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Energy Plan Comments
NYSERDA
17 Columbia Circle
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American Wind Power & Hydrogen LLC (AWP&H) submits these comments to address two of the Briefing Issues identified in the Draft Scope of 2009 New York State Energy Plan -- "Meeting Transportation Needs and Alternative Transportation Options" and "Climate Change" and to discuss the role of **hydrogen-fueled sedans and light duty vehicles** in addressing current changing climate initiatives..

The National Hydrogen Association (NHA) has analyzed existing information on all types of vehicles which are being developed and promoted as solving the global warming problem and reducing the consumption of petroleum products. Based on this analysis, the NHA is preparing a report to be presented to "governmental leaders".

This analysis, which has been circulated in draft form to AWP&H as an NHA Board member, shows that using hydrogen as a vehicle fuel is the most effective means of achieving the desire goals of minimizing the use of petroleum products and reducing greenhouse gas emissions. Other vehicles such as the hybrid-gasoline fueled vehicle, show some limited early impact on greenhouse gas emissions and petroleum consumption but do not match the benefits realized from the use of hydrogen.

The New York State Energy Research and Development Authority (NYSERDA) has prepared a Hydrogen Road Map describing a series of steps which will lead to increased use of hydrogen in New York. The introduction of hydrogen-fueled vehicles has grown substantially following the release of the Hydrogen Road Map. Among developments following the release of the Road Map are the following:

- (1) In 2004, New York funded two hydrogen-fueled projects, one in Albany and a second one in Buffalo. The Albany project involved two Honda fuel cell vehicles, while the Buffalo project involves two Toyota Prius vehicles which have been converted to use hydrogen in their standard combustion engine.

● (2) In 2007, New York funded a number of hydrogen projects, most of which involve vehicles converted to use hydrogen in conventional internal combustion engines. These projects include:

- the Albany Airport
- Hempstead
- White Plains
- Rochester

The Albany Airport project was originally proposed to include a number of hydrogen-fueled light duty vehicles and two hydrogen-fueled transit buses for CDTA. Funding was not obtained for the buses. The project was reduced to two hydrogen-fueled Prius sedans to be used by CDTA route supervisors and two hydrogen-fueled Silverado pickup trucks to be used by the Airport personnel for general maintenance services and a fueling station and source of hydrogen.

Beginning in 2008, General Motors is producing 100 Equinox hydrogen-fueled fuel cell vehicles, 30 of which are being placed with residents in the Westchester County area under the GM Project Driveway initiative. Shell Hydrogen built a fueling station in Westchester County to fuel these vehicles. In addition, in cooperation with the NYC DOT, Shell is installing hydrogen fueling stations in the Bronx and at JFK Airport.

These fueling stations plus the fueling station at Hempstead and West Babylon, funded by NYSERDA will create a seventy mile hydrogen highway from Westchester to West Babylon. The projects will result in about 20 hydrogen-fueled internal combustion engine vehicles, Prius and Escape SUVs, being operated at various fueling stations. Again, there will also be the 30 GM Westchester County fuel cell vehicles in service.

Honda has announced they will produce 200 Clarity sedans which are hydrogen-fueled fuel cell vehicles. Mercedes will be producing a second generation hydrogen-fueled vehicle in 2009. AWP&H has spoken to both companies about supplying vehicles for New York projects.

The availability of hydrogen-fueled vehicles in New York is growing significantly. Similarly, the existence of fueling stations for these vehicles is increasing. The public's awareness of these vehicles, therefore, is likely to grow as well over the next two to three years.

A hydrogen-fueled vehicle's tail pipe emits only water vapor. The hydrogen-fueled Prius vehicles, for example, meet California's requirements as super ultra low emission vehicles. When hydrogen is produced from renewable resources, a completely carbon free system results and no petroleum products are consumed. Fuel cell vehicles are usually 2.5 times more efficient than gasoline fueled vehicles in converting energy to the

power needed to drive the vehicle

Eliminating tail pipe emissions and the high energy efficiency of hydrogen-fueled vehicles probably represents one of the most effective uses of the State's funds for the achievement of the energy and environmental goals set forth by Governor Paterson.

AWP&H will be please to supply more details to the Committee in the later stages of the development of the State's Energy Plan.

Raymond J. Kenard
President
American Wind Power & Hydrogen

A handwritten signature in blue ink, appearing to read "Raymond J. Kenard", written over the printed name.