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City of Newark, Delaware, First in Nation to License Electric Cars to Provide Power

Newark, DE (**January 12, 2009**) – On Friday, January 9, 2009, the City of Newark became the first electric utility in the United States to approve the use of an electric vehicle to store and provide power for the local electric grid.

The vehicle, which runs on electricity alone, is specifically designed to store energy and improve grid reliability. University of Delaware researchers helped develop the concept, called Vehicle-to-Grid (V2G), by working with a consortium of industry partners over the past decade to establish the communications protocol between the vehicle and the grid operator. Industrial partners in the consortium include Delmarva Power and its parent company Pepco Holdings Inc; PJM, the regional grid operator; California-based electric vehicle manufacturer AC Propulsion; and others.

With the City of Newark's approval, the UD team is now conducting V2G testing at two outlets within the City's service territory.

Associate Professor of Marine Policy Willett Kempton explained how the technology benefits the grid operator. Currently, there is no energy storage built into the electric grid system, meaning that electricity usage and electricity generation must be simultaneous. As fluctuating, non-dispatchable renewable sources, such as solar and wind power, become a larger fraction of our electric generation, energy storage will help grid operators smooth power output fluctuations.

"Wind tends to blow stronger at night when the electric load is low," he said. "If electric vehicles charged at night with wind power, the grid operator could use the energy in the batteries, when vehicles aren't needed for driving and are plugged in, to help maintain grid reliability. The vehicle owner would then be paid for providing these energy services at a greater value than what they paid for the electricity."

The City of Newark's approval process for V2G electric vehicles is similar to the process used to certify solar photovoltaic (PV) systems on residential rooftops. In both cases, the City is responsible for ensuring

that the energy source will not feed power back to the grid when the power lines are down. This requirement is critical to maintaining the safety of line workers during a power outage. UD and Delmarva Power and Light conducted initial testing of this safety requirement before the vehicle was thoroughly tested to IEEE standards at the National Renewable Energy Laboratory in Golden, Colo.

Sam Sneeringer, the City's Assistant Electric Director, describes the reasoning behind the certification process by saying, "Solar PV systems and V2G vehicles are tested to the same standards and treated the same within the city's approval process because electricity from the car's batteries or from a solar panel is indistinguishable to the electric grid and presents the same potential safety risks to linemen."

Willett Kempton and his team of researchers plan on having a fleet of six vehicles by the end of 2009, two at UD and four operated by the state of Delaware. The test fleet will be used to demonstrate multiple V2G vehicles working together and supplying energy as a single power plant. The City of Newark's approval paves the way for larger-scale adoption of V2G electric vehicles nationwide, helping to advance our electric grid infrastructure and reduce our consumption of oil.

To learn more about the city of Newark's Electric Department, visit www.cityofnewarkde.us/index.asp?NID=18. For more about UD's College of Marine and Earth Studies, visit www.ocean.udel.edu.

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