



# CERAMIC FUEL CELLS LIMITED

Clean power for your home

27 February 2008

## CERAMIC FUEL CELLS LTD (ASX: CFU)

### €12.4M INVESTMENT IN MANUFACTURING FACILITY AND COMMERCIAL ORDER FROM NUON

Ceramic Fuel Cells Ltd (CFCL), a global leader in fuel cell development, today announces that it is investing €12.4 million in the construction of a manufacturing plant in Heinsberg, Germany for the commercial production of its fuel cell systems.

CFCL also announces that it has received a volume order from Nuon, The Netherlands' largest energy company and CFCL's partner for that market. CFCL and Nuon have agreed on a set of performance targets for a commercial unit. On CFCL's achievement of these targets, Nuon will order 50,000 fuel cell systems, to be delivered over a five year period from June 2009. The order is expected to generate substantial revenue for CFCL over the five years.

CFCL's fuel cell systems will be integrated into conventional boilers for use in the low carbon emission heating and power market. These new generation, highly efficient fuel cell boilers, known as micro-combined heat and power (mCHP) units, will be deployed by Nuon for its residential customers to generate both electricity and heating in their homes.

CFCL will assemble its fuel cell systems at its Heinsberg facility in automated and semi-automated production lines in a staged scale-up operation. Initial capacity will be 10,000 units per year, enough to fulfil the Nuon order. Phase II of the project will see an increase in capacity to 160,000 stacks per year within the existing building. The total cost to CFCL of phase I of the manufacturing project, including all plant and equipment and commissioning, will be €12.4 million, significantly below previous expectations. Volume production is expected to commence from June 2009.

In a further technical breakthrough, CFCL's advances in power density have enabled the Company to increase the output from each of its fuel cell stacks to 2kW of electricity at minimal additional balance of plant cost. This significantly reduces the unit's cost per kW and increases the unit's CO<sub>2</sub> savings. A 2kW unit provides ample power for the average household's annual "base-load" requirements, as well as additional power for export to the grid. A 2kW unit can save up to three tonnes of carbon dioxide per year compared to existing electricity generation. CFCL has frozen the design of its fuel cell stack and manufacturing processes for the Heinsberg plant.

Brendan Dow, Managing Director of CFCL, commented:

*"Increasing energy prices and the global response to climate change are contributing to an urgency for the introduction of efficient and clean energy generation. CFCL is well placed to benefit from these forces.*

*"In the past 12 months, we have worked rigorously to achieve a plant design that will meet our needs both now and in the future. We have engaged a highly experienced project management team to supervise the plant's construction in a timeframe that ties in with our plans for first commercial production. The Heinsberg plant, together with our UK powder plant and recently announced long term supply agreements with H.C. Starck and CeramTec, are all part of our co-ordinated strategy to scale up to volume manufacturing, whilst minimising risk and capital costs.*

*"Nuon is supporting our product development through their order for our entire phase one production capacity. We look forward to continuing to develop commercial products with our*

*utility customers and appliance partners in Europe and Japan. With these developments we are well on track to significantly increase our revenue generation from the second half of 2009."*

Kjartan Skaugvoll, Managing Director, Nuon Retail, said:

*"Energy efficiency is a top priority for our customers. The cooperation with CFCL provides us with great opportunities to help our customers take the next step in reducing their energy bills and limiting emissions. Fuel cell technology will be an integral part of our future portfolio of products and services as decentralised generation becomes part of our business model."*

Ends

**Managing Director Brendan Dow discusses the Heinsberg project and cooperation with Nuon on a [Boardroomradio](#) webcast – [click here](#) or go to [www.brr.com.au/cfu](http://www.brr.com.au/cfu).**

**CFCL will also host an Open Day for UK analysts at its powder plant and offices in Bromborough, Merseyside, on Friday 29 February 2008. For details please contact Vicky Watkins at Hogarth on +44 (0) 20 7357 9477.**

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**Notes to Editors**

**Manufacturing plant**

CFCL first announced plans to construct a volume manufacturing facility in Heinsberg in December 2006 with the aid of a grant from the North Rhine-Westphalian Government for the whole project of up to €3.2 million. During 2007, Nuon, which owns and manages the industrial park, spent €400,000 on refurbishing the site in preparation for its re-development.

Work on the manufacturing facility has begun this week in a staged scale-up operation. Phase I will involve the building of a semi-automated production line capable of producing 10,000 fuel cell systems per annum. Phase II will involve the installation of additional fully automated production lines designed to produce up to 160,000 units per year, within the existing building leased by CFCL. CFCL intends to fund this expansion using both existing cash resources and debt facilities and the Company is currently in discussions with financial institutions. CFCL also retains an option to acquire a 'greenfield' site at the industrial park for a third phase production expansion.

**Product development agreement for the Benelux market**

In July 2007, CFCL formed an agreement with Nuon NV, Remeha BV and De Dietrich Thermique to jointly develop a fully integrated mCHP unit for the residential market across The Netherlands and Belgium. As part of that partnership, the parties agreed a set of specific targets for the commercial mCHP unit which encompass physical weight and size, power and heat output, efficiency, lifetime, CO<sub>2</sub> savings and selling price. On the basis that these targets are met, Nuon

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will purchase 10,000 units per year for five years commencing from the final commissioning of CFCL's fuel cell manufacturing facility, on schedule for June 2009.

### **CFCL's fuel cell systems and mCHP units**

In line with the Company's strategy, CFCL has recently announced that it will outsource the manufacture of its fuel cell 'power chips', one of the components of CFCL's fuel cell system, to leading ceramics manufacturers H.C. Starck and CeramTec. Both companies have entered long term contracts to supply CFCL with fuel cells made at their manufacturing facilities in Germany. CFCL will supply high quality ceramic powder from its own plant in Merseyside, UK.

CFCL will assemble the fuel cell stacks and other core components at its Heinsberg facility to produce complete fuel cell modules for delivery to CFCL's appliance partners in Europe and Japan for integration into conventional hot water boilers.

The resulting mCHP product will look just like a conventional high-efficiency boiler, however, as well as generating heat and hot water, it will also generate more than enough power to meet an average household's annual energy needs. This means more efficient use of natural gas resources while CO<sub>2</sub> emissions are up to 35% lower than from a gas-fired power station and up to 60% lower than from a conventional coal-fired power station.

The fuel-cell boiler will be easy to install as it uses the same pipes as existing high-efficiency boilers.

Since January 2006 CFCL has installed and operated field trial units in Australia, New Zealand and Germany. CFCL is now developing fully integrated mCHP units with leading utility customers and appliance partners in five key markets:

- Gaz de France and De Dietrich Thermique in France;
- EWE and Bruns Heiztechnik in Germany;
- E.ON UK and Gledhill Water Storage Ltd in the UK;
- Nuon and Remeha Group in Holland; and
- Paloma in Japan.

### **About CFCL**

**Ceramic Fuel Cells Limited** is a world leader in developing solid oxide fuel cell (SOFC) technology which can provide reliable, energy efficient, high-quality, and low-emission electricity from widely available natural gas and renewable fuels. CFCL is developing SOFC products for small-scale on-site micro combined heat and power (m-CHP) and distributed generation units that co-generate electricity and heat for domestic use.

CFCL is developing m-CHP products with leading appliance partners and utility customers in Germany, France, the United Kingdom, Holland, and Japan.

CFCL is listed on the London Stock Exchange AIM market and the Australian Securities Exchange (code CFU).

[www.cfcl.com.au](http://www.cfcl.com.au)

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