

## Press Release

13 March 2006

### Key Technical Milestone: Compact, Lightweight 1kW Fuel Cell

Ceres Power, the AIM-quoted fuel cell group, today announces that it has taken a major step in commercialising its technology with the achievement of a critical milestone. The Company has successfully designed, built and tested a 1kW fuel cell stack (the “Ceres Stack”) generating sufficient power for the average home.

The production-engineered Ceres Stack is extremely compact, both smaller and lighter than a typical car battery. It is designed to be reliable, robust and economical, lending itself to rapid mass market uptake.

The Ceres Stack is the fundamental building block of micropower generation products aimed at a variety of consumer and commercial uses. These include combined heat and power (CHP) units in homes running off natural gas, in addition to electrical generators using bottled gas fuels and auxiliary power units for vehicles.

The Ceres Stack incorporates multiple engineering innovations to deliver breakthrough savings in size, weight, component count and production cost, whilst improving product performance. The unique Ceres technology allows the fuel cells to start up and shut down rapidly and repeatedly, withstand mechanical shock and have very long lifetimes under realistic operating conditions.

Ceres is working in a commercial development programme with Centrica plc (trading as British Gas) to provide domestic CHP systems in the UK, substantially reducing both energy bills and CO<sub>2</sub> emissions. Ceres CHP products are designed to produce electricity and heat in the home from natural gas. British Gas estimates that “this makes the technology immediately accessible by 14.5 million UK households”.

The UK Government has already identified micropower generation as a core technology within national energy policy. The Ceres Stack will enable fuel cells to play a key role in the widespread uptake of micropower products.

Peter Bance, CEO of Ceres Power, comments:

“The successful delivery of a 1kW fuel cell lies at the heart of our plans to bring product to market both via existing partnerships and new customers in the UK and overseas. As concerns grow over rising utility bills, security of energy supply and how to meet environmental targets, the opportunity for Ceres to build its business and create further value for shareholders has never been better.”

#### For further information:

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Paste the link below into your browser for an image of Peter Bance, Chief Executive of Ceres Power, with fuel cell: [www.cerespower.com/investor/stack.htm](http://www.cerespower.com/investor/stack.htm)

### **About Ceres Power**

Ceres is a successful AIM-listed fuel cell business developing a range of global market applications including residential combined heat and power, on-site / back-up generators and auxiliary power units for transport. Critically, the technology uses low cost materials and existing mass-production techniques. And, unlike many fuel cells, the Ceres cell can run on widely available fuels like LPG, propane and natural gas as well as on hydrogen.

Since its formation in 2001, the Company has received major recognition for its technology and business credentials.

Ceres won the prestigious 2003 Carbon Trust Innovation Award in the UK for green technology with the best commercial potential.

More recently, Ceres secured the industry's top accolade by winning the Institute of Materials, Minerals and Mining's Gold Medal for 2005.

In January 2006, Ceres Power was selected as the only fuel cell company in the government's new Energy Research Partnership.

Ceres Power has raised over £25 million of funding through two rounds of private equity and its AIM IPO in November 2004. The company enjoys the support of many blue chip City institutions as financial backers including Fidelity, Morley and JP Morgan.

### **About Ceres Power's Technology**

Ceres fuel cell stacks are comprised of multiple fuel cells layered on top of one another, each made from stainless steel with tiny amounts of ceramic coating. The cells combine fuel and air to create electricity and heat via a quiet, solid state electrochemical process similar to a battery. As this process does not involve combustion, unlike an engine or burner, it is highly efficient and environmentally friendly.

Ceres has developed a unique adaptation of Solid Oxide Fuel Cell (SOFC) technology, able to operate at temperatures substantially lower than conventional designs which run at 800 – 1000 degrees C. By using a new generation of ceramic materials known as CGO (cerium gadolinium oxide) instead of the industry standard YSZ (yttria stabilised zirconia), operation at 500-600 degrees becomes possible. This in turn allows use of conventional stainless steel rather than ceramic as the cell substrate, separating the functions of mechanical support from electrochemistry.

The electrochemical layers can then be made extremely thin and optimised for maximum performance, resulting in world-beating power density levels, whilst the stack material costs are radically reduced. The efficiency of converting fuel into electricity and heat is therefore very high and this efficiency is maintained across a wide part-load range. In addition, the heat to power ratio is approximately one-to-one making the technology ideal for applications such as CHP, where levels of electrical output need to be maintained even when heat demand is modest.

Instead of totally ceramic cells, these metal-supported cells are mechanically highly robust and can be easily sealed (e.g. through welding) and have thermal coefficients well matched to their ceramic coatings. This allows great resistance to thermal shock, permitting rapid start-up times and the potential for thousands of ON / OFF cycles for everyday usability. In addition, the technology retains the fuel flexibility of SOFC, and has proven ability to run highly efficiently on commercially available fuels such as LPG, propane, natural gas and alcohols.

In conjunction with the Ceres Stack programme, the Company has been developing the non fuel cell elements within the complete product, known as the balance of plant (“BOP”), as part of its systems integration activities aimed at delivering products for specific customers. Because of the unique attributes of the technology, Ceres Power has been able to dramatically reduce the time and cost of BOP development and systems integration by utilising mature component supply chains and ordinary, low cost materials. Unlike other fuel cell designs which operate at more extreme temperatures, time-consuming and expensive bespoke solutions for BOP components are not required.