New Jersey 2019 Energy Master Plan (EMP)
Clean and Reliable Transportation Stakeholder Meeting
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Summary of Testimony
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Thank you for this opportunity to submit testimony on Clean and Reliable Transportation element of New Jersey's 2019 Energy Master Plan.

Gladstein, Neandross & Associates is one of the nation's leading consultancies on clean, alternative fuel and electric transportation technologies. Our clients are primarily operators of heavy-duty vehicles and equipment, including trucks, buses, ocean-going vessels, locomotives, and equipment used in cargo handling, construction, mining and exploration/production. We operate all over North America, with offices and personnel in California, Arizona, Texas, Louisiana, New Jersey and New York. Below is a summary of my written testimony.

New Jersey has undertaken the development of a new Energy Master Plan that focuses on:

1. Putting New Jersey on a path to achieve 100 percent clean energy by 2050
2. Growing New Jersey's clean energy economy
3. Ensuring reliability and affordability for all customers
4. Reducing the state's carbon footprint
5. Advancing new technologies for all New Jersey residents

In addition to these general objectives, the transportation element of the revised EMP is to explore how to optimize the use of clean transportation technologies in freight movement, promote clean transportation solutions that minimize adverse impacts on the movement of goods and maximize opportunities for economic growth, and how to ensure that disproportionately impacted communities receive both the opportunities and benefits connected through the expansion of low and zero emission vehicles.

It is with this last objective in mind that it is important to remember that clean energy does not just mean reducing greenhouse gases (GHGs). Although it is critically important to reduce emissions of GHGs from all sectors of New Jersey's energy economy, it is essential to also stay focused on reducing emissions of the pollutants and toxic air contaminates that currently negatively impact the health and well being on New Jersey's residents.

Although carbon dioxide and other greenhouse gases are slowly and inexorably changing the planet's climate, these pollutants do not have the immediate impact of causing asthma, lung and heart disease, cancer and other terrible human maladies that adversely burden tens of thousands of New Jersey residents right now, particularly in low-income neighborhoods and communities of color adjacent to ports, distribution facilities and major roadways that are disproportionately affected by environmental insults.

To maximize immediate benefit, particularly to New Jersey breathers, the transportation elements of the revised EMP should emphasize the immediate and rapid transition of the heavy-duty vehicle sector

to cleaner technology. Although light duty vehicles are the source of the plurality of the state's GHG emissions (~34.5% of the 2015 inventory), the state's 4 million automobiles produce as much smog-forming NOx as the state's 52,000 heavy-duty trucks, and virtually none of the deadly diesel particulates that are among the most dangerous contaminants in the state's atmosphere. This requires that state policy makers focus on promoting transportation technologies that quickly transition the transit and goods movement sectors away from diesel to cleaner, non-petroleum-based technologies.

Eventually, there will be many battery electric and fuel cell options to replace the heavy-duty vehicles that are the backbone of commerce in New Jersey today. However, these options are only available at very low-scale production volumes and in specific applications and therefore are unlikely to be competitive at scale with existing trucks until the end of the next decade. Thus, at this moment in time electric trucks have a limited, but important, role to play in New Jersey's transition to a cleaner goods movement future.

Near zero emission natural gas engines are available today, and are replacing dirty diesel trucks and buses all over the country. Trucks equipped with these existing natural gas engines can deliver lower-than-electric NOx emissions, virtually eliminate toxic diesel exhaust and, when fueled by readily available renewable natural gas, can deliver greenhouse gas emissions at levels that will meet New Jersey's carbon reduction goals.

New near-zero emission medium- and heavy-duty engines fueled by natural gas are certified by the EPA and the California Air Resources Board (CARB) to emit 90% less smog-forming gases than the current emission standard. They are so clean that they emit less NOx at the tailpipe than an electric truck of comparable size would charged by today's New Jersey electrical grid, if that truck was commercially available. But these near zero emission NGVs are available today, and can deliver immediate emission reduction benefits to New Jersey residents.

To facilitate the benefits that can be delivered by near zero emission NGVs, New Jersey should include in the revised EMP a commitment to develop and implement a California-style Low Carbon Fuel Standard (LCFS). The LCFS would help New Jersey accomplish several key goals. First, it provides a market-based program to reduce the carbon content of transportation fuels. Second, it is fuel neutral, and thus would encourage the development of all low-to-zero carbon fuels, including renewable electricity, non-fossil hydrogen and renewable natural gas. Third, structured appropriately, it will enable New Jersey to participate in low carbon fuel markets in California, Oregon, Quebec and other progressive jurisdictions, which will help provide the resources for New Jersey developers to produce RNG and to New Jersey fleets to adopt the clean technology. Fourth, it will encourage the development of renewable resources in the state, including the sustainable and beneficial recovery, reuse, and recycling of organic waste, which will not only help reduce emissions of GHGs and criteria pollutants, but also mitigate the state's solid waste disposal challenges while encouraging economic development.

For the heavy-duty sector, near zero emission, heavy-duty NGVs represents the most efficient, cost-effective, and immediate pathway to meet the EMP's clean transportation goals. This technology, and this technology alone, presents the state with the ability to virtually eliminate the public health risks of port drayage and other heavy-duty goods movement technologies by dramatically reducing NOx emissions, eliminating diesel particulates and, when fueled by RNG, bring GHG emissions down to levels called for in the EMP.

I urge the BPU to include in the EMP policies, programs and strategies to immediately promote the use of near zero emission, heavy-duty NGVs.