



# Smart Power

APRIL 2005

Clean, efficient, reliable energy for the world

## Renewable Fuels and Patents

Since issuing the Prospectus in May and listing on the Australian Stock Exchange in July 2004, CFCL has reached some important milestones.

CFCL has received preliminary reports indicating that its fuel cell design is suited to the use of renewable fuels such as ethanol. This not only provides further flexibility with fuel, it has the potential to place CFCL's fuel cells in the renewable energy generation sector.

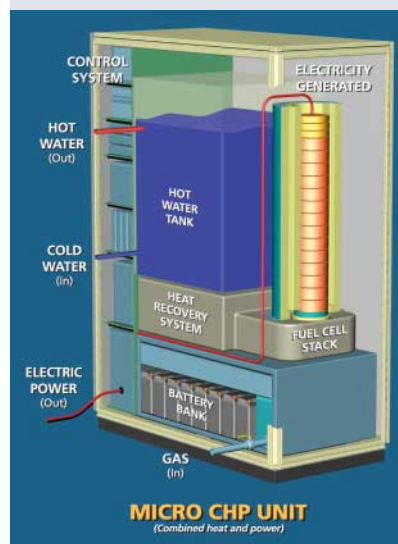
CFCL has also been awarded a number of patents for inventions in the key jurisdictions of US, Australia and China. They provide protection to such inventions as fuel cell material composition, and smart processing of fuel and heat that become part of our competitive advantage.



## THEY SAID

"Micro-CHP has the potential to substantially disrupt the established electricity supply industry both economically and technologically. It has a predicted capacity of similar order of magnitude to the existing nuclear generating capacity in the emerging liberalised energy markets in Europe."

EA Technology Ltd, UK, 2003.



CFCL's fuel cells are 'world leading' and offer 'significant potential for moving to more distributed electricity generation'.

Energy White Paper, Australian Government, 2004.

## Financial Results

In delivering the results for the half year to 31 December 2004, CFCL reported on continued progress on the commercialisation of its fuel cell technology.

The net loss for the period of \$8.5m was up by \$0.6m from the equivalent period in 2003. This was largely due to the development of combined heat and power (CHP) system prototypes for field trials (first contract was signed with Powerco of New Zealand in November 2004) and the expansion of sales and marketing activity particularly with the newly established subsidiary in Europe.

With these two steps CFCL has made significant progress toward entering our primary target market. The result for the period was better than the company's internal budgets.

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For further information on any of these subjects go to CFCL's website: [www.cfcl.com.au](http://www.cfcl.com.au)



## Message from Executive Chairman

Welcome to the first edition of CFCL's newsletter. We plan to issue the newsletter on a regular basis, to keep shareholders and interested parties informed about the Company's key achievements.

While CFCL continues to work toward significant technical targets in the design, fabrication and integration of its fuel cell with real life working systems to produce our market entry product - a micro-CHP unit - the Board and Executive Management Team are focussed on implementing the business strategy and generating revenue.

In the last few months the Board has strengthened its capacity in key areas relevant to the company's direction. The Board recognises the market potential in Europe and intends to pursue admission to the Alternative Investment Market of the London Stock Exchange. In 2004 Ceramic Fuel Cells (Europe) Ltd was established and staffed, enabling direct contact with prospective partners and customers in the UK and Europe. These discussions are continuing with a number of companies planning to visit CFCL's facilities in Australia.

CFCL has made significant gains in the last 18 months and looks forward to further achievements in 2005-6.

On behalf of the Board, I thank you for supporting the Company.

Julian Dinsdale

## New Board Members

*CFCL's Board has some new members.*



In September 2004, David Carruthers was appointed as an additional independent non-executive director. David has considerable experience in global finance, business structures, risk and debt management through work with BP Finance in UK and Brussels, and Government in Australia.



In November 2004, Barry Braithwaite replaced Sally Pitkin and joined John Dempsey as a representative of Energex Limited, one of CFCL's substantial shareholders. Barry has a strong background in business and the electricity industry.



In late November 2004, the Board invited James Pullar to join as non-executive director. James has extensive experience in the energy industry with senior executive positions at Mobil Oil Australia, Woodside and AGL.

## Market Moves

*Do you know about the quiet CHP revolution taking place elsewhere in the world?*

- UK government has set a CHP development target and Strategy for 2010
- US government has established the CHP partnership program and tax credits for investment in CHP systems
- German government passed the Cogeneration Act in 2002 providing a subsidy of €0.0511 / kWh for electricity generated by small CHP plants of 50kW or less, following agreements with industry to support cogeneration.

As at February 2005 there are six early-stage micro-CHP models (powered by combustion and turbine systems) on the market in Europe, UK, Japan and North America; sales in Europe in 2004 alone were around 13,000 units. Over the next decade there will be substantial changes as these models compete with more efficient fuel cell systems.

CFCL's micro-CHP unit is being developed to step directly into this burgeoning market and product range. For more information refer to our revamped website.

## CFCL Operational Achievements

CFCL is proud of our important achievements in improved productivity and outputs:

### Increased Production Capacity

- ✓ increased Australian fuel cell production capacity towards target production level of up to 100,000 cell plates per year,
- ✓ fuel cell 'stacks' intended for CHP units have operated - and produced electricity - for a total of more than 4,000 hours (significantly longer if we include heat up and cool down times),
- ✓ since May 2004 CFCL has conducted cold and hot commissioning of prototype CHP units with more than 1,000 hours of hot operation,
- ✓ produced more cell sets per week and importantly improved production yield.

### Process and Design Improvements

- ✓ introduced different manufacturing processes to produce more cells, of better quality, consistency and greater power,
- ✓ improved processes - including new automated steps to make fuel cell parts (electrolytes and separators) to reduce cost and improve quality and yield, and better processes for building, conditioning and testing fuel cell stacks to ensure consistent quality,
- ✓ introduced different manufacturing processes that allow our existing plant to produce more cells, of better quality and consistency, that can produce more power,
- ✓ improved designs - refined the design of the fuel cell stack for increased power density and stack longevity, and of the CHP unit for greater efficiency.

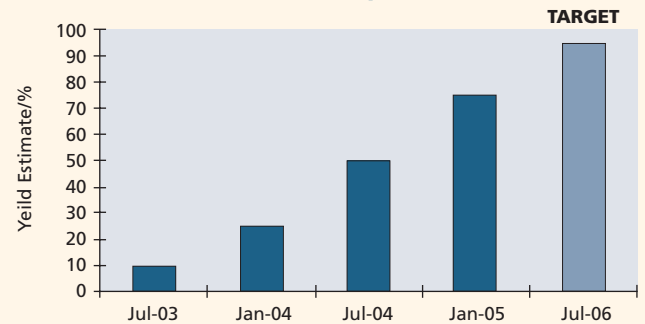
### Technical Developments

CFCL has continued to refine its core technology, including:

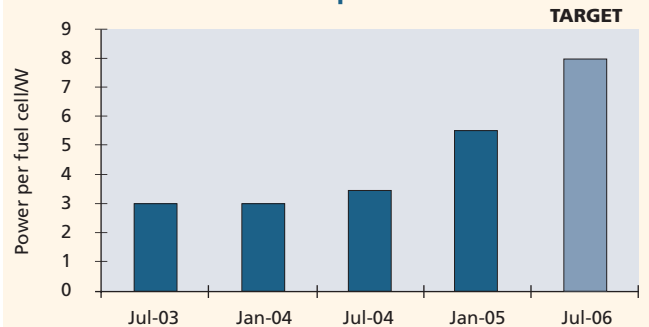
- ✓ developed a continuous process for producing high quality Zirconia powder used to make the fuel cell parts,
- ✓ developed new processes and designs to improve the seals between fuel cell parts,
- ✓ investigated the use of ethanol and biogas to power our fuel cells.

These achievements are important steps toward cost reduction and improved productivity. They also set the framework for the equipment, layout and operations of a high volume fuel cell manufacturing plant planned for Europe.

### Stack Yield Improvements



### Power Improvements



### Next steps

During the 2005/06 financial year, CFCL aims to:

- ✓ commence delivery of SOFC stacks in prototype CHP systems;
- ✓ sign additional contracts for field trials of CHP systems, including in Europe;
- ✓ engage with partners to incorporate CFCL's fuel cell technologies into end-user equipment;
- ✓ continue to improve the design and performance of CFCL's fuel cell technology and systems, including the design of the CHP system;
- ✓ establish income streams from field trial activities and other project work, including exploring opportunities to provide fuel cell testing products and services, and produce and sell high quality zirconia powders;
- ✓ establish a pilot plant to produce high quality zirconia powders;
- ✓ list on the AIM market; and
- ✓ work towards establishing a fuel cell manufacturing plant in Western Europe.

## SPREADING THE WORD

CFCL has been advocating regulatory and policy support for alternative electricity technologies and distributed generation, particularly in Australia, and encouraging innovation and introduction of micro-CHP systems as more efficient generators with hot water systems.

To see our recent presentations and submissions go to our website.

### Where to find us next:

**11-15 April 05**

Hannover Fair, Germany

**27-29 April 05**

Australian Business Council for Sustainable Energy Conference, Melbourne Australia.

## The Real New News

CFCL has updated its website so you can find useful information immediately. New material includes facts and stats on our target markets, market drivers, the fuel cell industry, the history, development and diverse application of fuel cells, government legislation and regulations, and more!

You can also 'subscribe' online to receive our Announcements directly from CFCL, within minutes of them being posted with the Australian Stock Exchange.

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

## Fuel Cell Field Trials

Taking product to market involves field trials of prototypes. Prototypes are taken from the testing laboratory to sites where partner agencies put them through their paces in the real world.

In November 2004, CFCL contracted with Powerco of New Zealand to supply two units for field trials. These will be CFCL's 1 kW micro-CHP systems, which produce both electricity and heat for hot water, thereby reaching particularly high efficiencies.

CFCL is currently negotiating further field trials of these systems in Australia and Europe.

## New Share Registry

In February 2004 CFCL retained international share registry provider Computershare to maintain CFCL's Australian share register and to establish and maintain a 'depository interest' facility upon CFCL's planned admission to the London AIM market.

All shareholders should have received formal notification by post or through their broker.

For further information and links to Computershare so you can update your records and nominate to receive all formal correspondence by email (thereby saving printing, paper and postage costs), please visit [www.cfcl.com.au](http://www.cfcl.com.au) and go to the new Investor Section.

### Queries and contact:

**Helen Millicer** Investor and Public Relations Manager  
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## Newsletter on line and save

You can help CFCL reduce costs and the impact of printing and postage by electing to receive this newsletter via email. You can also register to receive our announcements via email as they are posted to the Australian Stock Exchange.

Just go to [www.cfcl.com.au/investor](http://www.cfcl.com.au/investor) and follow the links.

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