



## Power+Energy™

*Fueling the Hydrogen Economy*

### **Power And Energy Receives Navy SBIR Contract For Hydrogen Processing Innovation**

*Company to demonstrate recover of water from hydrogen fuel processor using high sulfur fuels*

For Immediate Release

IVYLAND, Pa./EWorldWire/July 30, 2007 --- Power and Energy, Inc. (P+E) has received a new SBIR Phase I contract from the US Office of Naval Research entitled Modular High Power Fuel Cell System Design. Under this contract, P+E will demonstrate methods to recover the waste water from hydrogen fuel processing and remove critical impurities (including sulfur-bearing compounds). This recovered water can be reused to supply the water required for the fuel processing system.

This technology demonstration is another important milestone for P+E in delivering a practical system that can efficiently support the operation of fuel cells on board Navy vessels. In order to be practical, these systems need to utilize existing logistics fuel supplies that can contain large quantities of sulfur. The P+E technology avoids the need to utilize costly sulfur removal technology prior to converting the fuels into high quality hydrogen needed for fuel cell operations. P+E intends to demonstrate the feasibility of water self-sufficiency for a diesel fuel processor and fuel cell for ship-service power generation. Water consumption is an important issue for fuel cell implementation; it is especially critical on board ships where fresh, clean water is an expensive and precious commodity.

Power+Energy, Inc. is a leading developer and supplier of Palladium Alloy membrane systems for delivery of high quality hydrogen for electronics and energy applications. In a series of contracts with the US Navy, P+E has been developing key process components required to convert existing logistical diesel fuels into hydrogen. This same technology can be utilized across a spectrum of applications for fuel cells including mobile, stationary and portable power generation in commercial, residential and industrial markets.

P+E is actively working with a number of leading organizations in integrating fuel cell systems. This includes a series of contracts with the Army Research Office (ARO), DARPA, and the Navy (NAVSEA and ONR) to develop hydrogen separation systems for extracting hydrogen from methanol, ethanol and logistic (diesel and jet) fuels. P+E hydrogen separators have also been used in a number of successful demonstration projects including a diesel fueled mobile auxiliary power system for the Bradley M2/M3 Armored Fighting Vehicle. Other separators have been operated for periods extending far beyond 10,000 hours feeding PEM fuel cell systems in a wide variety of operating environments. The technology is scaleable from small portable systems (50-500 watts) to power plants in the megawatt range. Applications include portable battery chargers, auxiliary and back-up power systems and remote, off-grid power systems.

Power+Energy, Inc., established in 1993, is a privately held firm based near Philadelphia, Pennsylvania, with a branch office in Japan. The company develops and manufactures hydrogen purifiers, separators and membrane reactors for fuel cell systems as well as a number of applications including semiconductor fabrication, energy research and laboratory applications. P+E has a worldwide customer base and supplies hydrogen purifiers to producers of semiconductors including most major suppliers of high brightness light emitting diodes (LEDs).

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