

Stationary Fuel Cell -- Markets Reach \$2.6 Billion By 2017

LEXINGTON, Massachusetts (February 24, 2011) – WinterGreen Research announces that it has a new study on stationary fuel cells. Stationary fuel cell markets grow as the technology supports smaller more diverse units. The new study has 469 pages and 175 tables and figures.

These markets are poised to grow based on the creation of new efficiencies available directly to campus environments needing distributed energy that is separate from the grid. New composite materials based on nanotechnology are providing specialized high temperature ceramics catalyst materials to make systems more cost effective are achieving consistent price declines throughout the forecast period.

Distributed generation (DG) refers to power generation at the point of consumption. Generating power on-site, rather than centrally, eliminates the cost, complexity, interdependencies, and inefficiencies associated with transmission and distribution. Like distributed computing (i.e. the PC) and distributed telephony (i.e. the mobile phone), distributed generation shifts control to the consumer.

Distributed energy generation is the core of renewable energy from wind and solar. These intermittent sources of renewable energy are only feasible if there is a reliable way to store the energy for use when the wind is not blowing and when it is dark out. Stationary fuel cells provide that.

The electricity from the renewable energy can be used to manufacture hydrogen in a campus environment. Future generations of stationary fuel cells including Bloom Energy's energy servers offer the unique capacity to operate as an energy storage device, thus creating a bridge to a 100% renewable energy future.

Bloom Energy is a distributed generation solution that is clean and reliable and affordable all at the same time. Bloom's energy servers can produce clean energy 24 hours per day, 365 days per year, generating more electrons than intermittent solutions, and delivering faster payback and greater environmental benefits for the customer. DG systems require modest installations, sunny and provide consistent 24/7/365 load.



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As distributed generation moves to the forefront of corporate consciousness, stationary fuel cells including Bloom Energy Servers are designed to meet the needs of economically and environmentally minded companies.

Renewable energy is intermittent and needs stationary fuel cells to achieve mainstream adoption as a stable power source. Wind and solar power cannot be stored except by using the energy derived from these sources to make hydrogen that can be stored. Most likely the wind and tide energy will be transported as electricity to a location where the hydrogen can be manufactured. It is far easier to transport electricity than to transport hydrogen.

Stationary fuel cell markets need government sponsorship. As government funding shifts from huge military obligations, a sustainable energy becomes to most compelling investment model for government sponsored development. Stationary Fuel Cells are a good technology in need of further investment to make the entire renewable energy spectrum competitive.

FuelCell Energy is positioned to offer ultra-clean and reliable power generation. A fuel cell power plant helps meet the needs of customers efficiently. Systems improve the air quality in a service territory. Fuel cell is an electrochemical device that combines hydrogen fuel and oxygen from the air to produce electricity, heat, and water.

Direct FuelCell (DFC) power plants are designed to efficiently use fuels and provide renewable and ultra-clean baseload power. FuelCell Energy implements molten carbonate fuel cell (MCFC) power plants that depend on electrolyte for large, high-temperature fuel cells. The electrolyte uses a liquid solution of lithium, sodium and/or potassium carbonates, soaked in a matrix material. They operate at 650 degrees C. They are generally large systems with power ranges that extend to 2 mW. Their large size and mass limits the technology to large stationary applications. Fuel Cell Energy uses a nickel catalyst.



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FuelCell Energy stationary fuel cells are used in data centers, universities, commercial and institutional facilities. As an environmentally friendly power source, fuel cells are reliable, provide a consistent voltage output, run on various fuels, and produce both electricity and heat. Those advantages have led to stationary fuel cell installations in retail stores, telecommunication facilities, hospitals, and schools.

According to Susan Eustis, primary author of the study, “growth is spurred by the need to store the intermittent energy generated from renewable sources. Electricity generated from wind and solar can be stored as hydrogen and used in stationary fuel systems. Trends toward technology breakthroughs depend on investment in nanotechnology.”

Global demand for stationary fuel cells is projected to increase from \$122.9 million in 2010 to \$2.6 billion in 2017. Growth of stationary fuel cells is a function of the need to harness intermittent energy generated from renewable wind and solar energy sources. By using stationary fuel cells to address issues relating to intermittency an end to end energy system is achieved.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software. The company has 35 distributors worldwide, including Global Information Info Shop and Thompson Financial.

Key Words: stationary fuel cell market shares, Stationary Fuel Cell Market Forecasts, Stationary Fuel Cell Market Development, Market For Continued Fuel Cell Commercialization, Fuel Cell Operation, Fuel Environmental Issues, Power of a fuel cell, Hydrogen fuel cell technology, On grid and off grid issues, Impact of deregulation, Fuel cell issues, Fuel cell reliability, Laws and regulations, Solid oxide fuel cells (sofc), Alkaline fuel cells (afc), Phosphoric Acid Fuel Cells, Phosphoric Acid Fuel Cell (PAFC) Technology, Molten Carbonate Fuel Cells, Solid Oxide Fuel Cells, PEM Technology, Proton Exchange Membrane (PEM) Fuel Cells, PEM Fuel Cells, Platinum Catalysts, Vision For The New Electrical Grid, Fuel Cell Clean Air Permitting, Increased Power Density, Stationary power applications,
<http://www.wintergreenresearch.com/reports/fuel%20cell%20stationary.html>



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