

From: kirkafrost@yahoo.com
To: [Secretary, BPUBoard \[BPU\]](#)
Subject: [EXTERNAL] Docket No. Q021060946 - Medium and Heavy Duty Electric Vehicle Charging Ecosystem - KFCComment
Date: Tuesday, January 24, 2023 5:01:08 PM

Dear NJ BPU Commissioners

President Joseph L. Fiordaliso, Mary-Anna Holden, Dianne Solomon, Bob Gordon, Dr. Zenon Christodoulou;

The current straw proposal for medium and heavy duty electric vehicle charging ecosystem follows the model of fossil fuel energy power infrastructure. This includes:

- **Massive energy fuel source installations**
For New Jersey, this is currently mostly natural gas wells and to much lesser degree, limited nuclear fuel sources.
- **Massive fuel infrastructure transmission and distribution**
Mostly in the form of pipelines, with limited trucking and train transit.
- **Massive power plants to produce electricity**
Currently in New Jersey, natural gas power plants are the predominate form of power plants. New Jersey is also going through a natural gas power plant expansion where new plants are added both by companies and energy care increasing throughout New Jersey, which is contrary to the goal of getting off of fossil fuels such as natural gas. Power plants include large solar arrays that are mounted on the ground (eliminating any other use of the land area) and also nuclear power plants (which have issues associated with where does the waste go along with other safety complications). A more recent unrealized power plant is to build massive offshore wind plants, which will definitely generate large amounts of energy.
- **Massive grid distribution from power plants**
As detailed in this straw proposal, it is recognized that the grid must be built out in order to support utilities providing the energy necessary for charging stations at businesses and public charging centers. Question, what is the costs required to upgrade and build the grid energy infrastructure to enable charging at 10% of the desired end points or even 75% of the desired end points?

There is another approach that has higher costs as the end units, but minimal costs at the electric grid infrastructure and no increases at the current fuel source and distribution (natural gas and nuclear) infrastructure to power plants (natural gas and nuclear). In fact, it will directly decrease demand and consumption of nuclear and natural gas within New Jersey.

The alternative approach is to subsidize installation of hydrogen electric storage in several phases over ten years. This immediately enables electric charging capacity at the end location (especially for business and gas stations) while enabling the electric storage at the local end point.

Benefits for why to use hydrogen electric storage at end points:

1. Enables each installed unit to become an integrated storage component of each local grid
 - a. Can provide peak load offsets to the local grid
 - b. Enables increased independent resilience of each local grid
 - c. When built out, can actually enable backup power during local grid outages
2. Directly reduces fossil fuel demand and consumption
 - a. Reduces electric demand on local grid, which currently is powered mostly by fossil fuels
 - b. Enables homes, businesses and apartment complexes to switch to building

electrification for heat, water heat, cooking and cooling. This enables a roadmap for eliminating all fossil fuel end use consumption.

- c. Reduces the potential add of electric load to the grid when electrifying buildings, thereby reducing the need to rebuild or substantially increase grid capacity.
3. Can be used for BEV vehicle recharging **and** FCEV vehicle refueling
4. Holds more electric storage than a Tesla Power Wall (14kilowatt hours). Current storage options are scalable from 44kilowatt hours (house) up to 10 megawatt hours and can be increased through scalable additions.
5. Directly reduces the current proposed massive infrastructure plans to increase electric distribution (hundreds of billions of dollars – some in the current infrastructure bill)
 - a. Reduces the need to radically rebuild grids across New Jersey to support larger capacities of electricity, storage and extreme peak load fortification capabilities (as currently proposed).
 - b. Reduces the need to build out massive renewable electric arrays in centralized areas to feed the New Jersey electric grid (massive windmills, thousands of acres of land solar arrays, high heat intensity solar arrays using mirrors that consume thousands of acres on land and water).
6. Enables a rapid transition at the 'End Use' (homes, businesses and apartment complexes) rather than trying to curb growth of fossil fuel industries.
7. Durability of H2 electric storage outlasts battery storage and not as vulnerable to temperature changes. H2 electric storage lasts up to years whereas battery is in terms of days and months.
 - a. No infrastructure required for hydrogen fuel since it can be made at all electric end points in New Jersey.
 - b. No hydrogen leaking that many officials speak of since there are no hydrogen pipelines in this solution.

There are currently four companies offering hydrogen end point solutions that are completely turnkey and integrated with solar and wind (small 2kilowatt wind turbines that are low cost and effective).

- ElektrikGreen elektrikgreen.com – focuses on homes and small businesses.
- GKN Hydrogen www.gknhydrogen.com – scalable from homes to large businesses.
- Plasma Kinetics plasmakinetics.com – scalable but focused on very large industry applications.
- Cascadia Energy Technologies, LLC cascadiaenergytech.com

This approach can be done in a manner so that the utilities have a shared control of the electric storage.

We do not have to generate energy in large massive fossil fuel model anymore. With hydrogen, New Jersey can start integrating it now.

Sincerely,
Kirk frost