



CERAMIC FUEL CELLS LIMITED

Creating the energy to succeed™

ASX / Media Release

25 October 2004

Fuel cells offer self-sufficient energy futures

In a world first, CFCL predicts its particular fuel cell design will be able to generate clean electricity utilising ethanol, a totally renewable, environmentally friendly fuel.

“CFCL is confident that its fuel cell technology can now be applied to another fuel, namely ethanol. This means that our design has even more applications, and can achieve even better environmental outcomes delivering similar high levels of energy efficiency and constant energy supply” stated Dr Karl Foger, Chief Technology Officer for Ceramic Fuel Cells Limited.

This statement follows the meeting last week of CFCL’s specialist Technical Committee at which they reviewed results from a preliminary feasibility study which revealed that ethanol could be made into a fuel mix suitable for CFCL’s fuel cell.

CFCL has also undertaken some preliminary modelling which has shown that the energy efficiency would be similar to a fuel cell using natural gas, of up to 50%. Coal fired power stations currently achieve comparatively low energy efficiency of between 25 – 30% and emit substantial volumes of greenhouse gasses in the process.

“These preliminary findings are significant as they show that CFCL’s unique design of ceramic fuel cells is flexible in being adapted to use a number of fuel sources” said Dr Allen Conduit, CEO of CFCL.

“With this development, we recognise that our fuel cells producing electricity from ethanol will be ideal for crop farmers, those industries generating plant waste, and communities without access to reliable gas or electricity” stated Dr Conduit.

CFCL is now looking to advance these preliminary findings with further exploration and practical studies in partnership with investors and relevant industries to develop this renewable power generator.

Most fuel cell designs are limited to only using pure hydrogen as a fuel source. Producing hydrogen is complex and expensive as it requires special processing, storage and currently has no established distribution system. Conversely natural gas, which is currently used by CFCL’s fuel cells to create electricity, is already widely available and distributed around the world and relatively inexpensive for customers.

Ethanol is a renewable clean fuel produced from fermented plant material. Most ethanol in the world is produced from sugar or starch, with now increased interest in volume production on farms from cellulose, such as wheat chaff and corn plants.

Contact: Helen Millicer, Investor and Public Relations Manager

0413 875 872

CFCL, 170 Browns Road, Noble Park, Victoria 3174 Australia

Tel: 61-3-9554 2300 Fax: 61-3-9790 5600

www.cfcl.com.au ABN 82 055 736 671

BACKGROUND - Energy Facts

Current world energy consumption:

80% generated from fossil fuels
87% from non-renewable sources
10.9% from renewables (excluding hydro)

Renewable energy sources

	Power supply	Production process	Distributed/onsite
Wind	variable	mechanical	distributed & on site
Solar	variable	chemical reaction	on site
Ethanol fuel cells	constant	chemical reaction	on site
Biogas generators	constant	mechanical combustion	on site

CO2 Emissions of Fuels

(assuming 100% conversion efficiency) (kilograms per megajoule)

Coal	112 kg/MJ
Methane	55 kg/MJ
Propane	65 kg/MJ
Ethanol	71 kg/MJ (renewable source)
Gasoline/Diesel	70 kg/MJ

World fuel-ethanol production *(billion litres per year)*

	2002	2006 forecast
South America	11.2	12.3
North America	8.1	13.3
India/Asia	0.2	3.0
Europe	0.4	1.2
Canada	0.1	0.3
Australia	0.0	0.3

Productivity Facts on Biofuels

Raw Material	Productivity		
	Litre/tonne	Tonne/Ha	Litre/Ha
Sugar cane	80	65	5,200
Sorghum (incl bagasse)	120	50	6,000
Corn	370	8	3,000
Wood	300	12	3,500
Rapeseed	370	3.0	1,100
Soya	180	3.2	1,600
Sunflower	320	3.8	1,200

Source: *Presentation by Prof G. Sarlos, Swiss Federal Institute of Technology, delivered to EPA Japan Conference, Dec 2003.*

Note: *Ethanol (alcohol) is not to be confused with methanol.*

CFCL, 170 Browns Road, Noble Park, Victoria 3174 Australia

Tel: 61-3-9554 2300 Fax: 61-3-9790 5600

www.cfcl.com.au ABN 82 055 736 671