



Smart Power

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CLEAN POWER FOR YOUR HOME

More power from smaller fuel cells

CFCL has developed a more powerful fuel cell and a lower cost 1 kW fuel cell electricity generator, which it believes is suitable for large scale manufacturing to meet commercial targets for cost and performance.

CFCL's next generation of fuel cells have demonstrated significant performance improvements, particularly in power density, and will be incorporated into micro-CHP units to provide clean power for homes.

This development builds on CFCL's extensive fuel cell experience, and has been assisted by the company's in-depth field trials and its work with power company customers. The new fuel cell and re-designed system components are designed to optimize the efficiency of the fuel cell stack and reduce the system cost in preparation for volume manufacture. The new stack is also more easily integrated into distributed generation appliances.

These new cells are more than twice as powerful as CFCL's current cells, and match or exceed other solid oxide fuel cell figures in terms of power density. Higher power density means that CFCL can produce the same amount of electricity from a much smaller

fuel cell stack. A smaller stack can be cheaper and is much easier to integrate into commercial appliances like m-CHP units.

The new cell technology is designed to be highly efficient, with electric efficiency of 50% and significantly



better fuel utilisation of up to 85%. The total efficiency of the integrated m-CHP unit will be higher still, as 'waste' heat is captured and re-used.

The new fuel cell stacks are designed to produce 1kW of electricity and less than 0.5kW of heat. Reducing the amount of heat produced by the fuel cell stack means the m-CHP unit can generate efficient baseload electricity all year round. Other types of m-CHP



Chief Technical Officer Dr Karl Foger demonstrates the evolution from CFCL's field trial unit, to the NetGen™ unit, and a model of the next generation fuel cell module.

units that produce more heat may have to be left idle – or else waste the heat - for several months each year.

The new metal-ceramic fuel cell stack combines important technical features and intellectual property drawn from CFCL's achievements in developing both all-ceramic and metal-ceramic stacks since 1992, as highlighted in the last issue of SmartPower.

CFCL has also significantly improved several key components that integrate the fuel cell stack into a m-CHP unit. Significant breakthroughs include a 50% smaller steam generator, a 40% smaller heat exchanger, and a 75% reduction in the airflow through the system. These achievements will make the m-CHP unit simpler, smaller and more efficient.

"This is another major step towards the commercialisation of our solid oxide fuel cell for power companies seeking distributed generation solutions", commented CEO Brendan Dow. "The developments will deliver significantly higher power density and system efficiency, both of which are key factors in enabling us to meet commercial targets for performance and cost."

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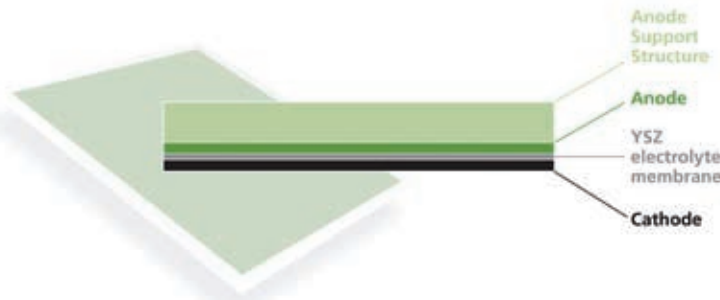
P4 More information...

For further information on any of these subjects go to CFCL's website: www.cfcl.com.au



'Commercial Ready' cells – in Detail

In our last issue of SmartPower we looked at how the Company's fuel cell technology has developed over the years, giving the Company a wealth of experience with many solid oxide fuel cell designs and materials. CFCL has built on this broad experience to develop its newest range of 'commercial ready' fuel cells.



Individual cells...

- ✓ **Square ceramic cells - 10 micron thick YSZ electrolyte cells of 70 x 70 mm**
- ✓ **Arranged in a 'window frame' array**
- ✓ **Separated by metal interconnect plates, and**
- ✓ **Stacked on top of each other**
 - Lower operating temperature – and still internally reforms gas (>99%), to deliver >50% electrical efficiency
 - Single cell tests have been running for >2,400 hours at 750c
 - very stable operation and power output (degradation of <3% per 1,000 hours)
 - running on pre-reformed natural gas in system operating conditions, ie similar fuel utilisation and pressure to a field trial system
 - Successful thermal cycle (ie heat up and cool down)

...are built into Stacks...

Interconnect materials:

- high temperature ferritic steels
- proprietary coatings on the metal
- Include compliance ('springiness') to ensure cells maintain contact

Sealing material

- Crystalline glass compositions
- Seals applied easily (dispensed)

Mechanical Structure

- Stack designed to be simple and robust
- Uniform temperature throughout the stack
- Design goal: long life electrical connections withstanding many thermal cycles.

...using the best parts of CFCL's prior fuel cell generations.

- Internal reforming - can run on a wide range of fuels
- Proprietary metal coatings
- Thermal cycling – using advanced steels and improved seals
- Verified start-up and shut down procedures
- Integrated thermal management
- Validated balance of plant components, integrated into small systems

... towards commercial design targets.

Prior generations of cell technology, field trial experience and customer feedback show:

- it is critical to control the temperature within the stack to ensure uniform heat
- Commercial products need higher power density

CFCL experience in Cells + Stacks + Systems

- **No substitute for experience** • **Fuel cells take time: difficult to 'leapfrog' stages**
- **End to end experience is valuable** • **Know-how, IP and experience builds on itself**

	Gen 1 (1993-95)	Gen 2 (1996-97)	Gen 3 (1997-2000)	Gen 4 (2001-06)	'Commercial Ready' (2006+)
Systems	Complete systems that can export power				
	Thermal Cycling				
	Fuel flexibility				
	BoP integration (thermal management)				
Stacks	Design flexibility				
	Effective (higher power output + density)				
	Long life (no poisoning)				
	Keep fuel and air separate (good seals)				
Scaling (easy/cheap to make in volume)					
Cells	Easy to make				
	Internally reforming (= high efficiency)				
	Scale up cells to useful sizes				
	Cells that generate electricity				

2006 Accounts – Revenue Up, Costs Down

On 21 September the Company released its audited statutory accounts and Directors Report for the year ended 30 June 2006.

Financial

The financial results were the same as the preliminary results released to the market on 29 August 2006.

- Net assets of £34.7m (A\$85.7m) and no debt.
- Revenue for the year from continuing operations was £840,000 (A\$2m), up 153% from last year, as a result of field trial contracts and higher interest earnings.
- Operational expenses – excluding borrowing costs – down by 3.2% including reduced research and product development costs.
- Achieved successful and oversubscribed admission to the London Stock Exchange AIM market in March 2006, raising gross proceeds of approximately £37.2m.
- All convertible notes issued in August 2005 to raise £3.3m (A\$8.2m) were converted into CFCL shares before June 2006.

Review of Operations

In the Review of Operations, CEO Brendan Dow notes:

“In 2005-06 the Company’s technology moved out of the lab and into the market, with four micro-CHP field trial units commissioned in real-world conditions with customers in Australia, New Zealand and Germany. In parallel, the Company developed and launched its pre-commercial NetGen™ unit, as the next step toward the Company integrating its fuel cells into commercial products.”

“The Company will continue the commercialisation of its technology in the coming year. Significant areas of focus will be delivering NetGen™ units to EWE and other utility partners, engaging with appliance manufacturers to develop products using the Company’s fuel cell technology, and the construction of the European powder production plant and fuel cell manufacturing plant.”

The Company has achieved the following goals it set itself in last year’s Annual Report:

Goal in 2005 Annual Report	Status at September 2006
Deliver SOFC stacks in prototype micro-CHP systems	Fuel cell stacks delivered to four field trial customers in three countries
Sign additional contracts for field trials	Additional contract signed with EWE for 10 NetGen™ units
Raise further capital and list on AIM	Raised \$91.4m (£37m) from new and existing investors and listed on AIM in March 2006
Engage with Application Development Partners	Relationships formed with initial application partners - formal agreements to be negotiated
Continue to improve the design and performance of the Company’s fuel cell technology and systems	NetGen™ pre-commercial unit designed and built in four months – less than half the size of the field trial demonstration units
Further develop income streams from field trial activities and other project work	Increased field trial revenue and received initial revenue from testing equipment alliance
Establish a plant to produce high quality zirconia powders	Building a powder production plant in the UK
Work towards establishing a fuel cell manufacturing plant in Western Europe	Detailed planning and design. Location and funding strategy being finalised.

The full 2006 Annual Report will be mailed to shareholders in October.

Shareholder Open Day

We are again inviting shareholders to visit our head office and factory in Noble Park.

Our next Open Day will be on **Wednesday 6 December 2006**, 10 – 11.30 am.

Attendance is limited to two adults per shareholding and pre-booking is essential. Previous Open Days have been booked out, so get in early!

If you would like to attend please email reception@cfcl.com.au or call **+61 3 9554 2300** during Melbourne office hours. Be sure to provide your full name, shareholder HIN or SRN, email address and daytime phone number and we will notify you to confirm your place.



Annual General Meeting

CFCL Board and management look forward to updating shareholders on the Company's activities at the Annual General Meeting, to be held at 5.30 pm (Melbourne time) on Tuesday 28 November 2006.

The AGM notice of meeting and 2006 Annual Report will be sent to shareholders in October. If you are a shareholder and have not received a notice of meeting, please contact Computershare in Australia or the UK – contact details are opposite.

As an additional service to shareholders, this year's meeting will be webcast. Details of the webcast will be posted on our website.

Broker Briefings

In October CEO Brendan Dow gave briefings to brokers and investors in Europe on the Company's technical achievements and commercialisation activities. A copy of the presentation is available on our website, or by contacting our office.

Visited our website lately?

We have recently upgraded our website at www.cfcl.com.au.

The aim of the update is to improve our communications to investors, stakeholders and the public about CFCL's technologies, products and the market we operate in.

The new site is structured around our two most accessed areas - 'News' and 'Products' - with over 70% of our visitors regularly viewing these sections. We have also added lots of new features and useful information. We hope you find the new site informative and interesting.



More information...

About your CFCL shareholding on ASX

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Spreading the word

CFCL is continuing to raise its profile by participating and presenting at key industry events, including the 2006 Fuel Cell Seminar in Hawaii, in November 2006. Over 2300 participants and 175 exhibiting companies—representing over 36 different countries—attend the annual Fuel Cell Seminar, making it the largest fuel cell meeting in the world.

Copies of CFCL's presentations are available at www.cfcl.com.au, or by contacting our office.



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Clean power for your home

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