cheaper to operate than gas vehicles and reduce air pollution from traffic and emissions from refineries and drilling oil. Implementing a successful electric vehicle charging system in New Jersey will mean less money sent out of state for petroleum, more in-state jobs , less carbon pollution, and cleaner, healthier air.

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People like EV technology that is becoming cheaper and greener however; there is 'range anxiety.' This is why we need a network of charging stations statewide to make people more comfortable with buying and using these electric vehicles. EV's maintenance costs are much lower compared to gas engine cars because they don't require parts like mufflers. It is 70% cheaper to operate an EV than a car using gas. We want people to feel confident that they can purchase and EV, save money, and travel through New Jersey with it.

Utilities should not install charging stations where the markets can serve them. Instead, they need to be installed in under-served areas where the market won't initially reach. BPU must implement programs to install plug-in stations along with providing things like zip cars, ride shares, and taxis to encourage EV's that everyone can afford.

We need to make sure that charging networks incentives are targeted to communities that have received a disproportionate share of pollution, especially minority and low-income communities. BPU must offer opportunities for people to buy EVs of all communities, including those of modest means through rebates or 'cash for clunkers' programs.

We can electrify our ports, especially in urban areas, with electric busses to reduce air pollution in areas already highly affected. We can use electric vehicles for commuter and school transportation in and around the ports including moving goods and containers. New Jersey can start using electric and hybrid garbage trucks too. BPU can also incentivize both renewable energy and EV's by installing solar panels on parking decks. We can use cars and buses as battery storage and charge cars at night to avoid putting pressure on the grid

BPU must implement clean transportation programs so that our school children can ride in cleaner, quieter, and healthier school buses that are powered by electricity. This is especially important for children who live in urban areas already overburdened by air pollution. Busses will benefit all mass transit riders, as well as anyone living in the city where they run without releasing air toxins.

The BPU and the DEP need to work together if we want to reach New Jersey's goal of 330,000 EVs on the road by 2025. New Jersey accepted $72 million settlement from the Volkswagen Mitigation Trust. Murphy needs to maximize the amount of VW settlement funds dedicated to building our EV infrastructure so that New Jersey can create a network of charging stations and guarantee the right-to charge.

Building A Modern Grid

Modernizing New Jersey's grid should include making the grid more reliable, flexible, efficient, and sustainable. Part of this includes overhauling the utility model as a whole. As we move towards a future of renewable energy, strengthening our power and energy grid is going to become necessary. We must be able to not only create energy with solar and wind power, but store and distribute it as well. We must also consider the increasing storm effects because of climate change, and how we're strengthening our grid against those effects. Having a stronger energy grid will allow us to better adapt

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to the effects of climate change and provide an easier transition on our way to 100% renewable energy by 2050.

There are different ways we can work to modernize New Jersey's grid. One way to do this is by investing in smart meters and smart thermostats. These can help encourage people to use energy during off-peak times, resulting in less stress on the grid during peak hours. Another method to modernize the grid is by using net metering. Net metering allows electricity customers who generate their own electricity from renewable energy to bank their excess electricity in the form of kilowatt hour credits. We can improve net metering in New Jersey by increasing the capacity threshold.

We also must work to make the grid more responsive. One way to do this is through battery storage. Battery storage will allow the grid to be more responsive to brownouts and blackouts without having to increase power, especially from dirty sources like gas power plants. We also need to consider updated technology such as direct currents for long-distance generation, DC lines instead of AC lines, and distributive generation, which allows energy to travel both ways along the grid. Tying distributive generation to renewable energy is even better for our environment and health.

Micro-grids can provide efficient clean energy and local resiliency and stability for New Jersey. BPU should link micro-grids to renewable energy. They are important because these grids help guard against blackouts and make us more resilient. More importantly, they're tied to distributive generation such as solar, wind, and combined heat and power to help reduce air pollution. Microgrid efforts are being proposed to prevent power outages like the ones experiences after Hurricane Sandy. This could mean that facilities powered by microgrids can help provide shelter during natural disasters.

Power lines are another problem for our grid and we need to make them more affordable and efficient. Better insulation and more efficient substations will reduce the amount of power lost through these lines during transport. Utilities should also consider building their lines underground. During storm events, downed trees can take out lines completely. This can't happen if the line is secured below ground. However, many utilities don't want to do this because it won't make them as much money as building them above-ground. We need to look at new technology to replace these large and dangerous powerlines that lead to more money for energy companies and more pollution for the people of New Jersey.

We need our utilities to undertake major updates including replacing older and vulnerable lines and putting lines underground to prevent blackouts in the first place. Some of these lines fall down every year. Every time a line goes down, the companies make more money fixing the line rather than redoing it underground where it would be safer. They get a 12-14% return and can charge overtime. They won't make this kind of money if the lines are underground. Their bondholders should be paying for these improvements, not the ratepayers. The Hudson Transmission Partners transmission line between New Jersey and New York City has not only proven to be a bad investment but has actually cost hundreds of millions of dollars in additional costs. The proposed line from Salem to Maryland would undermine renewable energy and cause more problems for the grid while costing taxpayers more money.

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We should also be targeting renewable energy and green jobs to environmental justice and low-income communities because they need it the most. We must help urban communities by putting panels on brownfields and rooftops and creating opportunities for them to use electric vehicles that plug into the grid. If we strengthen New Jersey's grid we can make the transition from fossil fuels to renewable energy easier and quicker. We can provide clean energy for people from all walks of life and all areas of the state. We can also help protect ourselves from future storm events.

Sustainable and Resilient Infrastructure

We will never get to 100% renewable energy as long as natural gas is a threat. We need Governor Murphy to put in a moratorium blocking all natural and gas power plants. There are 5 new proposed natural gas power plants like the one in the Meadowlands. These powerplants in New Jersey will emit over 5 million metric tons of greenhouses gases into our air. There are also 7 natural gas projects like PennEast underway that could destroy sensitive ecosystems harming wildlife and public safety. Replacing dangerous old gas mains and laterals in people's home makes sense but not new pipeline distribution systems.

New Jersey can regulate greenhouse gases under the Air Pollution Control Law which can block new power plants and force current power plants to clean up. The DEP has the authority to regulate greenhouse gases and carbon and deny air permitting and Title V permits.
The Department's determination is based on compelling scientific evidence of existing and projected adverse impacts due to climate change on the environment, ecosystems, wildlife, human health, and enjoyment of property in the State. The BPU also has the authority to regulate GHG's and deny projects that increase GHG's. We can't get to 100% renewable unless we scale down our greenhouse gas emissions until we reach zero.

In order to get to 100% renewable, we need to have a smarter grid. BPU must implement programs for energy efficient technology for distributive generation using microgrids. Microgrids especially help protect us against blackouts. We also need to make updates to the grid so the next time a storm comes, we can use stored energy to prevent power outages. We need to be able to store renewable energy at all times, like at night or when the wind isn't blowing. Energy storage is critical to move renewable energy forward and prevent blackouts and brownouts

We cannot be putting infrastructure in areas that flood. We believe mechanisms to reduce flooding like green roofs, blue roofs, and wet gardens are good, but we also need buyouts to put people out of harm's way. Buyouts protect areas during a storm because they offer flood storage and help protect surrounding properties. With storms getting worse, it is critical that the Murphy Administration reverse Christie's rollbacks to prevent future flooding near our coast and put in place stronger protections. They need get rid of weakened versions of important water rules like the Flood Hazard Rules, Water Quality Management and Planning Rules, CAFRA, Wetlands, and Stormwater Management Rules.

BPU must move forward on programs that would help people receive funding for resiliency projects like PACE. PACE puts in place a funding mechanism to allow homeowners to finance projects such as solar

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and renewable energy, stormwater and to make their homes more flood resistant. This allows people to use green building techniques, energy efficiency, and cleaning up stormwater, and it makes our communities more resilient and sustainable. This allows homeowners to get low cost loans and repay them with a small assessment on their property

BPU needs to put in place the programs and the funding mechanisms to update and fix our water system infrastructure. We have incidents of contaminated drinking water across the state, especially in places like Newark, Paterson, and Camden. This is at least a $8 billion problem that needs to be fixed immediately to keep the lead out of our schools. Whether it's old pipes leaking out water or contaminates like lead threatening our children, it's time for real action to protect our drinking water supply and infrastructure. BPU must update filtration systems and buy land to protect water sources. Most importantly, we need to come up with long-term plans that include long-term funding sources.

New Jersey must require that we update outdated sewer systems and fix stormwater utilities. Our combined sewer overflow problem because is a health hazard, especially when concerned with sea level rise. You would think that when it rains our water would be cleaner but instead it becomes dirtier. Only 5% of streams in New Jersey meet standards for being fishable, swimable, and drinkable, mostly because of non-point solution. 65% of our streams are impacted by phosphorus. Dilapidated storm water systems exacerbate the problem by increasing the water in combined sewers and we need funding to reduce the amount of water in sewers during major storm events. We need at least $13 billion just to fix our combined sewer overflow systems, but overall, we need more than $45 billion to fix our water and sewage infrastructure.

Building a more sustainable and resilient infrastructure will not only help reduce our greenhouse gases but improve our economy in doing so. New Jersey can improve pollution prevention, reduce greenhouse gas emissions, and be resilient to climate change and sea level rise if the BPU starts now. New Jersey must be prepared for the next big storm because they are happening more frequently and in higher frequency. The BPU must move forward with renewable energy and block dirty fossil fuels from continuing to infiltrate our state.

Closing Comments

We can be a leader nationally in clean energy and clean energy jobs if we aggressively move forward with renewable energy such as solar, wind, and geothermal and reduce natural gas. In order to get to 100% renewable by 2050, we need to stop fossil fuel infrastructure and new powerplants. With the Trump Administration's hostility to climate action and embrace of fossil fuels, it's more important than ever that BPU starts to plan now. But, no matter how good the plan is, without implementation it's only a hallucination.