



# CERAMIC FUEL CELLS LIMITED

Creating the energy to succeed™

ABN 82 055 736 671

Media Release  
1<sup>st</sup> March 2004

## Emerging Growth Market Good for the Environment

Australia's leading edge solid oxide fuel cell technology developed by Ceramic Fuel Cells Limited will be the stepping stone to a worldwide market valued at several billion dollars.

According to recent research, electricity generation at or close to the point of consumption is one of the fastest growing sectors in the energy industry.

Referred to as distributed generation (DG) or decentralised energy (DE), the World Alliance for Decentralized Energy predicts that DE, which currently stands at around 7 per cent of world electricity generation, will double by 2010 compared to a growth of 2.4 per cent per annum from traditional sources.

Mr Ric Brazzale, executive director of the Business Council for Sustainable Energy, said DG installations are growing significantly in developed countries, particularly in Europe, and following an expected increase in uptake, costs would fall, making them even more attractive.

"DG technologies can play an important role in Australia to meet our growing peak power needs as well as reducing the growth in greenhouse gas emissions," he said.

"Implementing market-based measures that define a price signal for low greenhouse technologies will be beneficial in supporting the growth of distributed energy. Some states in Australia, including Queensland and New South Wales, have implemented such measures and other states, like Victoria, are currently considering options to do the same"

Melbourne-based Ceramic Fuel Cells Limited (CFCL) is set to commercialise various Solid Oxide Fuel Cell (SOFC) products that can be manufactured into small-scale on-site power generators.

The most likely market entry product will be a micro Combined Heat and Power unit that co-generates electricity and hot water for domestic use.

Dr Allen Conduit, chief executive officer of CFCL, said worldwide deregulation of energy markets, environmental concerns and demand for a reliable power supply have focussed attention on alternatives to centralised power generation.

"Micro-scale, low-carbon distributed generation in the range of 1 to 10 kW is gaining enormous interest in Europe, Japan and the US.

"Australia and the US, although not signatories to the Kyoto protocol, are committed to reduce greenhouse gas emissions. New competitive markets for electricity and heat, advances in reliable intelligent system control technologies and successful outcomes from R&D have all contributed to this new opportunity," Dr Conduit said.

"Our solid oxide fuel cell generates electricity through an electrochemical process, somewhat like a battery, but it doesn't need to be recharged because it operates continuously from natural gas, LPG, propane or methane.

“As well as being an extremely efficient means of generating electricity, the fuel cell reaction produces valuable high temperature heat that can be used in a range of co-generation applications such as the production of hot water.

“SOFC products have the potential to provide a cheaper, quieter, greener and more reliable energy supply,” Dr Conduit added.

In Germany, one of the target markets for CFCL’s SOFC products, distributed generation is already at 13 per cent of total generation. Government support in Germany is demonstrated by a Combined Heat and Power (CHP) law that provides a subsidy of Euro 0.0511 per kWh for generation from small CHP systems.

In commercialising its patented technology, Ceramic Fuel Cells Limited has gained substantial shareholder investment from companies such as Metasource (Woodside Energy’s sustainable energy company), Energex (gas and electricity distributor) and CSIRO (Australia’s foremost research organisation).

After more than ten years conducting world-leading research and development, CFCL is evolving into a product development company. The company’s intellectual property covers a wide range of areas including SOFC and high temperature ceramic and metal technologies, fuel cell stacks and operational methodologies.

Opportunities are available for joint venturing in co-development of total product systems, including marketing and distribution, and cell manufacturing.

ENDS

***References:***

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

[www.localpower.org](http://www.localpower.org) (WADE’s World Survey of Decentralized Energy-2004)

***About Ceramic Fuel Cells Limited:***

CFCL is a developer of fuel cell systems based on SOFC (Solid Oxide Fuel Cell) technology and acknowledged globally as a leading producer of flat-plate all-ceramic SOFC and stack technology. Originally established in 1992 as a research consortium, CFCL was restructured for commercialisation in 1999. The company has more than 80 employees and 8,000 square metres of facilities for R&D and pilot production in Melbourne, Australia. CFCL offers 1-2 kW SOFC stacks, systems and application development support services to product development partners.

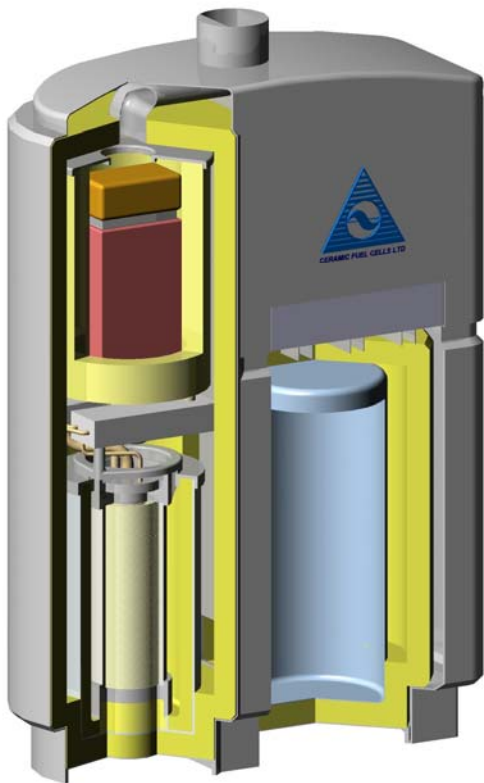
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***Caption:***  
SOFC products have the potential to provide a cheaper, quieter, greener and more reliable energy supply according to Dr Allen Conduit shown here in CFCL's facility in Melbourne.



***Caption:***  
Ceramic Fuel Cells has patented Solid Oxide Fuel Cell technology that can be incorporated into this small Combined Heat and Power unit that will generate power and provide a hot water service for homes.