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GridShift's Electrolysis Breakthrough Sets New Record for Affordable Hydrogen Generation

Marietta, GA – May 18, 2010 – GridShift Incorporated, a Khosla Ventures “Green Portfolio” company, today announced that it has developed a groundbreaking new water electrolysis technique that can produce hydrogen at a cost of \$2.51 per kilogram. This breakthrough technology is half the cost of current hydrogen production and effectively makes hydrogen a more affordable alternative than gasoline at an equivalent cost of \$2.70 per gallon of gasoline.

Over 90 percent of today's hydrogen comes from steam-reformed natural gas, which produces large amounts of carbon dioxide along with the hydrogen. Hydrogen made by current electrolysis methods is low-rate and typically uses platinum catalyzed electrodes that are prohibitively expensive. GridShift's new water electrolysis technique uses no precious metals as catalysts and when coupled with a solar array or wind turbine, it has a zero carbon-footprint.

GridShift's uses a new catalyst comprised of readily available nano-particles, reducing catalyst costs by up to 97 percent. Platinum is the most often used catalyst for electrolysis based hydrogen generation, but at a cost of over \$1700 an ounce, it becomes prohibitive at scale. This newly developed catalyst costs just \$58 an ounce.

Overall, GridShift's new method for hydrogen generation produces four times more hydrogen per electrode surface area than what is currently reported for commercial units today. This means that an electrolysis unit using the GridShift method would produce at least four times more fuel in the same sized machine, or require a unit four times smaller than normal to make the same amount of hydrogen. GridShift's new electrolysis method finally breaks down the barriers that have kept a truly green hydrogen highway from extending across the country.

Aside from hydrogen at a fueling station, GridShift's smaller, more cost effective hydrogen-producing method allows for a wide range of industrial and vehicle applications. These applications include ammonia production, hydrogenation of lighter hydrocarbons, home fuel sources for fuel cell vehicles, load-leveling applications with wind & solar installation, efficiency improvement of ICE and more. The GridShift electrolyzer is also well suited as a drop-in replacement for machines using more expensive and less efficient electrolysis units.

“Hydrogen is a critical piece of America's future renewable energy policy,” said Robert Dopp, CEO of GridShift, Inc. “Our new water electrolysis process generates carbon neutral hydrogen that is cheaper than gasoline at a fraction of the cost and size of currently available water electrolysis hydrogen generators. We are now on the path to a truly viable hydrogen fueled future.”

The key to GridShift's process is a new method for coating a complex three-dimensionally shaped electrode on all surfaces with a unique combination of nano catalysts that expose the catalysts to the electrolyte for efficient water electrolysis reactions and is robust enough to withstand the rigors of electrolysis. The result is an electrolyzer running as a full cell at 1000 milliamp per cm² at 80% energy efficiency. GridShift is on track to reach their goal of 85% energy efficiency, which is 47 kWh/kgH₂ or \$2.35 per kg of H₂. Technical details of the development, procedure and the discovery are available in a whitepaper published at www.grid-shift.com/white_papers.

Future research for GridShift's electrolyzer includes the development of an alkaline fuel cell based on the same design. Ultimately, the electrolyzer and alkaline fuel cell will be married into a high efficiency hydrogen flow-cell. More details will be released in future whitepapers out of GridShift's high-energy research laboratory.

About GridShift

GridShift Incorporated, funded by Khosla Ventures of Menlo Park, CA, was founded in 2008 to develop a high rate and high efficiency alkaline water electrolysis apparatus for hydrogen generation from water. The company has met all planned milestones and is now seeking strategic partnerships to grow the technology. Future projects include an alkaline fuel cell and flow cell utilizing the base technology reported on in the company's latest whitepaper.

About Robert Dopp, CEO of GridShift

Mr. Dopp is a leading expert in the field of water electrolysis, alkaline fuel cells, zinc-air fuel cells and air electrode technologies. During his 18-year career as an engineer at Rayovac Corporation, he was a principal developer of the zinc-air hearing aid battery. Previously, he served as the Director of Research for Electric Fuel Corporation. Since 2002, his laboratory has served clients including major manufacturers and National Laboratories. Mr. Dopp has 37 issued patents and 18 pending patents, and has been a guest lecturer on university campuses and at technical associations including the National Hydrogen Association and Sandia National Laboratories.