



## Power+Energy™

Fueling the Hydrogen Economy

### **Power+Energy, Inc. Ships Third Bulk Hydrogen Purifier System**

*Key Japan LED Producer To Install Second System For Capacity Expansion*

For Immediate Release

IVYLAND, Pa./EWorldWire/Jan. 10, 2006 --- Power+Energy, Inc. (P+E) has recently shipped another bulk hydrogen purification system. The bulk purifier was shipped to an existing customer producing LEDs located in Japan. This system is an innovative, modular system with a nominal capacity of 1300 liters per minute (78 cubic meters per hour). The system will be installed in the first quarter of 2006.

Introduced in July 2003, the PE9000 Series system provides customers with a highly reliable supply of Ultra-Pure Hydrogen (UPH) containing less than one part per billion total impurities. This UPH hydrogen is typically used in the manufacture of advanced semiconductor devices such as light emitting diodes (LED's), laser diodes and silicon carbide semiconductors. The system can be configured to supply ultra-pure hydrogen in volumes of 300 liters per minute up to 10,000 liters per minute (20,000 cubic feet per hour or 624 cubic meters per hour).

The unique design of the PE9000 bulk system integrates multiple palladium membrane purifiers and P+E's next generation P130 control systems with PC-based centralized monitoring and control software. The proprietary software allows remote monitoring and control of the purifier system over LAN-connected PC's. Multiple redundant purifiers are mounted into modular racks. These modules include manifolding designed to allow individual purifiers to be serviced or hot-swapped without interruption to the facility's UPH supply. The PE 9000 systems feature integrated sensors and diagnostics to monitor system performance. If a problem is identified, the problem cell is isolated and a back-up purifier is put on line; avoiding yield losses and maintaining UPH system capacity.

P+E recently announced the introduction of its next-generation 9000S series purifier systems which feature a major reduction in overall system size and power consumption. Based on redesigned membrane assemblies, these systems will utilize the same advanced controls and features as the 9000 Series. These higher efficiency PE9000S models are now in commercial production.

### **About Power+Energy**

Established in 1993, Power+Energy, Inc. develops and manufactures hydrogen purifiers and separators for a range of applications including semiconductor fabrication, analytical laboratories and fuel cell development. P+E has a worldwide customer base and supplies systems to many leading producers of compound semiconductors. The company is developing a new hybrid hydrogen separation technology specifically designed for fuel cell applications. This new membrane, based on advanced nano-structures, will be an enabling technology for the early adoption of fuel cells using hydrogen generated on demand from traditional or alternative liquid fuel sources.

In addition to its hydrogen purifier products, P+E offers a line of palladium membrane systems used for separation of hydrogen from reformed fuels for fuel cells and related applications. As a part of this effort, P+E is currently working under three DoD contracts for the fabrication of membrane systems to deliver high purity

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hydrogen from methanol and diesel fuels. P+E will also utilize this same hybrid membrane technology to develop lower cost hydrogen purifiers for an expanded range of semiconductor and research applications.

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