NO. 27 WINTER 2006/07
www.fuelcellpower.co.uk

FUEL CELL POWER

The magazine for the power source of the future

HEADLINE NEWS

Members of Fuel Cell Power were shown the first large scale operational fuel cell in the UK, which provides electricity, heat and cooling at a leisure complex in Woking, Surrey.

Fuel Cell Power proposes a new programme to expedite the commercialisation of all types of fuel cells in the UK

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RECORD ORDERS FOR FUEL CELLS

Latham, USA

Plug Power Inc. of Latham, USA, received record orders for its Gencore[R] fuel cells in 2006. Out of a total of 539 orders, two thirds were from customers outside America, including 120 for distribution in South Africa. Plug Power expanded their global network of distributors and partners and established a relationship with Smart Hydrogen which has been set up to participate in the global hydrogen economy. Plug Power also signed a Strategic Partner Agreement with the National Innovation Company New Energy Projects to collaborate on technology and market development in Russia.

The U.S. Department of Energy and the European Commission have agreed to fund an unprecedented transatlantic collaboration with several European organizations to develop and demonstrate three Plug Power high temperature combined heat and power PEM fuel cell system prototypes. Plug Power is also continuing to work with Honda on the development of the fourth-generation Home Energy Station, which is a fully integrated fuel cell system that provides electricity and heat for a home or business, while also providing hydrogen fuel for a fuel cell vehicle. www.plugpower.com

HYDROGEN FUEL CELLS SECURE COMMUNICATIONS

The power to keep the lights on for essential services in New York will also be provided by Plug Power! During the major blackout in 2003, a fuel cell kept the electricity running at the New York Police Department Central Park station in Manhattan. The New York Power Authority has now announced that they will provide back up power at 22 public safety communications facilities.

Timothy S Carey, President and Chief Executive Officer of the New York Power Department said "These fuel cell installations will keep state communications on-line when they are often needed the most, during power outages and other emergency situations. We are pleased to play a role in this important new initiative. The Power Authority has undertaken more than a dozen fuel cell projects, in various types of applications using different fuel sources, to demonstrate reductions in air pollution and the advantages of distributed power supply"

The GenCore® fuel cell systems, according to Plug Power, are "high-performance solutions for the critical backup power needs of the telecommunications, utility and industrial uninterruptible power supply markets.

The hydrogen-fuelled GenCore five-kilowatt backup fuel cell system is available in seven configurations, providing a high level of flexibility to meet diverse customer needs. Unlike traditional technologies, which can be unpredictable, expensive to maintain and harmful to the environment, GenCore systems deliver up to five kilowatts of reliable backup power over a wide range of operating environments—with zero emissions." www.nypa.gov

***Front Cover**: UTC Phosphoric Acid Fuel Cell (PAFC) at Woking, Surrey. Picture courtesy of Gordon Foat*

FUEL CELLS DELIVER THE GOODS AT WAL-MART!

Ohio, USA

Cellex Power Products Inc has had considerable success with the beta evaluation of its fuel cell powered trucks by Wal-Mart, which was first reported in last winter's edition of Fuel Cell Power. The zero-emission, hydrogen fuel cell-powered pallet trucks have met and exceeded uptime, fuelling, environmental and safety targets. Highlights from the beta trials include:

- Increased productivity - Cellex fuel cells showed improved productivity via longer run times and shorter fuelling times when compared to lead acid batteries.
- Reduced fuelling time - Pallet truck operators fuelled their trucks in less than two minutes.
- Validation of indoor fuelling by operators - The indoor fuel dispensing area was reduced from 4,000 square feet for a lead acid battery room to only 200 square feet. It enabled operators to easily fuel their trucks quickly and safely.
- Increased operator satisfaction - Operators preferred Cellex's CX-P150 power unit over lead acid batteries due to its consistent power, ease of fuelling and flexibility to opportunity fuel.
- Quick training and orientation - Operators were fully trained within half an hour. In all, more than 100 operators and service technicians received training during the beta program.

Gary Lomas of the Linde Group, which was responsible for providing the hydrogen fuel, said that the lift truck operators successfully carried out over 2,100 fuelling procedures, proving that hydrogen can be transferred safely indoors. Their innovative distribution systems culminate in a very simple fuelling interface for lift truck operators.

A Wal-Mart operator drives a pallet truck powered by Cellex's CX-P150 fuel cell power unit.

Wal-Mart's Executive Vice President of Logistics and Supply Chain, Johnnie Dobbs, commented. "We really put these Cellex-powered vehicles to the test in our pallet truck applications and they did the job. Our pallet truck operators were most pleased with their performance and the ease of use."

www.cellexpower.com

MANUFACTURING PLANT FOR SOLID OXIDE FUEL CELLS IN GERMANY

Heinsburg, Germany

Ceramic Fuel Cells Limited (CFCL) is starting work on its manufacturing plant in Heinsburg, Germany. STAGE I will be the lease of a brown field site for production of up to 50,000 1kW solid oxide fuel cell stacks per year. Facilities will be shared with NUON, the Dutch utility company which operates in Holland, Germany and Belgium. The manufacturing facility will be commissioned in 2009.

Germany is a leading market for residential fuel cell units and utilities are actively encouraging fuel cell combined heat and power (CHP) development. The National Government has a €500 million development programme for hydrogen and fuel cells. There are several clusters developing and producing fuel cells and ancillary equipment in North Rhine Westphalia and the Regional Government is supporting the project with funding of €3.2 million. STAGE II is the option to buy an adjoining green field site for a purpose built factory, where up to 150,000 fuel cell stacks per annum would be manufactured on a fully automated production line.

The Minister for Economic Affairs and Energy of the State of North Rhine-Westphalia, Christa Thoben, welcomed the construction of a fuel cell manufacturing facility. "High-efficiency fuel cell power conversion is a key technology of the future and will enable a sustainable industry to develop here" she said. Dr Thomas Mecke, Chairman of the Board of Nuon Germany commented "A manufacturer of high-tech energy technology, Ceramic Fuel Cells, and Nuon, an innovative utilities provider, are more than a perfect match because Nuon too invests in clean energy and is looking for durable solutions to supply the energy of the future."

The Chief Executive Officer of Ceramic Fuel Cells, Brendan Dow, added "We are delighted to have identified the site in Europe where we will build our commercial manufacturing plant. Ceramic Fuel Cells will scale up production significantly at this plant, which will allow us to increase revenues, reduce unit costs and feed the growing market demand for fuel cell energy products."

FIELD TRIAL ACHIEVEMENTS

Micro CHP demonstration units are being evaluated at operational sites in Australia, New Zealand and Germany. The CHP2 demonstration unit at Delmenhorst, Germany enables EWE, a supplier of electricity and natural gas, to further develop their control strategy for the management of distributed generation appliances.

The CHP2 units incorporated several improvements from the first prototypes and the trials have achieved the following advances:

- Validated the remote monitoring capabilities of the CHP2 unit, such as remote start-up and shut-down and fault diagnosis.

- External validation of the CHP2 unit operating on European natural gas, electrical grid connection and power export according to European regulations.

FRENCH MARKET FOR LOCAL ELECTRICITY GENERATION

CFCL has signed a product development agreement with Gaz de France, Europe's leading distributor of natural gas, and De Dietrich Thermique, to develop a fully integrated micro CHP unit for the French residential market.

Gaz de France has an interest in 'distributed generation', that is energy generated close to the consumer, as demand for more efficient power and heating systems continues to grow. Gaz de France is leading the EU's DEEP program to evaluate decentralised energy systems. It is also an active member of the EU Hydrogen and Fuel Cell Technology Platform (HFP).

De Dietrich Thermique has been assessing fuel cell and other generator technologies for several years and will undertake the integration of the fuel cell into their condensing boiler platforms. It is the largest provider of gas heating systems in the French market and has a portfolio of renewable and low carbon heating systems.

De Dietrich Thermique has an extensive network of installers and has trained nearly 10,000 French installation engineers at their in-house facilities over the last 12 months. CFCL, De Dietrich Thermique and Gaz de France are starting immediately to define the specifications and requirements for a CHP appliance for the French residential market. Gaz de France will then conduct a test programme of the prototype to demonstrate the unit's efficiency, reliability and incorporation into the electricity grid.

Dominique Henneresse, CEO of De Dietrich Thermique said "Joining forces with CFCL and Gaz de France represents an excellent opportunity to confirm our leading position in the field of high efficiency heating and hot water solutions to provide significant energy savings while protecting the environment in line with current and future regulations. We are constantly innovating in combined energy systems and the micro-CHP technology fits perfectly our vision of the future of residential heating and generation." www.cfcl.com.au

NEWS

CARBON NEUTRAL FUEL CELL MANUFACTURE

Basingstoke, UK

Voller Energy Group plc is the world's first fuel cell manufacturer to become carbon neutral. Fuel cell systems produce electricity without the emissions normally associated with conventional generators. However, although Voller Energy has worked hard to reduce carbon emissions, when they manufacture the fuel cell systems at their specialist research and development facility in Basingstoke, UK, the Company does produce some carbon emissions.

Voller has been working with the World Land Trust, which offers effective guidance on emission reduction strategies and provides measurable carbon offsets through its Carbon Balanced programme. The World Land Trust assessment was that the Voller Energy operations had produced 816 tonnes of carbon dioxide to date and a further 104 tonnes of carbon dioxide were being produced annually. These emissions will be offset through the purchase of up to 7 hectares of land in the South American rainforest for reforestation. www.voller.com

LOCAL ENERGY FROM FUEL CELLS

Surrey, UK

Around the world tremendous progress is being made with fuel cells. Hundreds are now providing reliable back-up power for industry or combined heat and power in residential buildings. The technology was first discovered by Sir William Grove in 1837 and the first practical working fuel cell was demonstrated by Dr Francis Tom Bacon OBE, FRS. Dr Bacon's technology was used to provide auxiliary power for the Apollo spacecraft and he worked to develop this for use as a clean and efficient power source in buildings or for road vehicles.

The first large-scale fuel cell in the UK was provided by UTC Power and contributes electricity and heat to a leisure complex in Woking, Surrey. Mike Company from Woking Council explained the technology to Dr Bacon's daughter, Daphne Vivian-Neal and his son, Edward Bacon, during a visit to Woking in November.

Edward and Daphne were very impressed by Woking's work with energy efficient and renewable technologies. Fuel Cell Power is proposing a new programme to expedite the commercialisation of all types of fuel cells in the UK.

There is growing support around the world for fuel cells in a variety of applications, from small units powering laptops to large systems powering buses and stationary structures creating electricity and heat from organic waste. Local authorities could play their part by extracting biofuels or hydrogen from the vast amounts of energy which are at present thrown away into landfill sites. Hydrogen fuel cell systems would also add value to local wind and solar power conversion technologies. Hundreds of fuel cells are supplying back up electricity around the world and over a hundred prototype combined heat and power units are being evaluated in European homes. It would be good to see the UK as a world leader, with a new programme to evaluate and bring to commercialisation the fuel cell technologies which are being developed in this country.

INTELLIGENT ENERGY

London, UK

John Rennocks, the former Finance Director of Smith and Nephew plc, Powergen plc and Corus plc, has joined fuel cell and fuel processing power systems company Intelligent Energy as its new non-executive Chairman. He brings to his new role a wealth of experience in power generation, the automotive industry, biotechnology, support services and manufacturing, making him perfectly suited to chair this dynamic, clean energy company.

Intelligent Energy has been selected as a corporate member of the World Technology Network (WTN) which defines itself as a 'community for and of those people working in and around new technologies, who are creating the future and changing the world'. Membership of the WTN is comprised of nearly 1000 individuals and organisations from over 60 countries, nominated and judged by their peers to be the most innovative in the technology world. www.intelligent-energy.com

FIRST FUEL CELL HYBRID FOR NATURAL GAS PIPELINE

Connecticut, USA

FuelCell Energy Inc. is initiating production of the first multi-megawatt hybrid fuel cell system generating ultra-clean electricity while recovering energy normally lost during natural gas pipeline operations.

The new product, the Direct FuelCell-Energy Recovery Generation™ system will be delivered to Enbridge Inc. It combines a 1.2 megawatt (MW) Direct FuelCell power plant with a 1 MW unfired gas expansion turbine.

Operating at natural gas pipeline transfer stations, the system generates 2.2 MW of ultra-clean electricity.

Engineering work on the Direct FuelCell-Energy Recovery Generation™ system has been underway for more than a year and delivery to Enbridge is planned for the third quarter of 2007. Enbridge Inc., a leader in energy transportation and distribution in Canada and North America, has ordered FuelCell Energy's new up-rated 1.2 megawatt Direct FuelCell power plant to ensure product integration is complete in time to meet the needs of emerging markets.

To transport natural gas across the continent, pipelines operate at high pressures and considerable energy must be injected to achieve the pressures required. This high pressure must be reduced when the gas enters lower pressure systems that deliver gas to homes and businesses.

Currently, there is no commercial use made of the energy that is lost at this stage. Additionally, when pressure is reduced, the gas cools and to ensure reliable pipeline operations, the cooling must be offset by burning some gas in boilers and reheating the supply to an acceptable temperature.

With the new Direct FuelCell-Energy Recovery Generation™ system, high-pressure gas passes through a turbine, capturing some of the energy that was previously lost, and turns it into usable electricity. The integrated fuel cell also electrochemically converts some of the gas into low-impact, environmentally friendly electricity. Finally, heat normally generated by the fuel cell warms the gas to its proper distribution temperature, thus eliminating the boiler and its emissions. The combined system can achieve electrical efficiencies over 60 percent, with low noise and virtually zero smog emissions.

"This first project will illustrate the benefits of Direct FuelCell power plants in delivering unparalleled energy efficiency, which is extremely important in this climate of rising fuel prices," said R. Daniel Brdar, FuelCell Energy's President and Chief Executive Officer. "This system addresses a significant need, and opens new market opportunities for the company."

Enbridge's research has identified 40-60 MW of opportunities for the Direct FuelCell-Energy Recovery Generation™ system in just one of its operating areas. The North American market represents another 200-300 MW, consisting of the half dozen U.S. states currently seeking to add the environmental attributes of fuel cells to their Renewable Portfolio Standards.

These jurisdictions recognize that a portfolio of low-impact energy supplies, renewables and near-zero emission fossil fuel technologies can provide immediate and long-term benefits.

There are already initiatives geared toward embedding ultra-clean generation sources to deliver electricity directly to the grid and hybrid fuel cell power plants are uniquely positioned to generate electricity with low environmental impact. The Direct FuelCell-Energy Recovery Generation™ system is particularly suited to these programs since the pipeline pressure reducing stations are inherently close to, or embedded within, urban centers, where the demand for clean electricity is the greatest.

"This is a prime example of how high-efficiency, near-zero emission technologies can play a meaningful role in meeting clean air and climate change objectives." said Jim Schultz, Enbridge Senior Vice President, New Ventures. "Enbridge is a leader in the North American energy market, and we are excited to work with FuelCell Energy and our other vendor partners to commercialize this new innovative fuel cell plant, and to ensure gas utilities are part of the environmental solution for our society."

PROJECT FOR 100MW RENEWABLE ELECTRICITY

The electricity distributors in Connecticut are required to include a minimum of 100 megawatts (MW) of long-term power purchase contracts with renewable energy sources that have received the approval of the Connecticut Clean Energy Fund (CCEF).

The CCEF was created by the Connecticut General Assembly and is funded by a surcharge on electric ratepayers' utility bills. Under this scheme, FuelCell Energy has submitted bids totalling 98.6 MW of fuel cell power project proposals ranging in size from 2.4 MW to 28 MW, in partnership with several developers. The CCEF is scheduled to announce project selections in March.

Connecticut is one of 23 Renewable Portfolio Standards (RPS) states that mandate increased amounts of electric power be generated by green energy sources.

Connecticut's RPS requires that 10 percent of peak power, or approximately 400 MW, must come from renewable energy sources - including fuel cells - by 2010.

Project 100 was set up to encourage the installation of 100 MW of electricity generated by renewable means by 2008. Submissions have been received for nearly 315 MW of project proposals, spanning a wide breadth of clean energy technologies including those using fuel cells, wind sources, biomass and solar power.

FuelCell Energy's Direct FuelCell power plants generate electricity electrochemically, without combustion, so they significantly reduce emissions of the greenhouse gas carbon dioxide and other harmful pollutants. They can run on a variety of fuels, including renewables like anaerobic digester gas, ethanol and other fuels from biomass sources, as well as natural gas and propane. Heat created during fuel cell operation may be used in combined heat and power applications, further increasing the plants' efficiency and cost-effectiveness.

BOOST FOR WORLD MARKETING OF FUEL CELLS!

FuelCell Energy has made a marketing and distribution agreement with the Linde Group, a worldwide market leader in industrial gases and engineering with business in over 70 countries around the globe.

Under the terms of the agreement Linde gains the non-exclusive right to sell and market Direct FuelCell(R) power plants worldwide except where FuelCell Energy has already granted exclusive distribution agreements. In the United States, Linde expects to market fuel cell power plants that operate on biogas, which qualifies as a renewable energy source. Direct FuelCell units can run on any hydrocarbon fuel, including renewables like ethanol, anaerobic digester gas (generated in wastewater treatment) and other biofuels, as well as propane and methane.

"Linde is committed to renewable energy," said Bruce Ludemann, FuelCell Energy's Senior Vice President of Sales and Marketing. "By partnering with them we greatly extend our reach on a global scale, into new markets where we haven't previously had distribution channels. With Linde's vast experience in gas processing, we can work together towards opening many new markets using renewable fuels."

Linde has established a strong presence developing sustainable energy solutions through technological innovation and participation in collaborative demonstration projects and alliances.

Its initiatives include:

- Alternative fuels - hydrogen and other sustainable replacements for gasoline, diesel and fuel oil.
- Green power - sustainable distributed generation solutions for industrial and commercial customers.
- Packaged energy - delivered hydrogen, LPG and other fuels to meet small-scale sustainable energy needs.

Creating new options for renewable fuels and fuel cell power generation, with a leader in fuel cell manufacturing like FuelCell Energy, allows Linde to match their competencies in gas processing and handling with their desire to make a significant contribution to the sustainable energy arena. As a leading player in the development of the hydrogen economy, Linde sees developments in these areas as complementary to their overall strategy in the area of sustainable energy solutions.

www.fce.com and www.linde.com

Linde pipelines carrying hydrogen and carbon monoxide

NEWS

BRIDGING THE POWER GAP

California, USA

A significant power gap exists between today's portable device requirements and available power sources. The Millenium Cell will enable extended runtime for all types of portable applications. Their new prototype portable cartridge demonstrates over 500Wh/kg with a Protonex fuel cell, that is three to four times the storage capacity of a similar sized battery. The programme plan is to exceed 550Wh/kg before final release of the new cartridge technology which is scheduled to be used in the Company's licensees' products in 2007.

Millenium Cell will demonstrate its new hydrogen fuel option for award winning Jadoo Power Fuel Cells. *Electronic Products* named Jadoo Power systems Inc as a Product of the Year Award Winner for its N-Gen Fuel Cell Power Unit. *Electronic Products* says "Fuel cells show great promise in driving devices off-grid without the environmental, bulk, or weight penalties of batteries and generators, but require design-in for their particular application. The N-Gen Fuel Cell Power Unit is the first 'prosumer' fuel cell system, with industry-standard battery connectors for easy integration into consumer devices."

Millenium Cell's 'hydrogen battery' has two components, a fuel cell module that provides power and an energy storage module that fuels the fuel cell. Hydrogen is produced by their Hydrogen on Demand[R] technology, using a sodium borohydride fuel solution. When hydrogen is required, fuel is pumped into the miniature reactor. Fuel solutions of appropriate concentration can be pre-mixed or water can be added on site to the dry fuel. Proprietary dry sodium borohydride fuel blends enable indefinite shelf-life for hydrogen batteries and make it possible to transport them by air.

Millenium Cell has been awarded a $4million delivery order from the Air Force to deliver the next generation of sodium borohydride based fuel cell cartridge technology to address higher energy density targets for future power sources. Chemical hydrides exhibit very high storage efficiency with hydrogen, which has been identified by the US National Academy of Science and the Department of Energy as one of the critical barriers to widespread adoption of fuel cells for transport purposes to reduce the nation's dependence on oil and natural gas imports. www.milleniumcell.com and www.jadoopower.com

HYDROGEN FUEL CELL POWERED TRAIN

Cambridge, USA

The Railway Technical Research Institute of Japan has successfully completed an evaluation of the world's first railway vehicle powered by a fuel cell. The 120kW fuel cell was supplied by Nuvera Fuel Cells, which is based in the USA and Italy. Hydrogen is stored in a high pressure tank. The purpose of the development was to reduce noise and emissions and to build train systems which do not need external electricity supplies. Although problems still remain in cost reduction, increased output capacity and downsizing, the success in these running tests drove the technology a step closer to the introduction of the fuel cell system into railway operations. www.nuvera.com

EUROPEAN ENERGY, HYDROGEN AND FUEL CELLS

Brussels, Belgium

The European Commission has proposed a comprehensive package of measures to establish a new Energy Policy for Europe to combat climate change and boost the EU's energy security and competitiveness. The Commission believes that when an international agreement is reached on the post-2012 Kyoto framework this should lead to a 30% cut in emissions from developed countries by 2020. To underline its commitment the Commission proposes that the European Union commits now to cut greenhouse gas emissions by at least 20% by 2020. Commission President José Manuel Barroso said: "A common European response is necessary to deliver sustainable, secure and competitive energy." Commissioner for Energy Policy, Andris Piebalgs added, "If we take the right decisions now, Europe can lead the world to a new industrial revolution: the development of a low carbon economy."

Europe faces real challenges. There is more than a 50% chance that global temperatures will rise during this century by more than 5C. On current projections, EU emissions would increase and the EU's energy import dependence would jump to 65% in 2030. The Commission aims to maintain the EU's position as a world leader in renewable energy, by proposing a binding target of 20% of its overall energy mix will be sourced from renewable energy by 2020 and this will be supplemented by a minimum target for biofuels of 10%. The Commission also reiterated the objective of saving 20% of total primary energy consumption by 2020, although there was some disappointment recently when the expected announcement of new measures was postponed.
www.europa.eu

FP7 EUROPEAN FUNDING

The European Commission has issued the first calls for funding energy projects, including hydrogen and fuel cells, under the new 7th Research Framework (FP7). This call closes on 3rd May 2007. Proposals should fit in with the plans of the Hydrogen and Fuel Cell Platform (HFP). It is proposed that a Joint Technology Initiative (JTI) for hydrogen and fuel cells should be operational by 2008 and the members would be responsible for determining further research and demonstration activities in this field.
www.cordis.europa.eu
www.hfpeurope.org

FUEL CELLS FOR CARBON MITIGATION

New Jersey, USA

The Carbon Mitigation Initiative at the University of Princeton, in association with Ford Motor Company and BP, has made comprehensive proposals for stabilising and then reducing carbon emissions. Fuel Cell Power has summarized their proposals in the attached document and added suggestions of the potential of fuel cell technologies to contribute to future emission reductions.
www.Princeton.edu

The present annual addition of carbon to the atmosphere through the production and use of fossil fuels and deforestation is nearly 7 billion tonnes. if no action is taken, carbon emissions are likely to double in the next fifty years to 14 billion tons per year. The study recommends several measures which could reduce future annual carbon emissions by 1 billion tons in fifty years time. Each of these measures is called a 'Wedge'. As developing countries' economies grow to match the West, about 7 wedges will be needed to stabilize global carbon emissions at the present level. Wedges are in three categories: 'Efficiency and conservation', 'De-carbonization of electricity and fuels' and 'Natural sinks'.

EVENTS

16th – 20th April 2007, Hannover, Germany: The Group Exhibit Hydrogen and Fuel Cells at the Hannover Fair is the international meeting point for the world's hydrogen and fuel cell industry. www.fair-pr.com

23rd – 24th May 2007, Aberdeen, UK: H207 Getting down to business. The Scottish Hydrogen and Fuel Cell Association is bringing together European and American efforts to establish a global hydrogen industry. The existing renewable energy industries will be shown how H2 and fuel cells can add value to their opportunities. Leading industry authorities will outline practical public actions and implementation programs and participants will be made aware of European/US/ World trading links. Attendance at the conference, exhibition and the 'Giant Networking Evening' are all free.

www.all-energy.co.uk

18th – 22nd June 2007, Maastricht, The Netherlands: 3rd European Hydrogen Energy Conference. Research and development results will be presented and issues such as the preparation of society for the hydrogen economy discussed. www.ehec2007.com

2nd – 6th July 2007, Lucerne, Switzerland: Fuel Cell Forum, Two conferences with exhibitions: Fuel Cells for a Sustainable World and World Sustainable Energy Forum. www.efcf.com

25th-27th September 2007, London, UK: Tenth Grove Fuel Cell Symposium. *International Conference*:. This year, the conference sessions will reflect industry progress featuring advances in the main application areas including:

- Transportation, Hybrids & APUs, and Commercialisation
- Commercial/Industrial & Large Stationary Fuel Cells
- Residential & Small Portable Fuel Cells
- Consumer Electronics & Micro Fuel Cells
- Alternative Fuel Sources

There is a call for posters to be submitted by 16 February 2007.

Major Exhibition Area: At the 2007 Grove Exhibition you will meet up to 100 leading manufacturers and suppliers of fuel cells and component products, whilst viewing live demonstrations.

The Venue: The Tenth Grove Fuel Cell Symposium will return to the Queen Elizabeth II Conference Centre in Westminster, London, UK.

The organizers: The Tenth Grove Fuel Cell Symposium is organized by Elsevier, publisher of the Journal of Power Sources, Fuel Cells Bulletin, Refocus, and FC Focus. Conference enquiries: Janet Seabrook: grovefuelcell@elsevier.com
Exhibition enquiries: Pam Chattin: pamchattin@aol.com

www.grovefuelcell.com

Fuel Cell Power provides information about all types of fuel cells. It has been set up by the family and friends of the late Dr. F. T. Bacon, OBE, FRS, the fuel cell pioneer who was concerned about the effects of discharging the by-products of combustion into the atmosphere.

Information can be obtained from:
Fuel Cell Power, Lyndhurst, The Street, Woolpit, Suffolk, IP30 9QG.
Tel. & Fax 01359 245073

www.hydrogen.co.uk www.futureenergies.com www.fuelcellpower.co.uk